

HR TECHNOLOGY

The Value of Social Network Analysis

January 2014, Vol. 59 No. 1

Conducting a social network analysis can help companies to reveal their unexpected influencers.

by Bill Roberts

When a division of Cigna Corp. wanted to break down its geographic barriers and become a more global organization, its leaders hoped to informally enlist influential employees to assist with change management. But first they had to identify which employees were most connected with others and who did the most to forge relationships across locations. So leaders conducted a social network analysis.

After surveying 200 division managers in 10 countries, they analyzed the results with social network software that handles large amounts of data and illustrates the findings visually. The analysis identified a dozen people as the main "connecting" and "bridging" employees. The big surprise: Half of them were not people who the division leaders thought would be in the group.

Typically, if you ask leaders who their company's influencers are, 75 percent of the names they provide will be incorrect, says Karen Kocher, Cigna's chief learning officer, who worked on the analysis. "We had half the people identified correctly, which is pretty good," she says. "There are hidden gems in every organization, at every level. That's why you need to use scientific survey methodology to identify them."

Discovering who does the most to connect, communicate and collaborate with fellow employees is a seminal outcome of any social network analysis. Also known as organizational network analysis, it is a data-driven methodology supported by software to quantify and illustrate the number and strength of personal connections. Most analyses are based on a survey of employees or managers, but they can also be based on e-mail traffic; increasingly, both methods are used together.

Today's computer networks, including the Internet and wireless networks, create human-connection grids that are larger than ever. This may be why social network analysis, which has existed for decades, is becoming a more popular way to understand organizations and change.

A New Perspective

Organizational hierarchies are likely to exist as long as organizations do. But companies also have informal networks, which flatten hierarchical structures and diminish the relevance of an official pecking order. The majority of work is so complex that no one person has all the knowledge, experience or skills to handle it. Formally or informally, people collaborate to get work done.

"Network analysis shows what happens in the white space on the organization chart," says Valdis Krebs, founder and chief scientist at Orgnet LLC, a vendor of network analysis software and services based in Cleveland. Krebs, a former HR professional in the automotive and defense industries who has spent more than two decades developing software and methodology for network analysis, adds, "HR is very good with org charts, but the boxes and the lines connecting them aren't always how things get done."

Greg Pryor, vice president for leadership and talent matters at Juniper Networks Inc., a Silicon Valley-based developer of software and hardware for network equipment, agrees. In the 21st century, he says, the business *is* the network, and earlier ideas about chain of command and linear work processes are inadequate.

"Our org charts are interesting ways to organize people and work," says Pryor, who has used social network analysis since 2010. "But the organizational network approach is a more realistic way to look at how our work gets done and how our business actually operates."

Based on surveys of its member companies' employees, conducted in late 2012, the Corporate Executive Board (CEB), a member-based corporate advisory service, found that, compared with three years earlier:

- 67 percent of employees have more interactions with more co-workers.
- 50 percent say they are more dependent on others to get their job done.
- 57 percent report an increase in the number of colleagues they work with in other geographic areas.

"We've gone from a siloed workforce to a connected workforce to an interdependent workforce," says Brian Kropp, CEB's managing director. "However, the organizational structures haven't aligned with this yet."

Social, or organizational, networks form the hubs where work is accomplished. Who creates the networks? Who remains on the periphery? Those questions can be answered by acquiring a network perspective through social network analysis and software, which creates a picture of who does what and how work flows. Then organizations can better support, develop, recognize, and retain those people and their informal networks.

"Networks remain invisible to or misunderstood by many people in management and leadership roles," Kristen Cullen, a member of the research faculty at the Center for Creative Leadership, wrote in a recent paper titled "Developing Network Perspective." "They are missing a powerful

perspective to help them operate effectively in complex, changing times because networks are more responsive and flexible than hierarchical channels."

Rob Cross, an associate professor in the management department of the McIntire School of Commerce at the University of Virginia, has conducted research on social network analysis and is a leading expert in its commercial use. "Social network analysis is a vehicle that lets us take an X-ray of groups you care about to see where communications are taking place that create value or decline value," says Cross, a consultant and investor in Activate Networks Inc., a social network analysis company based in Newton, Mass. The analysis also reveals where the siloes are, he adds.

Many Uses

When Juniper first conducted a network analysis, company leaders wanted to know which employees were involved in serving one of its major customers. Based on a survey of 300 employees named by various managers, the analysis identified more than 900 employees in 12 locations—representing 14 functions and eight levels of management—who were involved in serving the customer, according to Chris Ernst, the company's vice president for leadership and organizational effectiveness. Five percent of those employees accounted for more than one-fifth of all the connections.

"Knowing who those 5 percent were, and thinking about them in this context, drove different ways for us to recognize their importance to enabling information flow and collaboration so critical to innovation," Ernst says.

Ernst and Pryor say social network analysis has led them to rethink traditional approaches to talent management processes, including recruiting, learning, performance management and compensation. Both executives expect that what they are learning will change these processes in time.

Social network analysis has already affected the Cigna division's approach to retention. After identifying its hidden gems of "connectors" and "bridgers," Cigna asked respondents what impact there would be on the organization if those people left. The answers "gave us insight into a retention strategy," says Leah Alibozek, learning director at Cigna University. "We kept those people and rewarded them for the informal role they played.

"Leaders tend to lock into their favorites and notice who they want to notice. They miss others who have a big impact," she continues. "Some employees who are top connectors are not effective at managing up and fall off the radar."

CEB's Kropp says the network perspective is changing the definition of a high-performing employee. "The best employees today are not only good at individual tasks but also at driving the network performance."

Social network analysis is also being applied in areas other than talent management, according to interviews with consultants and HR professionals. Some examples:

- **Mergers and acquisitions.** Cigna uses social network analysis to understand acquired companies' informal networks and identify their go-to people. It then uses the information to support integration efforts.
- **Workspace configuration.** A research and development division in a large company analyzed its organizational network to determine the interdependencies among employees, to identify informal leaders and to discover where connections should be happening but were not. Employees within the division worked in the same building but on different floors. As a result of the analysis, the division's workspace was reconfigured so that people who needed to work together closely were on the same floor. Follow-up analyses have shown that person-to-person connectivity has greatly improved.
- **Onboarding.** Some of Krebs' clients assign mentors to new hires based on the mentor's network. And if a new hire is replacing someone, clients give the newcomer a map of the departing employee's informal network and make introductions.
- **Staffing decisions.** As it opened offices around the country, one fast-growing company couldn't hire quickly enough. By periodically conducting a social network analysis, the organization identified hires made within the previous 12 months who had built the most extensive informal networks and were thereby deemed candidates for promotion to assistant manager positions.
- **Brain drain concerns.** Some companies use social network analysis to identify which soon-to- retire Baby Boomers have the most network connections, then set priorities for knowledge retention and succession planning. In succession planning, for example, if two employees have similar resumes but one has a more robust network, that employee might be the better replacement.

Conducting an Analysis

Krebs breaks social network analysis into three broad steps:

- Select employees, departments and outside vendors to assess.
- Gather data necessary to evaluate current collaboration patterns; focus the inquiry on both reasons for and frequency of interactions.

Generate detailed quantitative and visual summaries of the informal network. These summaries provide an assessment of the quality and number of linkages among people and spotlight those who are the most active "hubs." Bear in mind that the methodology for a social network differs from that of an employee engagement survey. Even with a modest response rate, an engagement survey can be useful. But it is difficult to get a complete picture from a social network survey unless a sizable number of the target group participates. Krebs says he often sees a 100 percent response rate when management is properly involved and routinely gets 85 percent.

The survey must explain to employees why they are being assessed, how the results will be used

and why their participation matters. Krebs and others say online survey tools will not generate the response rates needed; having everyone fill out the survey at a staff meeting is a better approach.

The questions asked depend on who is being surveyed and the purpose of the analysis. When Juniper wanted to find out who was involved in serving its major customer, Pryor says, the company asked employees questions such as "Who do you go to for information, to solve problems, to get career advice, etc.?"

The software used to assess survey results can also analyze time stamps, links, and subject fields on e-mails and other passive digital data. "You can mine calendar systems to see who is meeting, and you can analyze phone logs, see who uses research papers and other digital artifacts," Cross says. He adds that employers increasingly opt for both approaches.

"You can gauge the quality of the relationship better through a survey, and you can gauge the volume of it better with e-mail," Cross explains. "Using both reinforces that the survey data is valid. In the future, we'll see more use of more-passive data to first identify the audience to survey."

Given recent disclosures about the National Security Agency's monitoring of e-mails and phone calls, Cross and others say it is not likely that analysis of the content of e-mails or other digital artifacts will become routine, because of concerns over privacy and loss of employees' trust.

Power Points

Indeed, privacy and trust concerns may be reasons social network analysis is not more widely used, says Carol Rozwell, a vice president and analyst at Gartner Inc., a technology research and advisory firm based in Stamford, Conn. In a 2008 research brief she wrote on the topic, she says she expected that there would not be a huge uptick in adoption "because the level of trust in organizations is generally so low that the environment is not right to do this type of deep introspective look at relationships." Rozwell plans to take another look in 2014.

Another barrier to such analysis may be that, despite the proliferation of tools, there are no pre-eminent vendors, Rozwell says. Many options are free but designed for academic research and thus are not user-friendly for businesses, she adds. A handful of vendors, including Activate and Orgnet, focus on business customers, she says.

Rozwell thinks business leaders are missing out on vital information about their work processes if they don't conduct a social network analysis. "I don't understand why any leader wouldn't want to know what the key influencers are doing, saying and who they are. You'd think leadership would want to tap into the influencers in the network."

Bill Roberts is technology contributing editor for HR Magazine and is based in Silicon Valley in California.