

## **WHITE PAPER**

**Managing in a Networked World: Assessing and  
Supporting Collaboration in Social Networks**

by

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## MANAGING IN A NETWORKED WORLD: ASSESSING AND SUPPORTING COLLABORATION IN SOCIAL NETWORKS

“It’s all about relationships these days. You would think technology would change that, but if anything it seems to be making it more profound. What I have come to realize is that we craft our strategies and elaborate organizational frameworks in thinking and language that is overly distant...shifting abstract boxes and lines on an organization chart to try and achieve some strategic objective. The fundamental problem with that today is that so much work gets done not by virtue of how a few executives prescribe it but in informal networks that form locally and are constantly shifting. We need better means of working with and supporting these networks if we want our plans to have the intended effect.”

– *Fortune 250 Executive*

Over the past 15 to 20 years several management innovations have begun to challenge traditional principles of organizational design. De-layering, reengineering, team-based structures and various continuous improvement initiatives have pushed decision-making and accountability down within organizations and presumably reduced functional ‘silos’ and hierarchical barriers to information flow. At the same time, efforts across organizations such as joint ventures, alliances or supply chain integration, to name a few, have made boundaries between firms more permeable. In the ideal, these initiatives have pushed us toward the “boundaryless” organization – a form that is adaptive, efficient and innovative as a product of removing unnecessarily restrictive policies and procedures, rigid work processes and staid hierarchical communication channels and decision-making.

While presumably creating more adaptive organizations, a byproduct of these initiatives is that work of importance increasingly is coordinated and negotiated within informal networks of employees rather than through channels tightly prescribed by formal reporting structures or detailed work processes. Put an organizational chart (the formal structure) in front of most any employee, from line-worker to executive, and they will tell you the boxes and lines do not reflect the way that work gets done in their organization. These people intuitively know the importance and power of informal relationships in organizational life. Unfortunately, these networks of informal relationships are often fragmented by management practices and/or organizational design principles biased toward task specialization and individual workers rather than collaborative endeavors.

This is particularly problematic for organizations in knowledge intensive sectors where it is rare for any one person to individually know enough to solve increasingly complex problems. Usually when we think of where people turn for information we think of

databases or other sources of information such as personal hard drives or policy and procedure manuals. However, a more significant yet often overlooked component of an individual's information environment is the relationships a person is able to tap for various informational needs. For example, in summarizing over a decade's worth of research, Tom Allen of MIT found that people were roughly five times as likely to turn to friends or colleagues for information than to other impersonal sources.<sup>1</sup> Our own research and that of many others also continues to emphasize the point that who you know has a great deal to do with what you come to know over time.

All organizations have informal networks that have a significant impact on the success of the enterprise yet are frequently unwittingly fragmented by various managerial decisions. The general health and connectivity of these networks can significantly impact strategy execution and organizational effectiveness. As a result, assessing and supporting the appropriate sets of interactions within informal networks is an issue of strategic importance. However, outside of initiatives focused on developing communities of practice, there has been little practical attention paid to these increasingly important structures in organizations.

Two years ago we initiated a research program to determine how organizations can better support work occurring in and through informal networks of employees. Working with a consortium of Fortune 500 companies and government agencies, we assessed collaboration and work in 33 informal networks from 28 different organizations. In all cases, the networks provided strategic and operational benefit by enabling members to effectively collaborate and integrate expertise. What we learned in this process is that developing and supporting rich, dense informal networks often requires counter-intuitive thinking on the part of managers. This article outlines important means of supporting critical informal networks in organizations; however, as social network analysis is often a novel concept to managers, we begin with an example.

## **SUPPORTING STRATEGICALLY IMPORTANT COLLABORATION**

Strategically important informal networks within organizations are quite often invisible in the sense that they do not reside on a formal organizational chart and are frequently geographically dispersed. For example, informal networks within communities of practice or new product development initiatives, across knowledge intensive core work processes or at critical junctures of alliances or mergers all significantly impact organizational effectiveness, yet are not readily observable. Social network analysis, a set of analytical tools that can be employed to assess relationships between people, can help

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<sup>1</sup> See Allen, T. (1977). *Managing the Flow of Technology*. Cambridge, MA: MIT Press.

executives visualize and understand various aspects of relationships either facilitating or impeding these networks. Does information flow smoothly within an informal network? Do certain functional departments or business units appropriately collaborate in taking their services to market? Is the collective expertise resident in a network effectively leveraged? By making these critical patterns of interaction visible, managers can make informed decisions to improve collaboration at strategic junctures within an organization.

Social network analysis has been in use for some time as an analytic tool and theoretical discipline in such fields as sociology, anthropology, social psychology and organization studies. There is a vast body of knowledge that has accumulated on the analysis of social networks dating back to Dr. J.L. Moreno's attempts in the early 1930s to map all of the relationships within New York City. At this point, one of the more widely used introductory primers on social network analysis exceeds 800 pages in length and the leading social network software package has literally hundreds of analyses that can be run on a given social network data set. However, in comparison, there has been much less effort put into understanding how social network analysis can be used prescriptively to support groups in organizations. Despite the complexity of the academic work on social network analysis, we have found that very insightful assessments can be conducted with relatively little effort.

### **Targeting a Strategically Important Network**

The first step in conducting a social network analysis is to identify a group within the organization where investments made to improve collaboration have the potential to yield a significant payback either strategically or operationally. On occasion, these groups are represented on the formal organizational chart. Just as frequently, however, groups where collaboration is strategically important are not found on organizational charts and in fact are frequently fragmented by various organizational design decisions. For example, informal networks that cut across core processes, such as commercial lending or software development, derive strategic and operational benefit from effective collaboration at functional boundaries. Alternatively, communities of practice are usually not formally recognized within an organization but can be critical to integrating functional expertise distributed by virtue of physical location or organizational design decisions. As a result, when considering a social network analysis it is important to push beyond the formal organizational chart in identifying groups where improved collaboration can yield strategic or operational value.

Two categories of questions are worth considering when targeting a group for a social network analysis. First, does effective collaboration within a given group confer current

or future strategic benefit for the organization? It is increasingly the case in knowledge intensive work that collaboration within or across departments of an organization can yield competitive advantage by virtue of either reduced cycle times or improved quality of product/service offerings. Alternatively, it is also often the case that an organization's core capabilities are derived from a unique pattern of coordination and collaboration among an organization's functional departments or business units.

Second, would improved collaboration make a difference in either effectiveness or efficiency of this group's work? In terms of effectiveness, it is often the case that the ability to leverage more effectively disparate expertise in a network can have a dramatic impact on a given group's work. For example, promoting collaboration within communities of practice resident in drug development processes has had significant effect on drug development initiatives. Alternatively, better integration of national or global consulting practices frequently results in delivering a higher quality solution to important clients. Similarly, organizations can often realize significant efficiencies through network integration that can be quantified by measuring time and costs saved by more seamlessly leveraging expertise resident in a network.

### **Assessing Social Networks**

Once a group has been identified, the second step in a social network analysis is the collection of social network information. While social network information can be obtained in a variety of ways, from tracking e-mails to observing people over time, the most effective means is often to administer a 10-20 minute survey designed to assess relationships amongst a group. As with any survey research, it is important to design network surveys that require as little time as possible to complete in order to improve both accuracy and response rate. This is especially important in social network analysis where a very high response rate is essential to truly understanding the network of a group.

The second critical dimension to consider in a network survey is the set of relationships one is interested in assessing. In most companies we have worked with, people are very interested in assessing information networks - in other words, in asking "Who do you turn to for information to get your work done?" In fact, organizations quite often will want to go one level further and try to get an understanding of certain kinds of information or knowledge that must move effectively within a given group for it to be successful.

In addition, organizations are frequently interested in other relationships that help to assess different 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 each person in this group how does it impact your energy level?”). Understanding these networks can be particularly helpful in developing organizational contexts that promote quality of work life. Alternatively, many other organizations have chosen to map more instrumental networks such as decision-making (e.g., “Who do you turn to for input prior to making an important decision?”) or innovation (e.g., “Who are you likely to turn to in order to discuss a new or innovative idea?”). Understanding these networks can be particularly helpful in ensuring that bottlenecks are not slowing a group and that the group’s expertise is leveraged effectively. In short, although one’s ability to map networks of relationships is limitless, it is important that relationships assessed inform interventions that can improve a given group’s performance.

### **Interpreting a Network Diagram**

Information collected from social network surveys can then be used to create network diagrams that illustrate the relationships between members of a group.<sup>2</sup> For example, consider the information network in Figure 1A. This is a network of information flow within a new product development team that is globally dispersed. In this case each member of the team was asked, **“To whom do you turn for information to get your work done?”** The network has been drawn to differentiate between those members who are in manufacturing, finance and marketing.

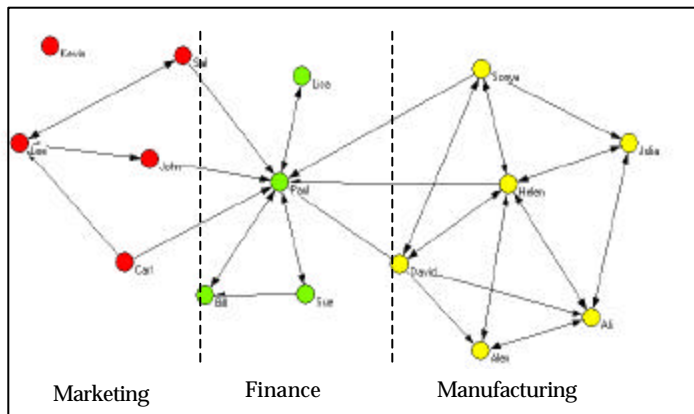
There are several observations that one can immediately make about this network. First, although the new product development team was formed to operate as one cohesive unit, it is readily apparent that information sharing occurs largely within the three subgroups of manufacturing, finance and marketing. There is very little information sharing between the three groups, which likely hinders their ability to effectively pool unique perspectives in the development process. We see this very frequently; functional “silos” seem to consistently and powerfully impact collaboration in informal networks. In this case, the fact that the team is virtual also acts as a barrier by precluding serendipitous conversations that could help people with different functional goals and perspectives find common ground.

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<sup>2</sup> A significant component of a social network analyst’s toolkit lies with the quantitative metrics that can be used to assess and interpret social network information. Quantitative analyses can substantiate findings from the network diagrams and are specifically useful when looking at large networks where the diagrams may be more difficult to interpret. Though beyond the scope of this article, readers interested in further depth should seek out Stanley Wasserman and Katherine Faust’s *Social Network Analysis: Methods and Applications* or John Scott’s *Social Network Analysis*.

**Figure 1A: “To Whom Do You Turn for Information to Get Your Work Done?”**

**The Network for the Team**

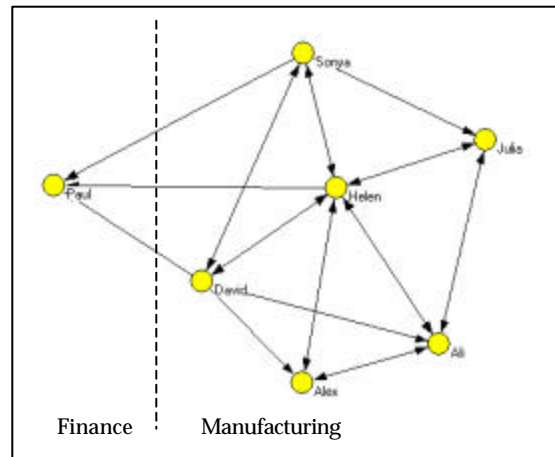
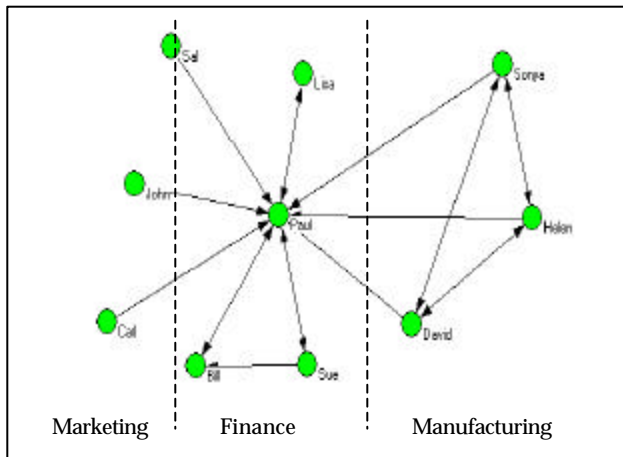


**Figure 1B: “To Whom Do You Turn for Information to Get Your Work Done?”**

**Individual Networks**

**Paul**

**Helen**



Second, it is also apparent from Figure 1A that the manufacturing sub-group is very tightly knit; there are few connections between people within the finance or marketing sub-groups. This can be either a positive or negative feature of this group - only by doing interviews behind the network analysis could we know for sure. On the one hand, this group might have developed effective communication practices that the team as a whole could benefit from employing. On the other, the manufacturing group might be overly reliant on each other and this may be a barrier to integration. Tightly knit groups often develop their own subcultures, which can serve to keep them from integrating effectively with the overall team.



Third, when looking at relationships between people it is usually important to assess the directionality of the ties. In an information network, it is often the case that one person will claim to seek out another for information, yet the person sought out may not indicate that they turn to the seeker for information – in social network terms the relationship is asymmetric. When looking at asymmetric relationships such as information seeking, the directionality of the relationship is indicated in the network diagrams by arrowheads. For example, in Figure 1A, we see that John seeks information from Paul, but Paul does not seek information from John. In contrast, other relationships are bi-directional, such as Paul and Lisa who seek information from each other. The directionality of ties can help us understand a person's role within an information-seeking network. If an individual has mostly out-going ties, then they are highly dependent upon the group as a whole and in fact might be impacting the productivity of the entire group. In contrast, if a person has mainly incoming ties the group is heavily reliant upon them.

Fourth, network diagrams allow you to see who are the most prominent people within a group. The people with many arrowheads coming in to them are the most sought-out people in the network and as a result are generally the most influential. In Figure 1A, the person with the most incoming ties is Paul who has nine people in the team that say they rely on him for informational purposes. Paul is a key person in the finance group with each of the other three people coming to him for information. He is also a central person overall; people from manufacturing and marketing come to him for information. People such as Paul often play a very positive role in the group. They are both highly valued for the information that they possess and they are an important source of cohesion within the group. Should such a person leave, they not only walk away with valuable expertise but also significantly impact the overall effectiveness of a given network that must now reconfigure to compensate for that person's departure. Of course, it is also possible that a group can become too dependent on an individual and a highly central person might in fact be a bottleneck that slows the flow of information or decision-making within the group.

Fifth, just as important as identifying the central or prominent people within a group, social network analysis can also help us get a better sense of which people are loosely connected or even completely isolated. Quite often peripheral people can be seen as under-utilized resources that for whatever reason a group is not effectively leveraging. For example, in Figure 1A, we see that Kevin is completely isolated and Carl has no incoming arrowheads, indicating that no one goes to him for information. Getting such people more effectively integrated into a group can be critical for effectiveness and efficiency of a network, particularly in today's era of turnover where organizations don't

have the luxury of waiting six months to a year for people to be effectively integrated. In addition to representing under-utilized skills, these people are often much less satisfied with their work and also more likely to leave an organization.

Finally, from a different perspective, network diagrams can be helpful in allowing people to assess the effectiveness of their personal networks. Thus far we have presented network analysis as a group level tool that can help leaders intervene in various ways to promote the health of a network. An equally powerful way to promote connectivity within a group is by providing people in a network diagram with a customized view(s) of their personal network. Most people intuitively know that their network is an asset that helps with a variety of tasks. They rarely take the time, however, to assess and develop this asset in more than an ad hoc fashion. Providing people with a means of planning their personal network development is a very powerful way to promote overall connectivity within a network over time.

Social network information can be used to assess each person's individual network and provide customized feedback to help an individual develop a more effective network. Such feedback can allow them to better understand biases in their network and ways that they might invest effort in developing certain kinds of relationships and decrease investments in others. For example, is a person only getting information from a certain hierarchical level and so potentially not learning from those lower in the hierarchy (a very frequent occurrence in all of the networks we studied)? Alternatively, is a person only leveraging those people that are physically close or in the same functional unit, or are they actively reaching out to different people to get a diversity of information? Given the extent to which people learn from other people at work, we have consistently found these to be powerful questions to ask of individuals in helping them determine the effectiveness of their own networks.

In Figure 1B, we have extracted Paul and Helen's individual networks from the main network diagram. In this case, Paul has a very diverse network but it consists of mostly incoming ties. He actually only goes to people within his own group (finance) for information. In an ideal situation, Paul would be reaching out to people from the other two groups. In contrast, Helen's ties are all two-way, but they are only with people in the manufacturing group. It would be beneficial to Helen as an individual and for the new product development team as a whole if she were to reach out to people in finance and marketing.

## Promoting a Healthy Network

Social network analysis can make visible (and so actionable) interactions amongst a group thereby focusing executive attention on the way work is actually happening. In general, various means of promoting connectivity and effectiveness of a group become quickly apparent through a cursory review of a social network diagram. However, throughout our research we also found that promoting the health of these informal networks often required counter-intuitive shifts in executives' thinking regarding how to develop and support critical informal networks. In almost every organization we studied critical decisions were going to be made based on an incorrect view of how to support these informal networks in organizations. As a result, a critical first step for any proposed intervention strategies was to surface and help executives and managers reconsider often deeply held assumptions about informal networks in organizations. We turn now to describe these pervasive assumptions, or myths, (summarized in Figure 2) and present alternative ways of thinking that have proven successful in various interventions.

**Figure 2: Managing in the Networked Age**

<b>Myth</b>	<b>Emerging Perspective</b>
"We just have to find a way to communicate more to build better relationships."	This is more about developing and continually updating meta-knowledge amongst a group of "who knows what."
"We really need everybody connected to everyone else."	In networks of any size this is impossible --- people only have so much energy that they can put into developing and maintaining relationships. A network perspective allows executives to target junctures where collaboration yields payoff.
"We can't do that much about these informal networks."	Organizational context, including strategy, organizational design, leadership and culture, has a significant impact and is actionable.
"Where people fall in these networks is really up to personality."	Integration in these networks is only partially related to personality characteristics (at least as we understand them now). Behaviors are important and can be both trained and embedded within organizational practices.
"The central people in these networks are bottlenecks and have got to make themselves more accessible."	More often than not central people are not hoarding information but overloaded by myriad requests. Developing a healthy network then requires not just working harder, but systematic re-allocation of: (1) information domains and (2) decision rights.
"I already know what is going on in my network."	Maybe. But often executives have no way of really knowing in an increasingly virtual and mobile workforce where spans of control have exploded.

**Myth #1. “We have to find a way to communicate more to build better relationships.”**

Quite often managers and executives equate informal, social networks with communication and socializing. As a result, it is very common for executives to immediately conclude that to fix fragmented or sparse networks all that is really needed is more and better communication, until we ask the showstopper question: Do you, yourself, want more meetings or e-mails? Most executives immediately cringe at the thought and intuitively know that proposing more communication in a world of information overload is not likely to be an enduring means of creating a healthier network. At the end of the day, people have only so much relational energy that they can invest in meetings or other forms of communication to help develop social networks.

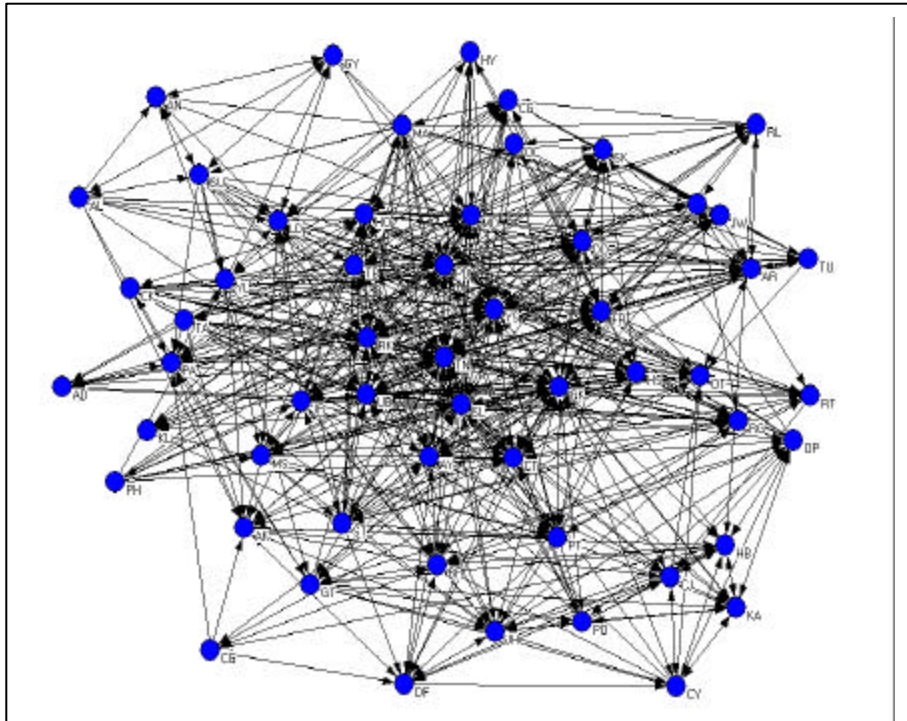
Further, if we are just concerned with promoting communication in informal networks, it is very difficult to know if the interactions we promote are having the desired impact on organizational effectiveness. Just mapping a network based on who is communicating with whom does not tell us if what they are communicating impacts the effectiveness of a group. Several times in our research we mapped two separate networks within organizations: (1) whom do you typically communicate with and (2) whom do you typically turn to for information to get your work done. These networks are often strikingly different, and in fact subtracting the information network from the communication network usually results in a quite dense network of people that say they are communicating but getting no useful information from each other. We have outlined this view of the top 42 executives in an investment bank in Figure 3. Even a cursory review of this diagram makes the point that simply promoting communication in a given group may or may not have the desired impact on organizational effectiveness.

Rather than focusing on increasing communication flow in a group, we have found it more important to develop a network’s ability to leverage expertise in the face of new problems or opportunities. From an informational perspective, we can think of networks in two very different ways: actual and potential. First, we can consider how a network is activated at any given point in time by assessing who is obtaining information from whom. This can be a helpful view, but it is limited in that it tells you how a network is reacting to a current set of projects or opportunities rather than who might be helpful in tomorrow’s opportunities.

The group of people that one knows and has the *potential* to draw on for knowledge is not the same group of people uncovered by network questions identifying who *actually* obtained information from whom in the recent past. It is often the case that people know of and are able to tap into a much broader network of relationships for informa-

tion or knowledge than who they have interacted with in the recent past for a given task.

**Figure 3: Executives Claiming They Communicate but Get No Useful Information**



As a result, we have found it important to assess informal networks from a latent perspective of who knows what, a view that allows us to understand the potential of a network to react to new opportunities or problems. Focusing on the development of this awareness of who knows what in a network does not necessarily run into the same problems of limited time and space as if we focused on communication patterns. It also gives us fundamentally different intervention opportunities than if we simply assessed information flow. For example, if we find that the “who knows what” network is sparse, we might suggest skill profiling systems, revised staffing practices, different approaches to new hire orientation or action learning sets. In contrast, if people know each other’s expertise but are not able to gain access to each other, then an entirely different set of interventions might be proposed in terms of such things as mobile communications, peer feedback processes or revised incentive schemes.

By working with dimensions of this latent network rather than just promoting information flow or communication in these social networks, we have more sustainable ways of intervening that don’t require everyone to be in contact with everyone else. For example, building awareness of “who knows what” within a critical network is not difficult

but is often overlooked. Most of our team interventions focus largely on shared vision and process skills that help to create a harmonious environment, but do little to educate team members of each others' unique skills and abilities. This is a larger problem than one may think on first blush. Studies consistently show that when work groups form to engage in a task they experience what is called the unshared knowledge problem. Rather than engaging in discussions that help them to learn the unique backgrounds of individual members, they tend to focus on some domain that people have in common.

Of course this is a natural human process. By finding common areas of interest, acquaintances or past experience, we are able to start a conversation with people we do not know. However, the result is that groups often never get to an understanding of their teammates' unique skills and abilities until extremely late in a given effort (if at all). Rather than engage in experiential learning and group process activities such as ropes courses focused exclusively on team process skills, it is more effective to focus on task-based activities that serve to develop both team process and awareness of others' knowledge in relation to the task at hand. Such interventions help build harmony while at the same time also establishing awareness of others' knowledge.

**Myth #2. “We really need everybody connected to everyone else.”**

Frequently there also seems to be a bias toward over-correcting a sparse or fragmented network as executives jump to the conclusion that more connections are always better. In networks of any size it is not possible for everyone to be connected to everyone else. In fact, rarely do you want high collaborative activity among all departments within an organization. Rather we have found that one of the more powerful applications of network analysis is to target critical junctures in networks where improving collaboration has a strategic payoff. Instead of trying to develop a fully integrated network, a more fruitful approach lies with focusing on relationships that are strategically worth investing time and energy to develop and maintain.

For example, we assessed the leadership network of the top 62 executives within a commercial bank. The CEO had a vision of creating an awareness of “who knows what” in this group so that people in the organization could more effectively tap into their colleagues' expertise to respond to new lending or fee-based opportunities. He believed (and had stories to substantiate the point) that lending or fee-based opportunities were often overlooked by his employees simply because they did not know that the organization contained the relevant skill sets to address the opportunities.

The social network analysis was particularly instructive when we looked at the level of collaboration between functional departments. Figure 4 displays a view of this network

in a table format. The numbers in the table represent the percentage of pairs of people who had a working collaborative relationship out of 100% possible connections. The table is broken out by function so that we can assess the degree of collaboration within and between divisions. For example, we can read from the table that 49% of all pairs of individuals within the Real Estate Lending division had collaborative relationships. In stark contrast, we see that only 10% of all pairs in which one person is in Real Estate and the other is in Commercial Lending were collaborating.

What is instructive about this kind of a view is that it helps us assess the quality of collaborative activity between divisions, functions or teams and so helps us identify where necessary collaboration is not occurring. In this example we found a significant lack of collaboration between the Real Estate and Commercial Lending divisions, given the organization’s strategic initiative to integrate service offerings for key customers. Just as importantly we found a lack of integration between Risk Assessment and the lending divisions (real estate and commercial), another shortcoming given the institution’s recent restructuring to integrate Risk Assessment into the lending processes earlier to avoid excessive re-work and cycle time.

**Figure 4: Targeted Collaboration**

	Commercial Lending	Commercial Real Estate Lending	Credit and Risk Assessment	Finance/ Accounting/ IT/ HR
Commercial Lending	16%			
Commercial Real Estate Lending	10%	49%		
Credit and Risk Assessment	8%	7%	25%	
Finance/ Accounting/ IT/ HR	8%	6%	40%	62%

In many other organizations we have worked with, we also found this kind of cross-boundary view powerful for identifying points where collaborative activity was not occurring due to organizational boundaries and thus providing a more targeted approach to interventions. With network analysis, we can take a portfolio approach to considering the relationships that are worth investing time and energy to develop and maintain. Mapping the pattern of information flow (or, more frequently, lack of flow)

across functional barriers can yield critical insight into where management should target efforts to promote collaboration that will provide strategic benefit. Quite often initiatives attempting to promote collaboration and learning take a cultural perspective and usually struggle with the enormity of the task at hand. In contrast, we have found that by targeting junctures in networks that hold strategic relevance for an organization it is much more feasible to intervene where investments in collaboration yield strategic payoff for the organization.

**Myth #3. “We can’t do that much about these informal networks.”**

Many executives have either learned in business school or through their own experience that the informal structure of the organization is just that – informal and not something you can really do that much about. In part this problem seems to derive from a lack of tools with which to assess the informal structure of an organization. As outlined above, social network analysis’s ability to make critical patterns of interaction visible is an important first step in identifying intervention opportunities. More problematic though is a seemingly pervasive belief among many executives we have worked with that any given network pattern is exclusively the result of interpersonal relationships between various members. Often times executives will explain certain network patterns away by claiming they are “personality issues” between two executives or two sub-groups. While these relational dynamics can be important, it is far more frequently the case that there are systemic reasons that drive ineffective network patterns. Rather than chalk up a split in a network to personalities, we often push executives to understand how features of the organizational context drive these patterns.

Typically we have found that networks are focused or fragmented as a product of strategic objectives and/or various aspects of an organization’s formal design. Unfortunately we observed that executives have often overlooked the impact of organizational context on collaboration. When context was considered, it was usually in the form of a technical solution that missed the more enduring elements of organizational context that motivate certain patterns of collaboration. In fact, most of the organizations we worked with had a more than adequate technical infrastructure that was highly underutilized (e.g., skill profiling technologies as well as virtual work environments). What these executives did not have was a more holistic view of how organizational context impacted critical networks. Our research seems to indicate that four aspects of organizational context have a significant impact on collaboration in informal networks (see Figure 5).

First, an organization’s strategy and processes for budgeting and planning, though often distant from a given network, can have a great deal to do with patterns of collabo-

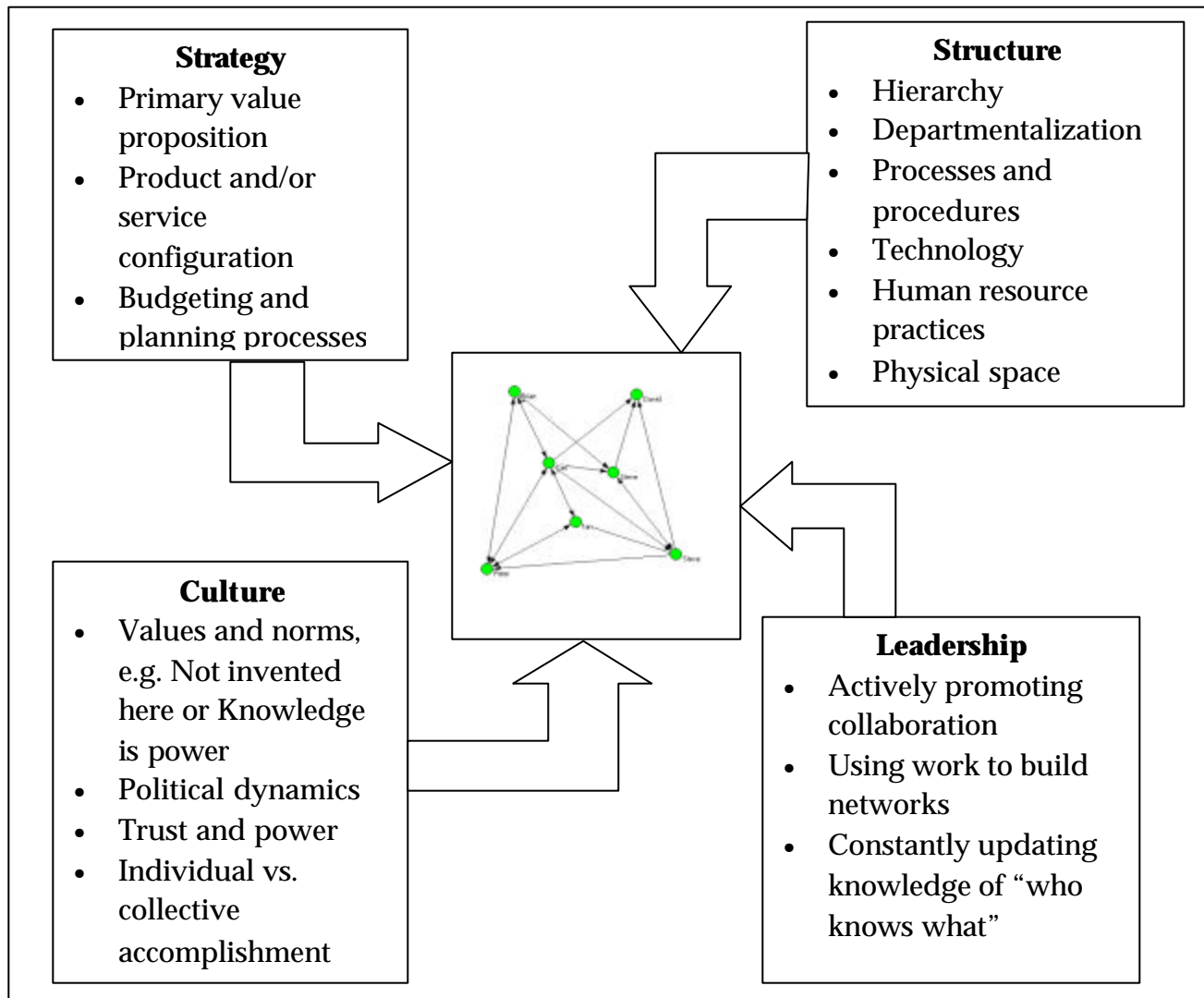


ration both within and between critical functions, departments or strategic business units. Deciding to serve certain markets with a given product or service architecture can predictably focus or fragment networks within organizations. Alternatively, budgeting and planning processes that focus exclusively on business unit goals and rolling these up into a larger strategy (versus those that actively budget for and set goals around projects requiring integration between units) has a significant impact on who is motivated to collaborate with whom. As a result, understanding the way that organizational goals and processes for setting these goals impact a given network is an important first step in ensuring that an organization's context is not mitigating interventions implemented at a local level.

A second critical component of organizational context impacting collaboration within networks occurs as a product of formal organizational design. For example, design decisions made on such aspects as structure, processes and procedures, human resource practices and communication technologies all impact collaboration within a given network. Third, and equally important, is the "soft wiring" in an organization. Throughout our work we consistently found that certain cultural norms also have a strong impact on the level and kinds of collaboration within a given network. For example, cultural values within an occupation or organization that prize individual accomplishment over collaborative endeavors or behavioral norms that keep people from sharing ideas until they are fully formed can result in more sparse network patterns. While different aspects of formal design and culture are critical in different networks, the important point is to develop an awareness of how these aspects of context can be molded to better support collaboration at strategically important junctures in networks.

Finally, leadership beliefs and behaviors also have a disproportionate impact on the extent to which a given network is integrated or fragmented. We typically find that leaders of more integrated networks simply think of both their work and their role as a leader differently. These people use ongoing work or temporary projects as a means of building relationships and networks. They seem to find time to stop and speak with people about their work rather than rushing from one meeting to another. And if there is an open space environment, they plant themselves in the middle of it rather than finding an excuse to keep an office that is still the privilege of hierarchy. The important point is that more effective leaders exhibited a set of behaviors that encourage connectivity—and these behaviors can be developed amongst even the stodgiest of leaders.

**Figure 5: Organizational Context Focuses or Fragments Networks in Certain Ways**



In general, interviews with a handful of both central and peripheral people in these networks can be very informative for identifying elements of organizational context that one can work with to promote the health of informal networks. Quite often we find that elements of context (e.g., reward systems, cultural values or leader behaviors), if not aligned with a given network, will over time derail interventions just targeting relationships within a network. While knowledge work is often emergent and so difficult to try to design in with the precision that Frederick Taylor might have suggested, we have found that executives can shape a context that promotes effectiveness of this work.

#### **Myth #4. “Where people fall in these networks is really up to personality.”**

Another commonly held belief is that individuals who are good networkers are simply different --- they have certain personality characteristics that make them so well connected. The commonly held stereotype is that a person who is central in an informal network is extroverted, social and aggressive in the pursuit of their goals. Unfortunately this powerful and pervasive belief in the importance of personality traits often halts action to address these networks because executives believe that nothing can really be done to change a person’s personality. A question we frequently hear is: How can you teach personality traits to people in order to improve a given network?

What we have learned over time is that the link between one’s position in a network and personality characteristics is tenuous at best. We have combined many of our social network analyses with personality scales (e.g., extroversion, Myers-Briggs, positive/negative affect, learning styles, etc.) and found only tenuous and inconsistent relationships between personality traits and one’s centrality. Other scholarly studies undertaken have shown slight relationships between personality characteristics and network position; however, these relationships are often not that strong and findings are not consistent across studies. As a result, we have found that while people might have certain proclivities that lead them to have larger networks, personality alone does not seem to be that important in terms of one’s position. Even the most introverted amongst us can, and often do, have robust personal networks.

Our interviews with people in central and peripheral positions in these networks suggest that people who become central more quickly than others think of and engage in their work a little differently. First, they often seem to structure their work differently. In contrast to thinking exclusively about task execution, you often hear these people talk about ways to integrate other people in getting work done. Whereas a person with fewer connections focuses on the task at hand, those with more look for opportunities to use work to build relationships. Second, more central people in these networks tend to realize the future value of relationships and systematically take the time to build their own networks. These people often include relationship development as a critical part of their professional development plans and always seem to have lists of people they are trying to meet or work with and those to whom they owe calls. In general these people are not political, but take specific actions to continually enrich their networks as an asset.

New intervention opportunities emerge if we shift our perspective from network patterns being a product of entrenched personality characteristics to a view of network patterns as resulting from intentional behaviors. In contrast to personality traits,

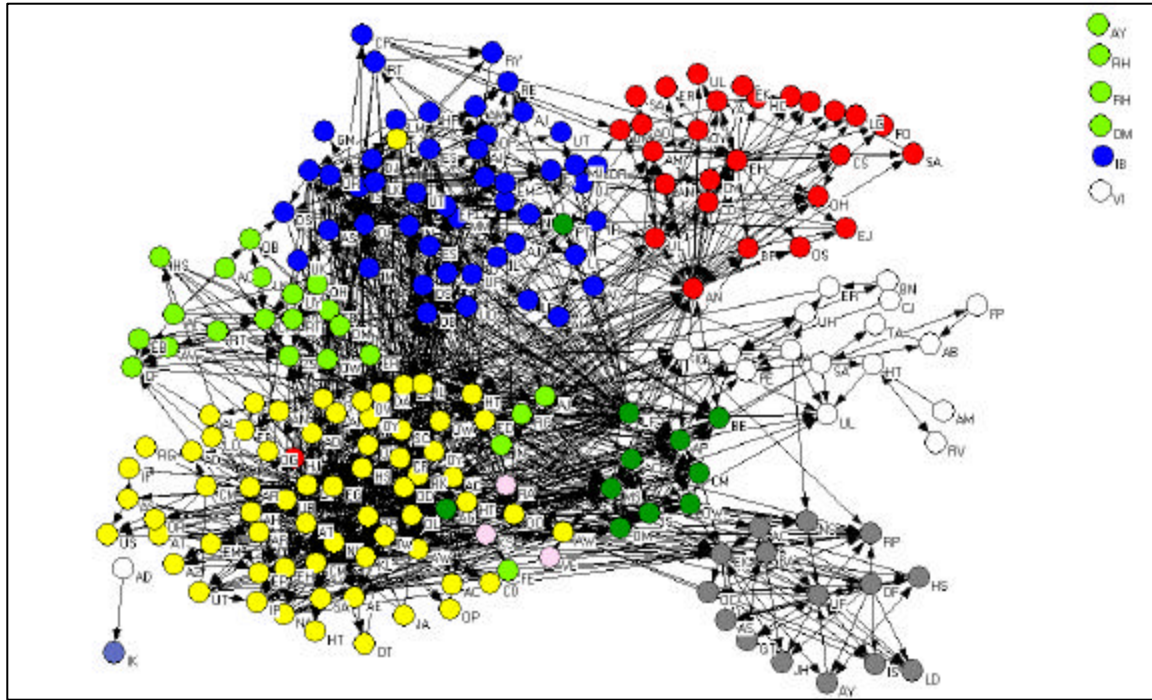
behaviors can be more readily taught or encouraged by an organization's practices. For example, if we want to ensure that we get new people up to speed quickly and also leverage the expertise of peripheral network members, there are some specific steps we can take to encourage a grassroots approach to network development. Training can be done to help people learn how to assess, develop and support their own networks as an important asset. Network development can also be embedded in an organization's routines by making it a critical component of orientation practices, professional development plans, reflective learning exercises and staffing initiatives.

**Myth #5. "Central people are bottlenecks and have to be more accessible."**

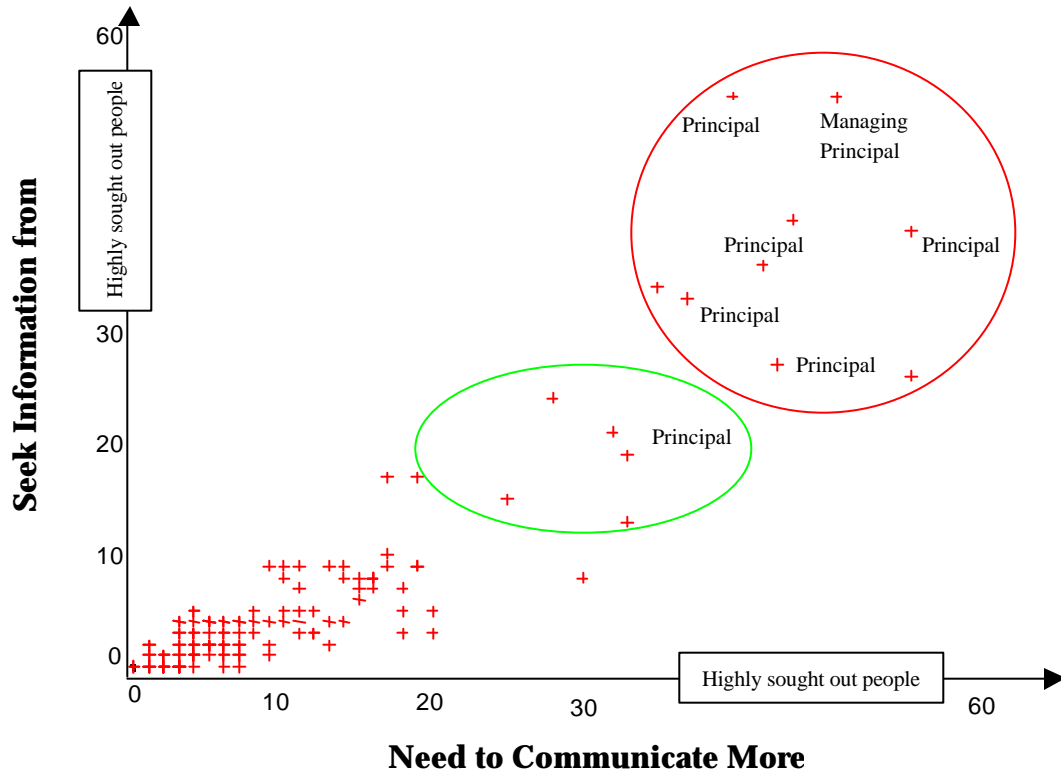
People's eyes are always attuned to the central people in network diagrams to get a sense of who seems to be important. Generally, what we find is that people seem to be central in these networks for one of three reasons: (1) they have sought after expertise within a group; (2) they are just nice people and (3) their jobs have grown beyond their ability to keep up. Overall it is this third category that is both most prevalent in what we have seen and most troubling to the overall effectiveness of a group. Often these individuals have become significant bottlenecks for a group and generally have no way of ever learning this. These over-burdened workers are often moving at an incredible pace during long hours and so never even realize that they are holding others up.

As an example, we outline in Figure 6 two views of a global network of 220 people within a technology organization. The Managing Principal running this group had six direct reports based in various regions of the world while the rest of the organization reports to them. These six regions are represented by different colors in the network diagram, but what becomes very clear is the incredible burden placed on the leadership group by virtue of the large spans of control. This becomes even clearer when we look at a different view of this network at the bottom of Figure 6. Here we have plotted each person's relationships on two dimensions: (1) the Y axis reflects the number of people coming to a given person for information and (2) the X axis reflects the number of people saying they need to communicate more with that person to be effective in their work. To take an extreme example of an over-burdened leader, look at the managing principal in the top right hand quadrant. Here is someone who has 51 people indicating that they come to him for critical information to get their work done. At the same time he has another 48 people saying they would be more effective in their work if they were able to communicate more with him. In short, we have someone who is already working at his limit yet somehow has become a bottleneck for the larger group.

**Figure 6: A Global Consulting Practice**



**Who are the most sought out people for information and whom do people wish to communicate more with.**



This was a significant problem with real business implications throughout the entire network. Interviews with people in this group disclosed opportunities missed or projects that dragged on simply because they could not make contact with one of the decision-makers in a timely fashion. What was most interesting about this is that the Managing Principal really had no idea of the extent to which he was slowing the group. The immediate world that he experienced was one of fast decisions and action – things always felt like they were happening at an incredible pace to this person. It was not until we sat down with this graph and did some interviews with other people in his network that he became painfully aware of the extent to which work was slowed around him.

How do you solve this problem? Though this is an extreme example, we have consistently seen this pattern in a wide range of networks. Clearly the solution is not simply one of working harder. Rather we have found effective interventions to be based on: (1) re-allocation of information domains and (2) clarification and allocation of decision rights.

### ***Information Domains***

Often people higher in the hierarchy (or more central in these networks) are heavily sought out because they traffic in different informational worlds. If we compare networks where we have seen successful integration, one common denominator is leadership that consistently uses informational requests to point people towards others within the network. Rather than attempt to fight the losing battle of answering everybody's questions, these people systematically sought ways to make other people in the network the "go to" people for various kinds of information. This simple behavior accomplishes two things: (1) it reduces the extent to which a central person is overloaded and so a bottleneck for a group and (2) it draws other people into the center of the network more effectively.

This is a fairly simple activity to undertake. Usually a couple of hours, even over lunch, with a busy executive can help to define these domains and consider ways of allocating ownership of them back out to other people within a group. Typically we will ask an executive in this position to bring their palm pilots or daytimers to review their content role in many meetings over the course of a month or so. In addition we will look back over the same time period of subject lines in e-mails. This quick exercise almost always allows us to identify categories of informational requests that others in the group could own more productively.

## ***Decision Rights***

Understanding information flow is not sufficient to create a more vibrant network, however. A more crippling problem in these distributed groups lies with lack of clarity on decision rights. Again we frequently find many scenarios where people within a network let an opportunity pass because the “cost” of getting a fairly simple decision approved was excessive in their minds. Even worse are scenarios in newly formed groups where people just don’t know to whom to turn for which decision. In their efforts they end up trying to get an audience with some busy executive. Of course this often results in opportunities being passed up (or in very slow execution). Just as importantly, it introduces unnecessary risk into the process as the organization becomes overly reliant on a given decision-maker who is frequently too far removed from the issue to be able to make a well-informed decision.

Again, as outlined above, when we work through informational requests with people we also look for decision categories. Almost universally we find various categories that can be delegated, again with the effect of bringing more people into the center of the network. For example, travel approvals or other more administrative decisions can easily be handled through an administrative role or a policy (e.g., a travel budget for each person). Other less routine decisions can still be effectively distributed to the other experienced people in a network. And finally, some need to remain precisely where they are (or are too unique in nature to be allocated).

### **Myth #6. “I already know what is going on in my network.”**

Finally, we often hear executives claim that they already know the network of the people reporting to them. To this common claim we often ask: “When and how have you had your perception tested?” In fact studies are showing that managers have very different levels of accuracy in understanding the networks around them. By virtue of their position in the hierarchy, managers are frequently far removed from the day-to-day work interactions that generate an organization’s informal structure and so may have a very inaccurate understanding of the actual patterns of relationships. And the potential for inaccurate perceptions is only increased by the transition into a world of virtual work and telecommuting where employees are engaged in work interactions increasingly invisible to superiors. Our own experience suggests that it is often the people who are most adamant that they know their network that are often most incorrect.

Given the importance of informal networks in organizations, we found it surprising that most executives do little to systematically assess and support them. Social network analysis can provide an “x-ray” of the way in which work is or is not occurring in these informal networks and so help managers improve the effectiveness of their organization. Yet while executives will spend vast sums of money for new information systems or better (and faster) financial reporting practices they often are less inclined to get a view of how work is happening within their organization. Usually this is a product of executives not knowing the potential of SNA to map important networks and the interventions that might emerge from this perspective.

## **CONCLUSION**

In today’s knowledge intensive environment where organizations have been significantly de-layered over time, creating healthier informal networks is increasingly a critical job of managers and executives. Collaboration is increasingly important for people to solve increasingly complex and interconnected problems in organizations. Innovation is increasingly central to the generation of wealth. Creating contexts that allow for emergent collaboration so critical to knowledge intensive work is increasingly a foundation to strategic and operational success.

Social network analysis is a way in which previously hidden networks can be made visible to executives within an organization. Interventions targeting relationships in these networks can be a critical first step to improving networks at strategically important junctures. However, just targeting interventions to networks is often not enough as collaboration is often impacted by disruptive organization structure and leadership that disavows their importance. By debunking some of the myths that surround relationships and informal networks we hope to have made it possible to create tangible support for informal collaboration and knowledge sharing within organizations.