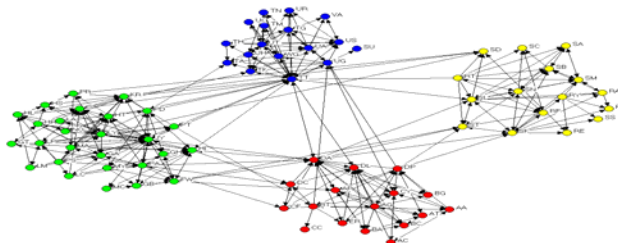


The Ties that Bind: Driving Financial Return through Networks

Rob Cross
University of Virginia

Roger Martin
University of Virginia

Leigh Weiss
McKinsey & Company



The Ties that Bind

In the 1980s, the reengineering movement revealed substantial effectiveness and efficiency gains that could be realized by looking at work and organization design from a process perspective. Today many executives are focused on improving collaboration and coordination within employee networks as a key driver of performance. In an era of globalization, proliferating technology, and the specialization of knowledge-based work, accomplishments of any substance require more than streamlined processes; they require people to work together in ways that aren't fully captured on formal organizational charts or standardized processes and procedures. Important outcomes—revenues, patent approvals, cycle time reduction, client retention—are associated with certain network characteristics. By identifying and replicating productive network dimensions, executives can realize substantial growth and efficiency opportunities deep within their organizations.

This transition from a linear, process-based view of work to a focus on networks of collaboration—and to the innovation, effectiveness, and efficiency gains that can come from that perspective—is not an easy one. In a recent McKinsey survey, 78% of 7,827 executives indicated that their organization's significant growth opportunities required effective coordination across product, functional, and geographic lines. Unfortunately, 79% of those executives also indicated that their organization was “ineffective” at or experienced “difficulty” with cross-boundary collaborations. The payoff could be tremendous for those who solve that problem. Witness the Apple iPod, the electronic music device that has taken the market by storm. Although the iPod received accolades for its elegant design, behind the scenes lies the real innovation of Apple's venture: the network that connects hardware (Mac or PC), software (iTunes), music distributors, and even artists. Or consider IBM's success with its Cell processor. According to CEO Sam Palmisano, the technological breakthrough “would not have happened if we hadn't designed chips for Sony, Toshiba, Microsoft, and Nintendo...at the end of the day, it was through these collaborations that we were able to get through this incredible breakthrough. Now we're applying that breakthrough to all sorts of places, whether it's high-definition television, consumer electronics in the home, high-definition radar systems, or medical imaging.”ⁱ

Although executives quickly acknowledge the importance of collaboration, they too often tend to address this imperative with a technology and a healthy dose of hope. IDC indicates that collaboration tools have become the second highest investment priority among innovation tools (after wireless), with team collaboration applications alone projected to reach \$750 million by 2009. But organizations simply applying technology to increase collaboration frequently fail because employees are often unwilling to

seek input and learn from others, unable to find experts, and reticent to share their own knowledge.ⁱⁱ They also may have managers who hold tightly to ways of thinking that do not promote collaborative behaviors.ⁱⁱⁱ In short, collaboration tools are at best a partial solution and at worst to blame for much of the overload people experience at work today. Strengthening organizational networks isn't about simply increasing interactions across an organization; it's a product of increasing *productive* interactions and reducing unproductive ones. Such a targeted approach can turn networks into a strategic asset. By looking inside networks, to assess where value and cost reside, leaders can improve connectivity *at points that add economic value*. As we will see, a network lens can help drive economic value by

- Defining and replicating network dimensions of high-performing individuals and teams;
- Revealing collaborations central to productivity improvement and modeling anticipated returns from network investments;
- Assessing collaborations that underlie revenue growth and replicating these interactions at value-added points in a network (e.g., cross-selling); and
- Visualizing cost structures relationally to improve managerial decision making through a more accurate understanding of the magnitude and drivers of collaborative costs.

Defining and Replicating Networks of High-Performing Individuals and Teams

Research over the past 20 years has consistently shown that people who make targeted investments in relationships perform better than those who simply build ever larger networks.^{iv} Too often information flow in networks is constrained by formal structure,^v demographic similarity (or homophily),^{vi} and, to some degree, personality.^{vii} However, research shows that high performers don't allow those constraints or others—the lack of time, organizational pressures, and inertia—to drive them into biased or ineffective networks. Instead, for the same investment of time and effort required to maintain a large, happenstance network, high performers intentionally build connections that boost their performance.

Of course, simply giving employees a hearty slap on the back and sending them off to make connections won't accomplish much. Organizations enjoy much greater success by modeling networks of high performers in various job categories so that developmental activities can be focused on building connectivity that will improve specific outcomes, not just create a bigger Rolodex. Our research with a wide range of organizations has produced a generic model of high performers that many are using to drive effective network development into key talent management processes, such as hiring, on-boarding, career planning, and leadership development. This model, shown in Figure 1, is often employed as a starting point and then refined in terms of specific network characteristics that distinguish high performers in given roles for particular organizations.

|Editor's Note: Insert Figure 1 about Here|

Consider a network assessment of the large gift fundraisers in one of the world's largest nonprofits. Here we found that the fundraisers who brought in the most revenue weren't necessarily those who employed conventional fundraising strategies, such as targeting certain kinds of accounts or engaging in various sales management behaviors. Instead, high performers in this organization were distinguished by the kinds of interactions they had (both inside and outside the organization) and the messages they delivered to key donors. For example, they built external networks with both breadth and depth: 30% of their leads came from personal relationships (compared with 18% for the group as a whole), and they had more than twice as many cold call leads as the group average. The high performers also invested time in building friendships with key donors, and these relationships were more likely to produce gifts in every range over \$50,000. And while the high performers' external networking set them apart, what was most surprising was the central role they played in the nonprofit's internal networks. According to conventional wisdom, salespeople only need to be well connected externally; however, we found that if the organization lost the top 5% of performers, income would fall by 23% and overall connections within the group would drop by 25%. Unfortunately, the people most affected would be the next tier of performers: On average, those ranked in the next 10% had significantly more and tighter relationships to the high performers than others in the group.

Relevant network-building factors, once identified, can be embedded into talent management activities. In this nonprofit, tenure turned out to be a substantial factor. Leaders knew that those who stayed around longer developed better networks and performed better. However, the leaders did nothing with this knowledge. As a result, employees who got stuck on the fringes of the network became dissatisfied and quit before they had been around long enough to become productive. To turn that situation around, the organization implemented programs to help low-tenure employees replicate the internal and external networks of high performers more rapidly. The anticipated improvements in retention rates were substantial, but factoring in revenue implications made this a more than worthwhile effort: Simply helping newer employees replicate networks of those with longer tenure increased revenue projections from the top relationships by almost 200%.

In project-based work—typical of professional services, R&D, software, and health care—the most effective way to improve performance is to target team-based networks rather than individuals. For example, we applied network analysis in a global high-tech company across over 200 process

improvement and product development teams. We found that the teams whose projects were completed on time and produced the most innovative solutions tended to share the following characteristics: Collaborations between the right roles at relevant points in a project; connectivity across team members; lack of hierarchy; and diverse ties to relevant parties inside and outside the organization. Once these characteristics had been identified, the company embedded them into training and project management processes. Rather than leave networks to chance, leaders developed specific activities and checkpoints to help teams replicate the high performers' networks. For example, guidelines were established to ensure that specific external networks were formed at the start of a project to help with idea development. Diagnostics also helped team members adjust their networks (both letting go of old ties and building new ones) at appropriate points in the process.

Applying a model of high-performance networks across projects also provides rich, grassroots network-improvement opportunities. For example, consider a successful project team in one of the world's largest construction organizations. Figure 2 shows two views of the team. On top we see the team embedded in the broader office network (the big nodes are the team members and the smaller nodes the people in the rest of the organization with whom they are currently connected); on the bottom are the internal connections of the team itself, a view that reveals both over- and under-connected members.

|Editor's Note: Insert Figure 2 about Here|

Diagnostically, team level network views can help facilitate project planning and team-building sessions. Project managers or team leaders can leverage the network results in an action- and/or account-planning process that helps ensure the team is building appropriate connections with clients, does not have external blind spots, is coordinating well internally, is reaching out appropriately within the organization to leverage specialized expertise, and is not overly reliant on its leader. Personal network profiles give individuals a fact-based perspective on their own networks and, through a benchmarking process, show how their networks compare with others (see Figure 3). These profiles can be used by individuals or their team leaders to help team members develop connections that will both benefit the team and advance their careers. Of course, the real performance impact occurs when these network-building practices are replicated throughout an organization through project management processes and performance evaluation mechanisms (such as post-project evaluations with a peer feedback component) to ensure that relevant connectivity is built at appropriate points.

|Editor's Note: Insert Figure 3 about Here|

As the previous examples reveal, building appropriate individual or team connectivity in organizations can result in substantial performance benefits. The imperative, though, is not the kind of indiscriminate networking so often suggested in self-help books, but rather collaborations that yield economic value. Once strategic network points are targeted, managers can pursue a range of actions to facilitate value-added collaborations—from one-off efforts such as coaching, team building, or large-scale facilitations to systemic changes in human resources processes, collaborative and networking technologies, or organizational redesigns.

Driving Value Creation Relationally in Networks

One opportunity to influence value creation comes from defining and replicating the individual and team network drivers of performance throughout an organization. Another comes from assessing value creation and cost relationally—that is, in the myriad personal interactions that occur throughout a network. Research on networks has tended to focus on the kinds of relationships often characterized as instrumental ties—task-related communication, information flow, workflow, or resources^{viii}—but has ignored the value that is created through these interactions. With a slight shift in perspective, executives can understand how interactions in networks generate economic return—a very different sense of where value is created or cost incurred than they get from traditional budget activities. In particular, this view helps executives understand three crucial areas: network contributions to productivity improvement; collaborations that increase revenue; and costs of collaboration, which are increasing but unrecognized or managed in typical budget processes.

Network Contributions to Productivity Improvement

Where work is routine and projects similar, one way of visualizing value creation relationally is to assess the time people save when they receive information or other resources from their colleagues—resources and experiences they would not have access to without their network. Figure 4a is a network representation of time savings due to the sharing of information and other resources among project managers in a global financial services organization. Those in the center of this network map make substantial contributions that boost their colleagues' productivity; those who are on the fringes or totally removed make only marginal contributions. Quite often leaders are surprised by this kind of view as it reveals employees they did not recognize as being so central to the network or peripheral members whom they thought were more influential.

[Editor's Note: Insert Figure 4a about Here]

In this case, the financial services firm thought it was important to recognize the good citizenship of the central contributors, build more time into their job descriptions for the work they were already performing, and adjust their performance metrics. In other cases, the people who are revealed as central contributors—those who are highly regarded by their peers and not just currying favor with the boss—become more crucial to the organization's succession planning and to considerations about who should assume more prominent roles during a redesign. And, of course, a network analysis reveals the ineffective as well as the effective—information that can turn leaders' assumptions upside down. Especially in technical work, people succeed at first by virtue of their individual accomplishments but may stumble later on when collaborative skills become more important to their professional growth. Revealing those who have become less effective in a network gives leaders specific opportunities to help employees develop certain behaviors and pursue network-building activities.^{ix}

Looking at a network map of oneself and the people around you can result in highly targeted insights; aggregating results by business units, roles, projects, or hierarchical levels can reveal broader insights about where investments in relationships need to be increased or reduced. For example, at this global financial services company, the network of project managers distributed around the world generated savings of 3,383 hours in a single month (converting to roughly \$215,000 at the average loaded compensation). Most of this value was generated in collaborations within business units—only \$67,500 came from interactions across units. As a result, this group saw that it needed to focus more on cross-unit collaboration to realize synergies and minimize replication of effort.

But how much should be invested in people's time, in a technology, or in other efforts (such as redesigning physical space) to promote connectivity? Network analysis allows leaders to weigh the anticipated costs and benefits of such investments. For example, connecting the key brokers in a network and getting them to engage one peripheral person each is an easy and effective way to promote group connectivity. In the financial services organization, such simple interventions were anticipated to yield \$140,000 a year in savings through enhanced collaborations within business units and \$865,000 through cross-unit collaborations—returns that more than outweighed the anticipated investment of a technology and employee time.

Another way of looking at value creation relationally is by measuring cost savings as a product of the transfer of best practices throughout a network. Figure 4b shows the network of best practice transfers

among quality control engineers in one of the world's leading biotech companies. These people played a major role in scaling production in manufacturing facilities as cost effectively as possible. The network analysis helped show that lessons learned and shared generated a substantial but hidden return to the overall organization. At an individual level, the analysis also highlighted several key players who had not been recognized for the value they were creating. At a network level, it revealed where best practices were not being shared and how such collaborative breakdowns resulted in unnecessary costs.

[Editor's Note: Insert Figure 4b about Here]

These kinds of views are extremely helpful in guiding executives to make targeted investments in collaboration that can yield a substantial and measurable payback. For example, consider how a leading multinational petrochemical company assessed the value of collaboration in its exploration and production business. In an industry with highly compensated experts and large investments in fixed assets, avoiding problems—or at least reducing the time it takes to solve them—is critical. To promote sharing of best practices across disciplines such as production, drilling, geology, and geophysics, the company formed more than 20 networks ranging from 50 to several hundred employees. Networks are based on work areas that can benefit from the healthy exchange of best practices. One example is monitoring turbo machines, enormous pieces of equipment that provide pressure and suction for oil extraction. Two to three core team members are identified to lead the network and they, in turn, nominate other well-connected people who can represent multiple business units.

The organization then uses network analysis to assess and improve the health of these groups and to determine how much was being saved through the transfer of best practices. For example, results showed that one network of 60 people contributed \$5 million in savings, a substantial insight for managers. Such results were not just vague estimates of time saved but were supported through stories collected in the network analysis when someone identified an important cost savings. In one scenario, for instance, an oil well had been shut down, and the company was banking on its being out of commission for four days. As the engineers worked on it, one was able to identify an expert who helped him fix it in two days, cutting in half the number of lost production days.

This company focuses on more than knowledge transfer in its networks; it also takes steps to ensure that lessons are shared through daylong training sessions where leaders of the most successful networks explain their lessons learned and help lower-performing networks understand how to improve. There is also a knowledge-sharing team that interviews network leaders to collect best practices and disseminate

them more broadly. Overall, three key success factors support these communities: (1) Networks are carefully formed around specific topic areas focused on the way work is actually accomplished; (2) network members receive the tools, leadership, and training to be successful—they do not just have a collaborative tool foisted on them; and (3) the company continually tracks and measures success and identifies opportunities for improvement, which helps when it is time to fund various initiatives.

Revealing Collaborations that Generate Revenue

In addition to helping managers improve efficiency, a relational view of value creation can measure collaborations that generate revenue. These views often uncover “hidden” people who do much more for revenues than individually-focused sales metrics might suggest. For example, a partner in a global technology consulting firm applied a network view to determine how best to manage client relationships and cross-selling among a group of approximately 80 partners and senior managers. It turned out that the top ten people in the group supported collaborations yielding 60% of its revenue, with the top five alone accounting for 38%. Although some of these people were known by management because of their individual accomplishments, many were under the radar screen, supporting the group in ways that had not been recognized. It was particularly interesting in this case to compare the people who were the top revenue enablers (i.e., those that the network analysis revealed supported myriad sales) with those who promoted productivity and time savings. Results again showed that a small set of people improved the productivity of others in this network: The top ten people in the network returned 48% of the total value generated through time savings, and the top five accounted for 32% of the total. But these top value creators were not the same as those whose collaborations generated the highest revenues. A number of important players in this network facilitated the effectiveness and productivity of others, yet they were not the high-revenue producers frequently heralded in professional services.

This was eye-opening to the organization’s leaders. The network analysis revealed two categories of partners critical to the practice, yet not recognized by the heavily individualistic performance management system. The firm, which had been struggling with the idea of dual career paths, recognized in the network results the need to modify the partner role and performance management process to account for contributions from those whose expertise or experience was critical to multiple sales and from those who improved the effectiveness and efficiency of client delivery. Strategically, the firm needed to bring greater depth and breadth of expertise to key accounts to distinguish itself in the market—something that could be accomplished only by better leveraging expertise and value creation from a network as opposed to an individual contributor business model.

Another example of how a network perspective can pinpoint how and where revenues are generated can be found in a major technology firm in the midst of a large-scale change to become more focused on customers and responsive to the market. Here a network perspective allowed the top leadership team to assess where collaboration had successfully generated revenue (see Figure 5a) and to track the effect on revenue of the change initiatives. Network views can be extremely granular: The leader, for instance, was able to break collaborations out by bands of revenue to see if the highest-value collaborations (those yielding more than \$2 million in revenues) involved different people than the lowest-value collaborations (\$250,000). This level of detail can help managers reframe the roles of key players to give them more time and accountability for enabling specific kinds of sales. For simplicity, in Figure 5a we have summarized the results to show all revenue-producing collaborations.

Some of the most central people were surprises to the leadership team—many of these employees were hidden assets who played a critical but invisible role in successful sales efforts. Leadership’s challenge was to find ways to replicate these key players’ behaviors throughout the network. And what was clear in this pursuit was that these employees’ success resulted from more than just individual expertise. All of the people who were central in this group had strong interpersonal skills: To a person they were likeable, responsive to requests, accommodating, flexible, and good at collaborating. They also took constructive criticism well, voiced enthusiasm about the quality of the team’s end product, and never let conflicting views degrade their relationships or the team’s energy. As this leadership team plotted success with its new focus, it became clear that the talent model and concurrent incentive schemes needed to target some new behaviors and expertise. In this case, the network view enabled leaders to focus on questions such as:

- What do the most collaborative employees do that invisibly enable sales? How can we replicate their behaviors throughout the network?
- Who are the valuable experts on the edge of this network? What can be done to help draw them (as appropriate) into sales-oriented collaborations?
- How do we create targeted collaborations that will give us superior capabilities in assembling expertise, penetrating accounts, and increasing revenue from cross-selling?
- What prevents people from supporting colleagues in sales efforts (time, skill, awareness of colleague’s expertise, personality, incentives)?
- How can collaboration be most effectively embedded into role definitions (such as giving central people more time to help others, engaging these people in account planning, leveraging their expertise throughout the network)?

[Editor’s Note: Insert Exhibit 5a about Here]

Of course, we can also take a different slice of the network to identify where people were aware of colleagues' expertise but did not have a vision for ways to collaborate with them in sales efforts. Figure 5b shows this map of relationships. This view revealed that a number of key players were not thinking creatively about how leveraging their colleagues' skills could help differentiate themselves and the organization in client offerings. This kind of blind spot is a very real but invisible barrier to cross-selling and account penetration, which we have seen in many professional services settings as well as in broader account management in myriad organizations. In this technology firm, the leaders' challenge was to help a set of five to six high performers—who thought they knew one another's skills—understand how collaborating and integrating expertise could give them a distinct advantage with clients.

[Editor's Note: Insert Exhibit 5b about Here]

Visualizing the Costs of Collaboration

Effective collaboration can create tremendous value, but collaboration is not free, and failed collaborations can be extremely costly. A network perspective can help reduce those costs. Specifically, measuring time spent preparing for interactions and interacting with colleagues helps isolate inefficiencies accruing from poor job design, ineffective allocation of decision rights, or social aspects of work, such as leaders who inspire fear and thereby install enormous inefficiencies into a network. Pinpointing various network breakdowns enables leaders to determine whether collaborative time is focused on value-added, customer-facing activities or on internal, administrative demands. In the construction company described earlier, a network analysis assessed collaborative time spent by those involved in construction projects (engineers, superintendents, and project managers) and those in support roles (administrative support, purchasing, technology services, and safety). In the most successful office assessed, 68% of collaborative time was customer facing, compared with only 50% in the less successful office. A number of network views then helped isolate which inefficiencies in the less-effective offices were resulting from hierarchy, organizational design, and project management processes. This organization had used some process-oriented approaches, such as reengineering and activity-based costing, to help people perform various tasks more efficiently. The network lens uncovered a different and substantial layer of inefficiencies in the way people were collaborating.

In most cases, collaborative inefficiencies result from outdated role definitions, process steps, or organizational design. For example, consider a network analysis we conducted in the information technology organization of a leading utility. The CIO wanted a better understanding of how interaction

among certain roles affected the IT department’s decisions and quality of their work. To get such a perspective on the department, we assessed interaction time in the network and then converted time to cost using a loaded hourly rate. The results are found in Table 1, which is read from row to column and shows *average monthly* costs of collaboration *per employee* within a given role as well as between roles throughout the group.

[Editor’s Note: Insert Table 1 about here]

This analysis revealed two views of resource allocation (in terms of employee time) that no traditional budgeting or cost allocation processes could provide. First, it turned out that the cost of collaboration was much higher in some roles than others. Sometimes these costs were justified: Infrastructure architects, for instance, define the technical direction and standards for the entire department. Given the importance of standardization and consistency among architectures, over half of their collaborative costs came from interactions with other infrastructure architects. But in other cases there were clearly opportunities to reduce collaboration costs and redefine roles. For example, the network results showed that data architects and project managers spent almost half of their time in interactions with IT coworkers; yet these very real collaborative demands were not factored into hiring, staffing, or evaluation metrics. As a result of this finding, managers re-examined job functions and role descriptions and reconsidered internal cost allocations used to establish transfer pricing on IT projects.

Second, this view of collaborative effort helped determine where sufficient cross-role collaboration existed to capitalize on opportunities and where it needed to be built up to avoid substantial costs. The CIO labeled one common pattern where collaboration yielded better results and decreased costs by helping IT professionals “solve the right problem.” For example, the application architects had recently experienced unacceptably low response times for a new application and were proposing a larger production server, which would cost \$200,000, to solve the problem. Before they went ahead with the purchase, however, an infrastructure architect determined that the slow response time was caused by a single query transaction that was initiating intensive database activity. The right solution in this case was simply to change the database commands for the query transaction—a solution that would not have been discovered without effective collaboration between the infrastructure and application architects.

The CIO also identified a pattern of costly collaborative failures. She highlighted a breakdown in collaboration between infrastructure architects and application developers in a recent deployment of a network-intensive application. The development team had tested the application across a local area

network but experienced substantial problems when extending the application to satellite offices with much lower network bandwidth. If the infrastructure architects had been involved early and often, they would have foreseen this problem in a simulation with the application across the planned user community. But at this late date, the solutions were either to increase bandwidth or to re-architect the application to reduce the network-intensiveness of transactions. The former solution can be prohibitively expensive for a far-flung network; the latter involved additional development, software licenses, and deployment costs—expenses that would have been avoided by early involvement of an infrastructure architect and simulation of application performance across the planned user community.

To avoid such scenarios in the future, the CIO used Table 1 to assess cross-role interaction costs and to determine where efficiencies could be realized or—as in the above—where further investment of time across roles was warranted. Rather than simply allocating all costs onto a given role or unit, this network view helps a leader see and assign a cost to friction points that often exist across functional lines, hierarchical levels, distance, or steps in a process flow.^x For example, compare the average costs of collaboration for the two roles with the largest number of employees—application architects and infrastructure architects. Application architects design and maintain major applications that support critical business processes or functions. They typically specialize in one or a small number of applications. Infrastructure architects help manage system-wide resources and are likely to be involved with a wide range of IT issues. Using a traditional budgeting process, management would likely consider the cost of both roles as similar types of standalone costs of the IT function. The network view highlights the important collaboration component of the costs of each role and gives management the opportunity to think of the costs and benefits of each role in conjunction with the likely impacts on other roles within IT or the entire organization.

A network perspective can also be applied to assess the collaborative effectiveness of employees within a given role. For example, in this CIO's group we assessed both time spent in interactions and value created by them. In this case value was assessed in terms of the value colleagues ascribed to information they received from others in the network. As shown in Figure 6, plotting these two relationships – time spent and information value—provides insight into those who are more effective in their role and provide greater value for the time they consume. For simplicity we are showing the same roles discussed previously—application architects and infrastructure architects—with roles plotted through scores standardized to account for differences in the network scales. Although it shows that most employees fall within a fairly tight group, there were clearly outliers and opportunities for improvement (those that

consumed a lot of time and provided relatively little value) that were highly useful to the leaders of these groups.

[Editor's Note: Insert Figure 6 about here]

Conclusion

Because collaboration is an increasingly critical feature of organizational life and a major driver of value, revenue, and cost, leaders need to be able to see it and map it. They need to be able to peel back the layers of a network to identify the most promising opportunities for improving it. Instead of promoting overall connectivity—and thereby overwhelming employees and creating bottlenecks—leaders can use the network perspective to make targeted investments in collaborative efforts with clear economic returns. They can replicate the network characteristics that deliver value, assess costs in an entirely new way, and develop more accurate understandings of people's roles. Indeed, after examining their organizations through a network lens, leaders may end up with very different ideas about how value is created and their own role in helping the groups of people around them build an effective and successful organization.

Figure 1
Networks of High-Performing Employees

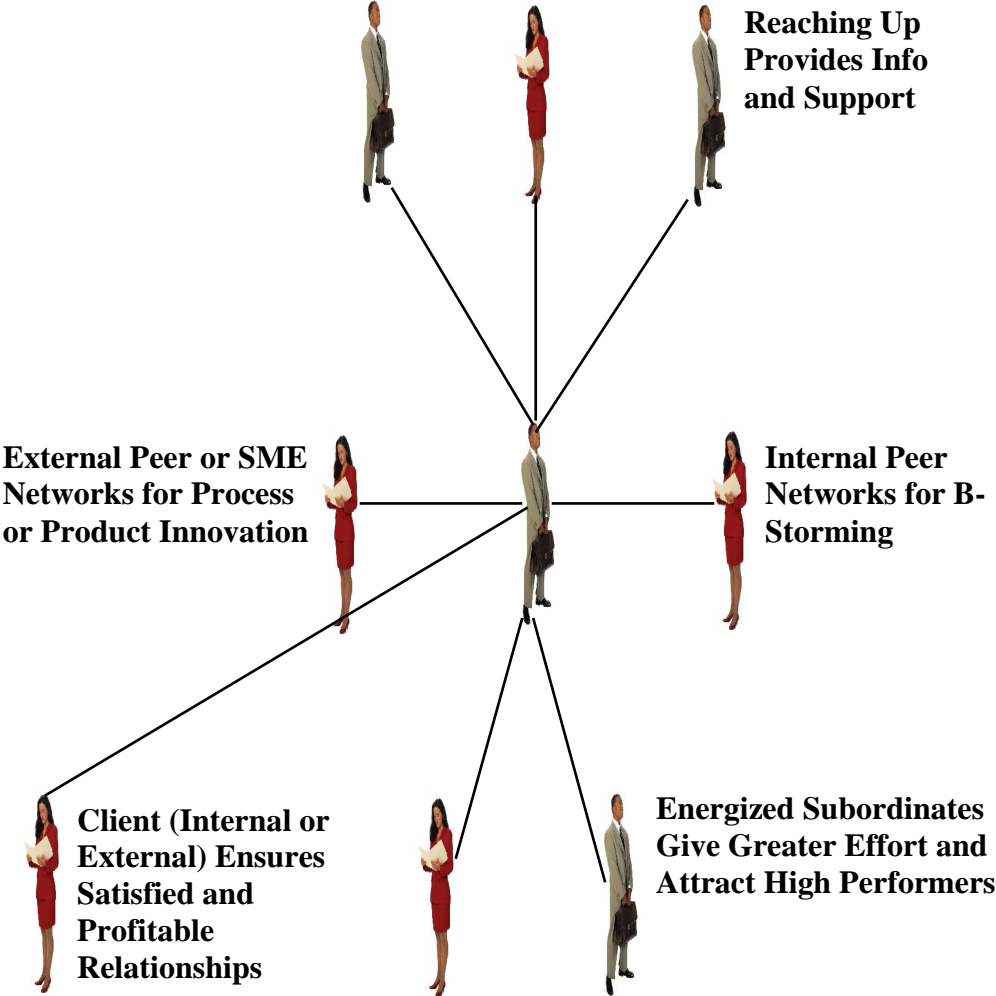


Figure 2
Assessing Team-Level Connectivity

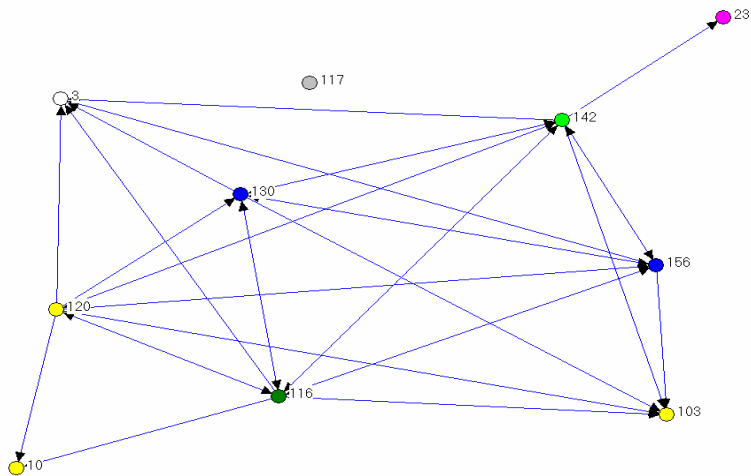
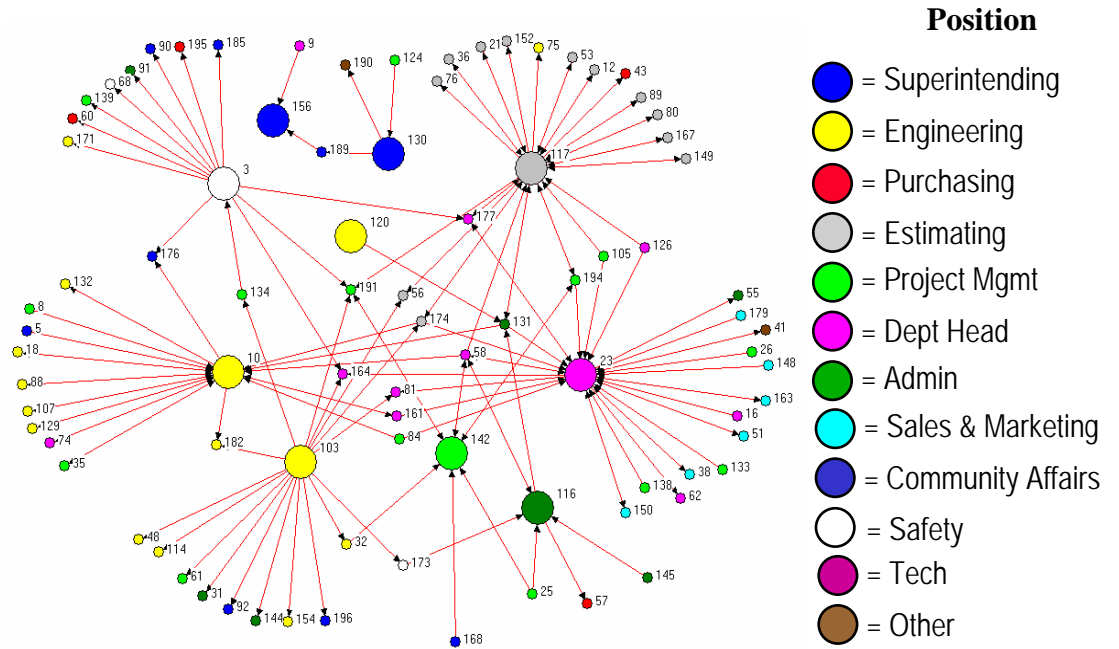
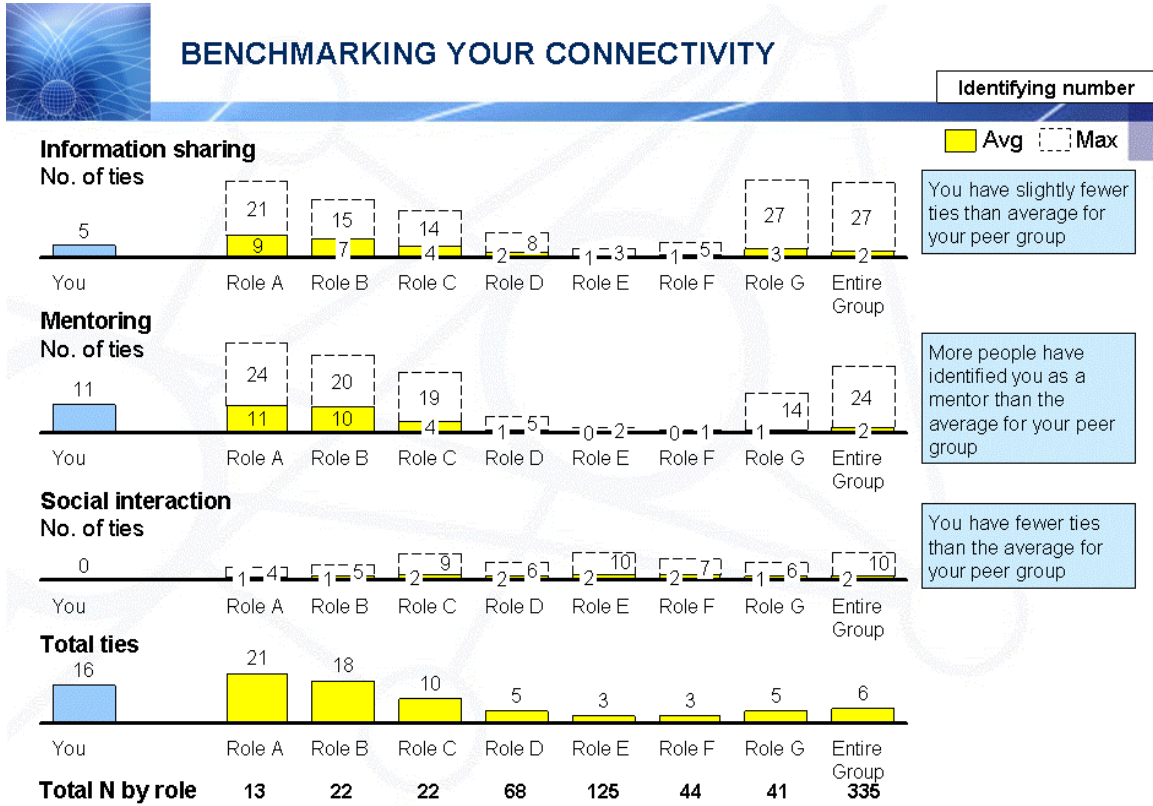


Figure 3
Benchmarking Personal Connectivity

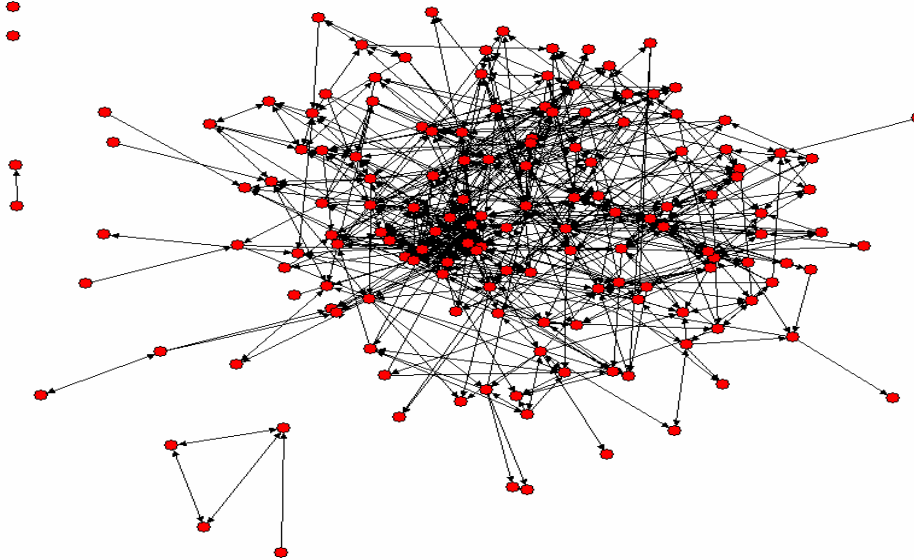


Source: McKinsey

0

Figure 4a
Translating Time-Saving Interactions into Economic Return

(Please provide an estimate below for the typical time saved per month as a result of information, advice, or other resources received from each person.)



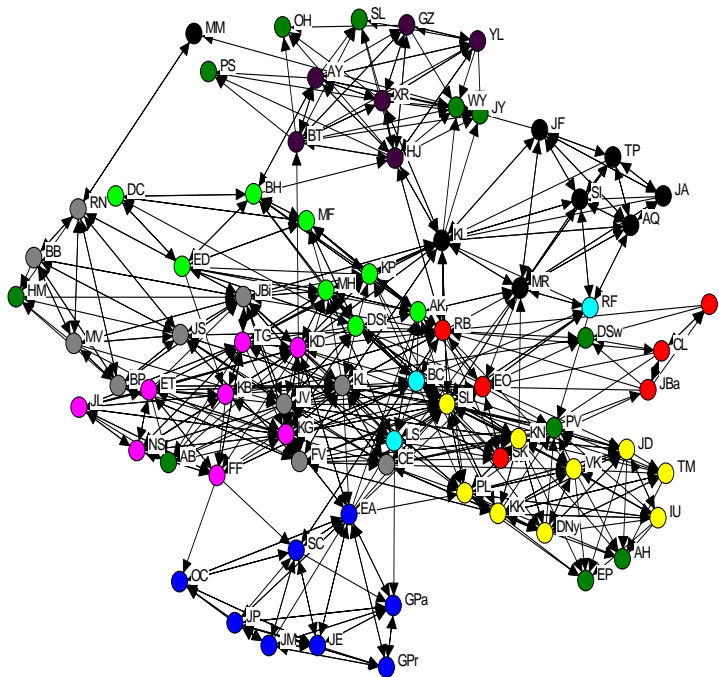
Potential Time & \$ saved per month
 Allie 105 hours (\$6,699)
 Alice 92 hours (\$5,870)
 Bruce 91 hours (\$5,806)
 Ellie 42 hours (\$2,680)
 Cam 38 hours (\$2,424)

14 People create no value per their peers and happen to be in key functional areas

Figure 4b

Translating Best Practice Transfer across Manufacturing Sites in a Global Organization

(Please provide an estimate below for the dollar value of time savings or innovations resulting from your interactions with the following people over the past year.)



Value Top 8
 King \$1,040,000
 Grasso \$1,035,000
 Harper \$855,000
 Crabb \$850,000
 Vickers \$840,000
 Beach \$780,000
 Deaver \$775,000
 Lyle \$715,000

Value Bottom 8
 Ford \$65,000
 Lambert \$65,000
 Abbott \$60,000
 Martin \$60,000
 Unter \$55,000
 Everett \$20,000
 Mann \$15,000
 Zahm \$5,000

Figure 5a
Collaborations Critical to Revenue Generation

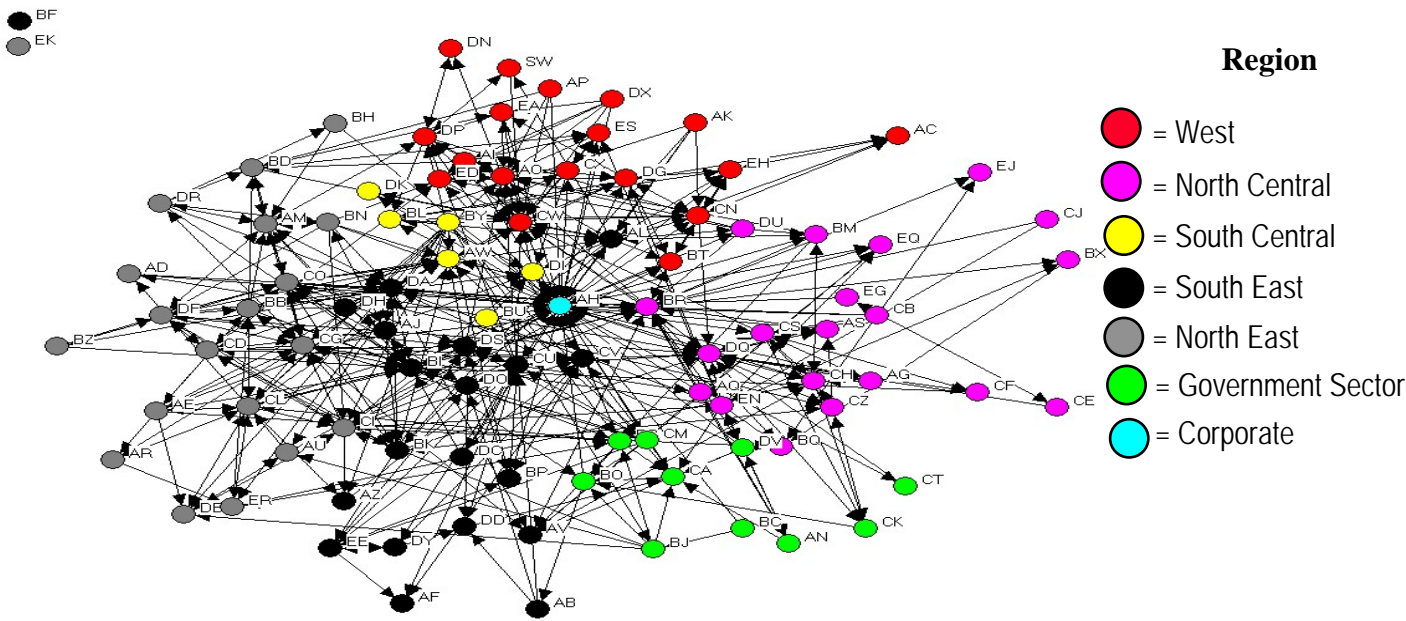


Figure 5b
People Aware of Others' Expertise but See No Opportunity to Collaborate

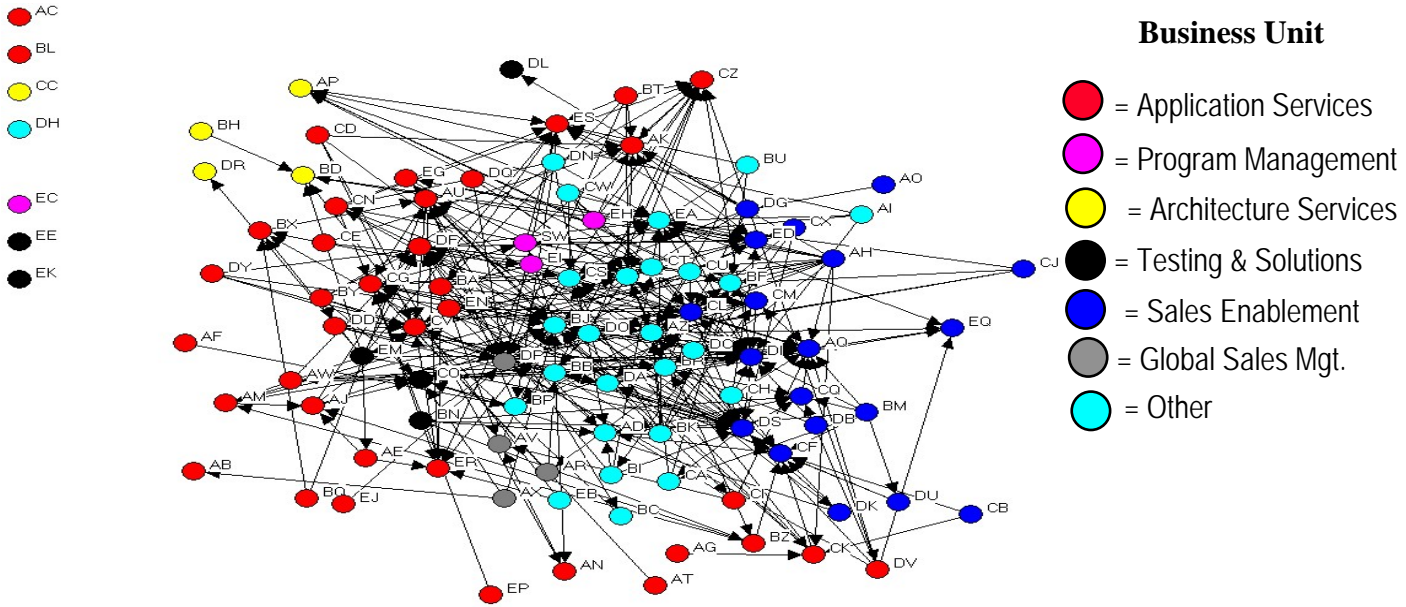


Table 1 – Density table showing loaded labor cost of time spent preparing for interactions or interacting with others.

Rows denote average loaded labor cost for all employees in each role, at \$150 per hour. For example, for the 17 application architects, the average loaded labor cost per employee for interaction time with those in the same role is \$2,126 - denoted “internal,” and the average application labor costs for time spent with those in other roles range from \$476 to \$1,597, with a total cost per employee for interaction time with “external” roles of \$5,638.

Role title	Number of employees	Average cost for interaction time, per employee per month									Total Monthly interaction labor costs	
		Application Architect	Business Unit Architect	Data Architect	Infra-structure Architect	Systems Analyst	Project Manager	Other	Overall	Internal		External
Application Architect	17	\$2,126	\$1,121	\$715	\$1,597	\$476	\$626	\$1,103	\$7,765	\$2,126	\$5,638	\$132,000
Business Unit Architect	5	3,750	2,460	1,110	1,560	30	210	660	\$9,780	\$2,460	\$7,320	\$48,900
Data Architect	6	3,600	950	2,800	2,225	225	975	650	\$11,425	\$2,800	\$8,625	\$68,550
Infrastructure Architect	16	1,406	656	375	5,588	56	1,013	1,069	\$10,163	\$5,588	\$4,575	\$162,600
Systems Analyst	2	1,125	0	150	975	0	1,500	1,275	\$5,025	0	\$5,025	\$10,050
Project Manager	5	1,680	210	1,050	3,180	1,680	1,470	3,450	\$12,720	\$1,470	\$11,250	\$63,600
Other	7	1,714	471	193	1,843	364	1,971	2,057	\$8,614	\$2,057	\$6,557	\$60,300

ⁱ Palmisano, S. Innovation: The view from the top. *BusinessWeek*, April 3, 2006.

ⁱⁱ Hansen, M. & Nohria, N. (2004). How to build collaborative advantage. *Sloan Management Review* 46(1): 22-30.

ⁱⁱⁱ Goold, M. & Campbell, A. (1998). *Desperately Seeking Synergy*. Sept-Oct. pp. 131-143.

^{iv} For some of the more classic references to this research, please see Brass, D. (1984). Being in the right place: A structural analysis of individual influence in an organization. *Administrative Science Quarterly*, 29: 518-539. Burt, R. (1992). *Structural Holes*. Cambridge, MA: Harvard University Press. Burt, R. (2000). The network structure of social capital. In B. Staw & R. Sutton (Eds.), *Research in Organizational Behavior*. pp. 345-423. New York: JAI Press. Gargiulo, M., & Benassi, M. (2000). Trapped in your own net? Network cohesion, structural holes, and the adaptation of social capital. *Organization Science*, 11(2): 183-196. Mehra, A., Kilduff, M., & Brass, D. (2001). The social networks of high and low-self monitors: Implications for workplace performance. *Administrative Science Quarterly*, 46: 121-146. Podolny, J. & Baron, J. (1997). Resources and relationships: Social networks and mobility in the workplace. *American Sociological Review*, 62: 673-693.

^v Lincoln, J. (1982). Intra- (and inter-) Organizational networks. *Research in the Sociology of Organizations*, 1: 1-38; Brass, D. (1984). Being in the right place: A structural analysis of individual influence in an organization, *Administrative Science Quarterly*, 29: 518-539; Stevenson, W. & Gilly M. (1991). Information processing and problem solving: The migration of problems through formal positions and network ties. *Academy of Management Journal*, 34: 918-928; Cross, R. & Cummings, J. (2004). "Tie and network correlates of individual performance in knowledge intensive work. *Academy of Management Journal*.

^{vi} McPherson, M., Smith-Lovin, L., & Cook, J. M. (2001). Birds of a feather: homophily in social networks. *Annual Review of Sociology*, 27: 415-444.

^{vii} Kilduff, M. (1992). The friendship network as a decision-making resource: dispositional moderators of social influences on organizational choice. *Journal of Personality and Social Psychology*, 62:168-180; Mehra, A., Kilduff, M., and Brass, D. (2001). The social networks of high and low-self monitors: Implications for workplace performance. *Administrative Science Quarterly*, 46: 121-146. Casciaro, T., & Sousa Lobo, M. (2005). Competent jerks, lovable fools and the formation of social networks. *Harvard Business Review*.

^{viii} Allen, T. (1977). *Managing the Flow of Technology*. Cambridge, MA: MIT Press; Baker, W. (2000). *Achieving Success through Social Capital*. San Francisco: Jossey-Bass; Baum, J. A. C. (Ed.) (2002). *Companion to Organizations*. Malden, MA: Blackwell; Burt, R. (1992). *Structural Holes*. Cambridge, MA: Harvard University Press; Hansen, M. T. (1999). The search-transfer problem: The role of weak ties in sharing knowledge across organization subunits. *Administrative Science Quarterly*, 44, 82-111. B. (1997). Social structure and competition in inter-firm networks: The paradox of embeddedness. *Administrative Science Quarterly*, 42, 35-67.

^{ix} One important thing to remember is that there are many reasons why people are peripheral in a network. The knee-jerk reaction of executives is often to equate being peripheral with not being effective, but quite often this could not be further from the truth. People tend to be peripheral for one of four reasons: 1) Subject matter experts or scientists often need to be on the periphery to maintain their depth and perspective; 2) people managing work/life balance issues also need to be protected, as forcing them into the fray might lead to their departure; 3) newcomers are a high-value target for managers to help staff and engage in coaching and on-boarding processes that get them connected more rapidly; and 4) performance issues or cultural misfits can represent developmental opportunities – often they are just doing one or two things wrong but have never had the benefit of this kind of feedback.

^x Johnson, B., Manyika, J., & Yee, L. (2005). The next revolution in interactions. *McKinsey Quarterly*, 4: 20-33. Beardsley, S., Johnson, B., & Manyika, J. (2006). Competitive advantage from better interactions. *McKinsey Quarterly* 2: 52-63.