

DEVELOPING THE PRODUCTIVITY OF A DYNAMIC WORKFORCE: THE IMPACT OF INFORMAL KNOWLEDGE TRANSFER

Given the prevalence of career changes, job-hopping, and alternative work arrangements, how do you get a dynamic workforce up to speed? With all of the interest in the management of knowledge, what is the main knowledge transfer mechanism to use to enhance contract-worker and employee productivity? Today, more organizations are using a nontraditional workforce. These organizations are utilizing contract workers as well as employees as resources to provide services and manufacture products. This article focuses on enabling this dynamic workforce to be productive by addressing the organizational socialization "policy," the formal knowledge transfer, and the informal knowledge transfer related to helping individuals perform at work. This article especially focuses on informal knowledge transfer via social networks, because it is the type of knowledge transfer that is the least understood by companies due to its being difficult to measure and improve. By using a case study of a Fortune 100 company, the article reveals what types of knowledge are important to transfer, the sources of the knowledge, and the mechanism used to transfer this knowledge. It also demonstrates how informal knowledge transfer impacts performance and provides an indication of the effectiveness of organizational socialization. © 2002 Wiley Periodicals, Inc.

Ryan K. Lahti, Eric D. Darr, and Valdis E. Krebs

A two-year study by the Bureau of Labor Statistics found that 10.6 million of the individuals employed in alternative work arrangements in the United States were contract workers—that is, independent contractors or individuals who are employed by a company that provides them as a resource to other organizations through a contractual agreement. Within the manufacturing industry, 51.4 percent of individuals employed in alternative work arrangements were contract workers. Already a large part of the current workforce,

contract workers will represent a major portion of the future workforce for various reasons. These include the need for organizations to reduce direct labor costs, such as employee benefits; fill in organizational gaps in expertise; control the number of employees; and provide the flexibility to handle market demands.

The use of such a dynamic workforce comes with its own set of challenges—the most salient being turnover. Turnover poses the problem of not only losing valued human assets but also of get-

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Ryan K. Lahti, Ph.D. currently consults in an organization development capacity for Gap Inc. In his consulting career with Gap Inc., Ernst & Young LLP, and the Hay Group, he has focused on such issues as knowledge management, competency assessment and development, leadership development, and organizational design with companies that range from the entrepreneurial level to the *Fortune* 500 level. **Eric D. Darr** is the vice president of KnowledgePlanet where he builds and expands KnowledgePlanet's professional service offerings. Previously he headed Cap Gemini, Ernst & Young's knowledge management consulting practice in the United States. **Valdis E. Krebs** leads orgnet.com, a management consulting firm. Since 1988, he has applied organizational network analysis to improve knowledge work within and between *Fortune* 500 companies and supported consulting firms, such as Ernst & Young LLP.

ting replacements for these individuals up to speed in a timely manner. When contract workers leave an organization, they take with them their knowledge, both explicit and tacit, which affects company performance. Therefore, replacements for these individuals, as well as any new individuals to an organization, need to expediently acquire the crucial knowledge that will help to increase the overall competence of the workforce. Specifically, these individuals need to acquire three types of knowledge: job task knowledge, role knowledge, and organizational norms knowledge.

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Job task knowledge relates to what is needed to perform specific aspects of a job. For example, a human resources representative needs an understanding of equal employment opportunity guidelines to fairly and efficiently select new employees.

Role knowledge relates to what is expected of the individual in a particular position. For example, an individual may be expected to serve as an informal team leader.

Organizational norms knowledge relates to the behaviors and attitudes that the employing company values. For example, the individuals at a given organization are expected to work in a collaborative and respectful manner, to build consensus, and to demonstrate integrity.

Of these three types of knowledge, the first two are believed to be most crucial in helping newcomers become socialized into an organization, because they represent what is usually required for learning a new position. If individuals—whether contract workers or staff employees—cannot perform the essential functions of their position, then they are not likely to need organizational norms knowledge, because they will probably lose their jobs because of poor performance. All three types of knowledge can be passed on formally, through instructor-led and computer-based training, and informally, through relationships with peers, colleagues, mentors, and supervisors—that is, a social network. Informal

knowledge transfer is critically important for sound organizational performance, and research has even shown that informal knowledge transfer is more helpful than formal training. Yet, it is the type of knowledge transfer that companies understand the least.

A STUDY IN ORGANIZATIONAL SOCIALIZATION

Organizations typically follow an informal organizational socialization policy consisting of a combination of formal knowledge transfer (for example, instructor-led training and computer-based training) and informal knowledge transfer via social networks to get new contract workers as well as employees up to speed. To evaluate the organizational socialization of these workers, a study was conducted comparing their experiences to those of a baseline population composed of “rookies,” or newly hired employees who have little or no prior work experience, and “experienced hires,” or individuals who have a significant amount of prior work experience.

One hundred and sixty-six individuals employed by a *Fortune 100* manufacturer of office equipment voluntarily participated in the study. These individuals were both contract workers and employees who worked at one of the company's call centers in the United States. The call center operated on a 24-hour/seven-day work cycle. Consequently, the employees and contract workers worked on one of three different shifts during the cycle. The management-level subjects were customer service managers; the nonmanagement-level subjects were customer service representatives. Organizational tenure ranged from one month to 33 years, with an average of 6.3 years. Years of education completed ranged from 12 to 18, with an average of 13.89 years. Total work experience ranged from one month to 45 years, with an average of 13.75 years. Total contract work experience ranged from one month to 9.33 years, with an average of nine months.

Analyzing social networks involves a different type of data than the attribute data (organizational commitment, job satisfaction, etc.) typically encountered in work contexts, along with psychology and organizational behavior research. Social network analysis involves evaluating relational

data, or what is often referred to as social capital. This information is not owned by an individual or entity like financial capital (cash) or human capital (competencies). Social capital is owned by participants in a network of relationships (personal contacts) and represents the potential resources resulting from it.

To enhance the validity of this study, multiple measures and methods were used. The measures included reliable and valid measures of knowledge transfer (including social network measures), intention to leave, and job satisfaction. The data for these measures were collected through survey questionnaires. The company provided multiple measures of employee and contract worker performance, including the:

- Percentage of time available to take incoming calls (AVI)
- Percentage of time spent wrapping up a call (WRAP)
- Percentage of solutions provided by the customer service representative using a computerized solution database (SLTN)
- Percentage of customers who were very satisfied (CSTMR)
- Number of calls taken per hour (CALLS)

Additionally, a stratified sample of 31 employees and contract workers from the three shifts who completed the surveys were selected for one-hour follow-up interviews. The follow-up interviews were used to obtain more in-depth information related to the social network, as well as to clarify any inconsistent information resulting from the survey. The study addressed five critical questions.

Question 1: What type of knowledge is most often transferred? Respondents noted that job task knowledge was the type of knowledge most often transferred (see **Exhibit 1**). The size of the mean, represented by the height of the corresponding bar in the graph, suggests that job task knowledge is transferred almost on a weekly basis on average. These findings are congruent with prior research that showed employees who are new to an organization sought job task knowledge by way of a social network and documentation more than other types of knowledge.

Although the mean for role knowledge is greater than the mean for organizational norms knowledge, it is not significantly larger than organizational norms knowledge. This result indicates that role knowledge is transferred along with organizational norms knowledge, but role knowledge is not transferred substantially more often

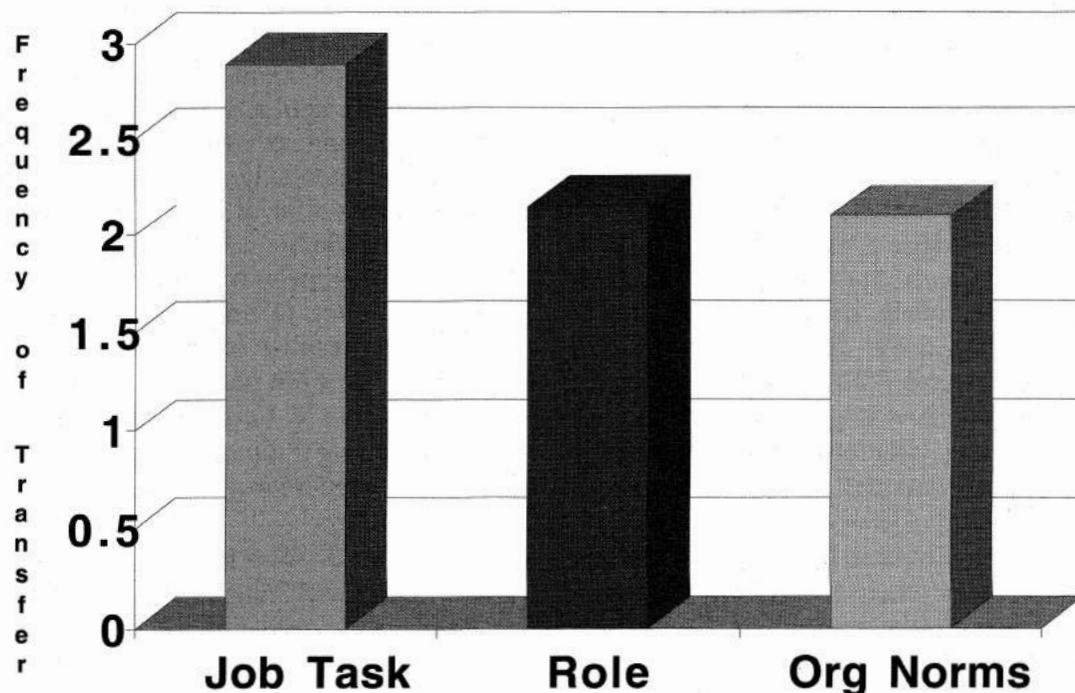


Exhibit 1. Types of Knowledge Transferred

than organizational norms knowledge. The lack of a significant difference between role and organizational norms knowledge could be that the respondents do not perceive a clear distinction between the two types of knowledge. This reasoning is feasible, because the results indicate that role and organizational norms knowledge are highly correlated.

The type of work performed by the survey participants entails taking telephone calls from customers, answering customers' questions regarding the company's products (office equipment) that the customers own, and then taking the appropriate action to provide a solution for the customers. Interviews with the sample of 31 individuals indicated that the most important knowledge needed for their work is oriented to job task rather than role or organizational norms. The individuals who were interviewed indicated that the specific type of knowledge that is the most important for their work is knowledge of the office equipment products and the computer equipment they use to provide solutions related to the products (58 percent of the interviewees). This knowledge is more related to job task knowledge than role or organizational norms knowledge.

... job task knowledge is transferred more often from coworkers than from managers ...

Besides determining the type of knowledge most often transferred, the survey also assessed the source of this knowledge. The findings show that job task knowledge is transferred more often from coworkers than from managers (see **Exhibit 2**), and the results of the interviews with the 31 individuals mirrored this finding. For job task knowledge, 68 percent of the interviewees reported that they obtained knowledge from coworkers or coworkers combined with formal knowledge transfer, and 3 percent reported that they obtained it from a combination of coworkers and managers.

The logical explanation for this finding is that coworkers are more likely to perform similar, if not identical, tasks as the newcomers. Conversely, managers are less likely to perform the same or similar tasks as newcomers. Furthermore, business and industry changes, such as flatter organi-

zational structures and downsizings, which can increase spans of control, make it difficult for managers to regularly observe all their direct reports to obtain an accurate base of job task knowledge to pass on to newcomers.

Question 2: Does organizational norms knowledge contribute to performance over and above job task knowledge, role knowledge, and worker classification? On four of the five measures of individual performance, results showed that knowledge of organizational norms does not make a significant contribution to performance beyond that of job task knowledge, role knowledge, and worker classification. Specifically, organizational norms knowledge does not significantly improve performance as measured by AVI, WRAP, SLTN, and CSTMR.

These findings indicate that organizational norms knowledge is not a substantial component in rookies', contract workers', and experienced hires' AVI, WRAP, SLTN, and CSTMR, but organizational norms knowledge is a substantial component of CALLS. This result suggests that knowledge of the behaviors and attitudes that the company values includes taking a substantial number of calls per hour. Organizational norms knowledge may not affect AVI, SLTN, CSTMR, and WRAP, because these measures may be more job task- and role-oriented. Consequently, these performance measures do not indicate any sort of relationship with organizational norms knowledge.

Given the contention that job task and role knowledge represent the bare minimum or the cornerstone knowledge types for initial entry into a new organization, it makes sense that job task and role knowledge contribute to individual performance. Moreover, it is important to transfer job task knowledge to enable the transfer of role knowledge, because individuals need to understand what their job involves to better understand what they should be doing and how well they should be doing it. Therefore, job task knowledge is a likely precursor of the effective transfer of role knowledge.

Question 3: How is knowledge transferred? **Exhibits 3, 4 and 5** display the transfer of organizational norms, role, and job task knowledge between experienced hires (EH) and contract workers (CW), the two key worker groups that should be communicating to assure sound informal knowl-

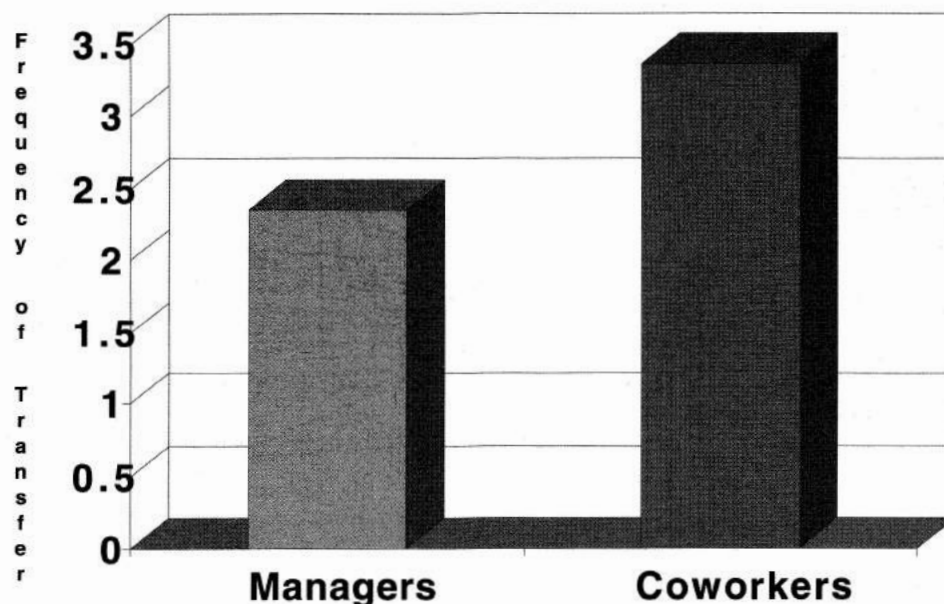


Exhibit 2. Sources of Job Task Knowledge

edge transfer. The numbered points in the diagrams represent individuals, and the links between the points represent informal knowledge transfer involving given individuals in the network. Overall, the diagrams show that, of the three types of knowledge, job task knowledge is consistently transferred most often (note the greater number of links in Exhibit 5 versus Exhibits 3 and 4), which supports the findings from Question 1. And, results show that knowledge transfer is occurring among coworkers at the manager and nonmanager levels (especially experienced hires), which also supports the findings from Question 1.

Question 4: Is a larger social network associated with better individual performance? Given the finding that job task knowledge is the type of knowledge most often transferred, and given the relationship that worker classification, job task knowledge, and role knowledge have with performance, there is a need for efficient methods of knowledge transfer. The ultimate evaluation of the impact of the knowledge transfer method is how it relates to individual performance.

The five measures of performance that the company tracks (AVI, SLTN, CSTMR, WRAP, and CALLS) were compared to network size. Network size is defined as the number of direct connections people have in the network (known as "degree centrality" in social network terminol-

ogy). A higher value on AVI, SLTN, CSTMR, and CALLS and a lower value on WRAP indicate better performance. The results show significant correlations on four of the five performance measures. Specifically, SLTN is positively correlated with network size. This finding indicates that the percentage of solutions provided by the customer service representatives using a computerized database increases with the size of the network. This finding is logical, because the customer service representatives communicate or interact with each other on how to provide solutions using the computerized database. If the customer service representatives are unsure of how to navigate the database or find potential solutions, they consult with each other. This finding is further supported by the organizational structure, because the customer service representatives function in an open workstation environment in self-managed work teams that facilitate communication and collaboration.

In addition to the significant correlation with SLTN, network size is also correlated with AVI, CALLS, and WRAP. Specifically, AVI and CALLS are negatively correlated with degree centrality. These findings indicate that a larger social network for customer service representatives (that is, more direct connections with others) is associated with a smaller percentage of time available

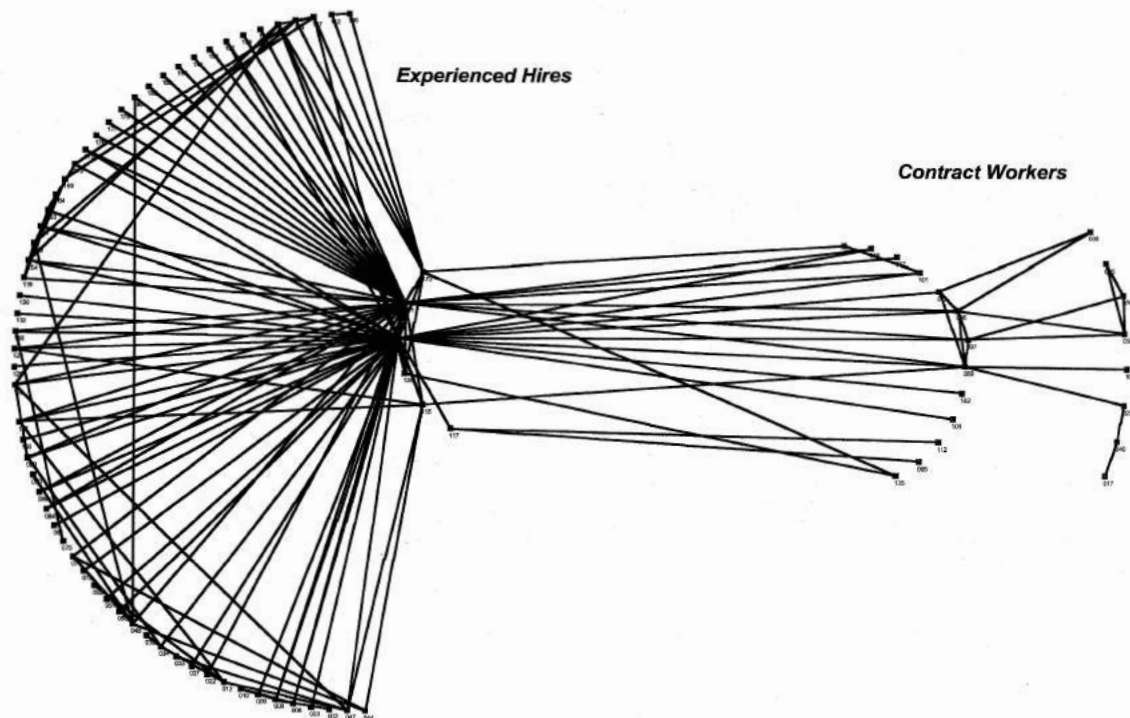


Exhibit 3. Organizational Norms Network for EHs and CWs

for incoming calls and fewer calls taken per hour. Additionally, WRAP is positively correlated with degree centrality. This finding indicates that a larger social network is associated with a larger percentage of time spent wrapping up calls. These findings suggest that a large network is associated with lower performance.

The findings regarding SLTN, AVI, CALL, and WRAP suggest that network size definitely affects individual performance in both positive and negative ways. The findings suggest that the communication and collaboration that take place need to be handled efficiently to avoid unnecessary time spent on issues that could negatively affect per-

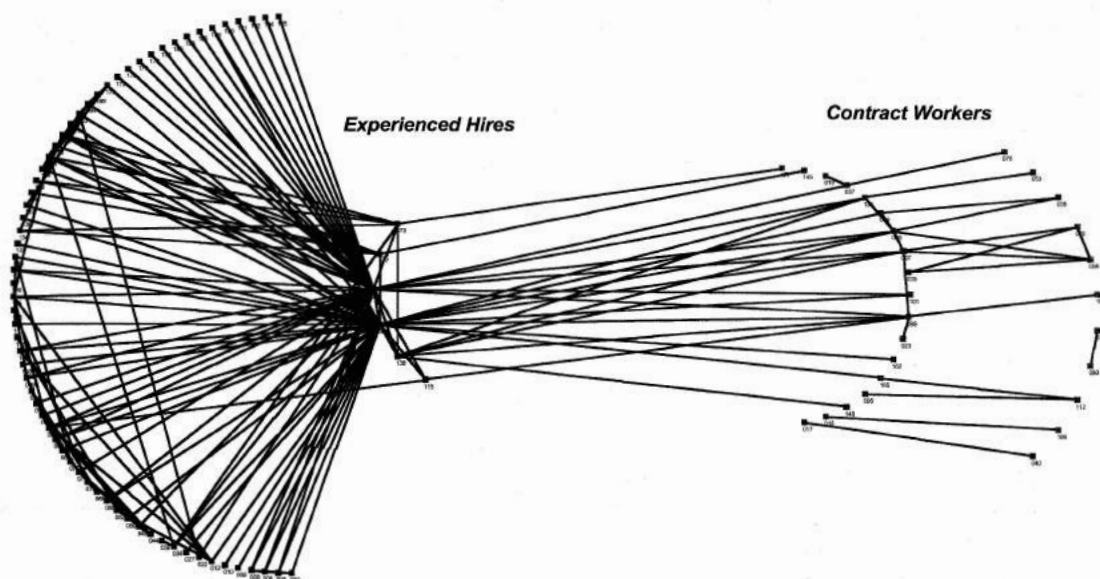


Exhibit 4. Role Network for EHs and CWs

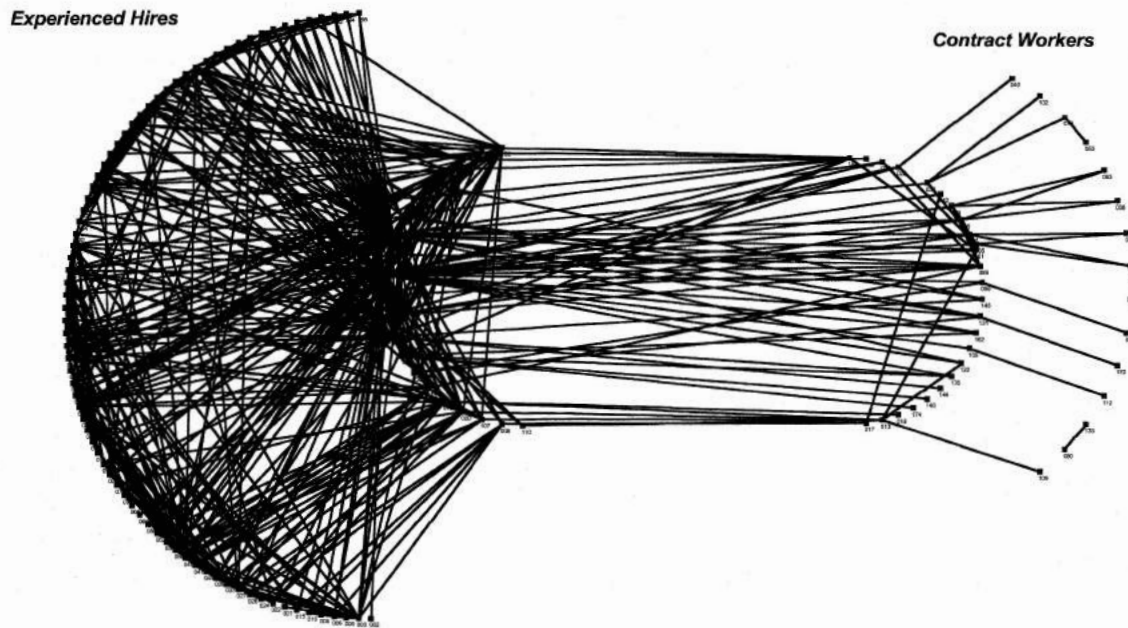


Exhibit 5. Job Task Network for EHs and CWs

formance—for example, excessive non-work-related conversations and inconsistent and inaccurate knowledge being transferred. Consequently, informal knowledge transfer needs to be appropriately guided to ensure an understanding of individual performance measures and to discourage excessive chitchat.

The interview data especially points out the need for customer service representatives to better understand the performance measures. When interviewees were asked about the performance measures, none was able to identify all five of them; however, 77 percent identified SLTN, 52 percent identified CALLS, 29 percent identified WRAP, 26 percent identified AVI, and 26 percent identified CSTMR.

These results further support the link between network size and performance. The performance measure identified by most interviewees, SLTN, is also the one that is positively correlated with network size. Therefore, a larger network is associated with a higher percentage of solutions using the computer database. This significant relationship between network size and SLTN is due, in large part, to the customer service representatives being aware of the SLTN measure. Consequently, customer service representatives are more likely to be aware of SLTN and perform better if they have a larger network.

Question 5: Are contract workers, rookies, and experienced hires equally satisfied with their jobs? Companies should want organizational socialization (especially via informal knowledge transfer) to be effective, because it ultimately links to performance. In addressing organizational socialization, it is important to consider how satisfied contract workers and employees are with their work, as well as their intention to leave. It is important to consider these issues because they may indicate potential turnover stemming from inadequate organizational socialization, which results in a loss of knowledge and often a decrease in company performance. Dissatisfaction with a job is a precursor to intention to leave, and intention to leave has been shown to be a key predictor of actual turnover. Question 5 addresses work satisfaction by asking whether all categories of workers are equal in terms of job satisfaction. Overall results from rookies, contract workers, and experienced hires suggest that job satisfaction was not a major issue. The mean rating for job satisfaction was midway between “neither satisfied nor dissatisfied” and “satisfied,” which shows that respondents overall were approaching “satisfied” on the job satisfaction scale.

A closer analysis of job satisfaction by worker classification reveals that rookies were more sat-

isfied than experienced hires. This is probably because the rookies had recently gone from contract worker status to employee status and, consequently, were newly entitled to all employee benefits. (Because of a hiring freeze, the company had been using the contract worker relationship as a proxy for a probationary period to determine whether an offer of employment should be made at the end of the contract.)

By using informal knowledge transfer with contract workers, the company would be less likely to exceed IRS supervision and training limits.

The overall results for rookies, contract workers, and experienced hires show that intention to leave was not a major issue. The mean was not even at the midpoint on the scale (where a higher value indicates greater intention to leave), which suggests that respondents were not really thinking about leaving. A closer analysis of intention to leave by worker classification shows that contract workers had the greatest intention to leave, which was significantly larger than rookies' intention to leave. The result for contract workers is likely because of the short-term nature of the business relationship that contract workers have with the company. Even though the potential exists for contract workers to be hired as employees at the end of their contracts, they know that they are more of a transient working population than employees. The contract workers probably feel less integrated into and committed to the organization. Therefore, they have a greater intention to leave the organization, which coincides with the higher turnover rate for contract workers compared to rookies and experienced hires.

IMPLICATIONS FOR BUSINESS AND INDUSTRY

The findings of this study underscore the need for organizations to realize that new employees, especially contract workers, must obtain job task knowledge as expediently and effectively as possible, because it is the cornerstone of their ability to perform their work.

Furthermore, these findings point to the most appropriate source for transferring job task knowledge. Given the fact that coworkers are the most important source for this knowledge, a company should provide the mechanisms to facilitate informal knowledge transfer for newcomers. For example, a company could implement a buddy system or a coaching or mentoring program that would enhance interaction among newcomers to the organization and their corresponding coworkers. These types of programs enable newcomers to more quickly identify the key knowledge sources within the organization. Furthermore, a slight modification to a current program might make it even more effective for knowledge transfer. If a company is currently using a coaching program that involves a manager as a coach, the company might consider using a peer coaching approach, because the study results indicate that coworkers are the sources of knowledge most often used.

Additionally, a buddy system, peer coaching, or mentoring program may be less of a red flag to the Internal Revenue Service (IRS). The IRS has set limits regarding the amount of formal training and supervision a company can provide to contract workers. If a company exceeds those limits, the contract workers can be deemed employees for IRS purposes and potentially be entitled to employee benefits. By using informal knowledge transfer with contract workers, the company would be less likely to exceed IRS supervision and training limits.

A key to the success of these types of programs is to ensure that the buddy, peer coach, or mentor has accurate knowledge of job task, role, and organizational norms so that newcomers receive information that is in line with what the individuals need to know to be successful. Companies should also be sure that the individuals responsible for knowledge transfer are able to efficiently transfer the appropriate knowledge. These companies might also consider further enhancing this interaction by revising organizational systems, such as reward and performance management, which can affect knowledge transfer. The refinement of these systems could help encourage or support this interaction on an ongoing basis.

Because contract workers and rookies are new to the organization and may not have a chance to develop much of a social network on their own, the company should have mechanisms in place that can facilitate the development of the social network. This would provide additional support for the use of a buddy, coaching, or mentoring system or other forms of collaborative on-the-job training. All these methods provide the opportunity for ongoing personal interaction that helps to create cooperative connections and enhances organizational socialization. Additionally, if it is difficult for a company to broadly utilize informal knowledge transfer, it should consider using a targeted mix of knowledge transfer methods for job task and role knowledge. For example, formal knowledge transfer methods, such as instructor-led training and computer-based training, can be used to pass on preliminary job task knowledge, and informal knowledge transfer via the social network of employees and contract workers can be used to transfer more of the detailed job task and role knowledge. Besides using computer-based training with informal knowledge transfer to transfer job task and role knowledge, organizations can also use technology to facilitate the on-

going use and development of the network once it has been formed. Having initially established a trusting rapport through face-to-face interaction, network members could then use such technology as groupware to help maintain and enhance the social network, as well as transfer knowledge.

To ensure that organizational socialization is efficient, companies need to evaluate this socialization from an informal knowledge transfer standpoint, as well as from the point of view of the individuals who are experiencing it. Such an evaluation should address the types of knowledge being transferred (for example, job task, role, and organizational norms), how it is being transferred (for example, from managers and/or coworkers, from just one person or multiple people, etc.), and whether the result of the socialization affects indicators of turnover (for example, job satisfaction and intention to leave) and finally turnover.

Ultimately, organizations are only as successful as the resources that drive them. These resources include knowledge, as well as the employees and contract workers who transfer that knowledge. Therefore, effective knowledge transfer via organizational socialization is not a business perquisite. It is a business requirement. ■

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