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# **A RELATIONAL VIEW EXPLAINING THE PROCESS OF KNOWLEDGE SEEKING**

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## **ABSTRACT**

Employees of engineering and construction organization are often exposed with problems they do not know how to solve and turn to other employees to find solutions. The process of knowledge seeking, or identifying and choosing a provider to ask for knowledge, represents the initial process in coordinating knowledge. While the process is essential for knowledge coordination, it has been understudied. We address this gap by identifying relational factors which influence individual knowledge seeking choices. Using qualitative data with thirty employees at an infrastructure engineering organization, we identified that relationships between the seeker and provider matter during the process of knowledge seeking. Specifically, we identified that the quality of relationships is based on knowledge provider's engagement, shared and sustained work experiences, psychological safety and reciprocation. These factors emphasize the importance of relationships and the social-practice of knowledge seeking.

**KEYWORDS:** expertise, knowledge management, relations

## **INTRODUCTION**

Large engineering organizations have a wealth of expertise resulting from thousands of employees working on diverse projects in different parts of the organization. In theory, this wealth of expertise allows individuals to find people who can provide them with the knowledge they need. When exposed with problems and questions, individuals will seek knowledge by trying to locate individuals who have the right expertise in the organization (Agarwal et al. 2011). In practice, the knowledge seeking process can be time consuming and it has been shown that individuals spend the largest portion of their daily work searching for information and knowledge they do not know (King et al. 1994). As a result, inefficiencies associated with the knowledge seeking process lead

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to losses worth \$2.5 million yearly in medium size firms (Fieldman and Sherman 2001). Because the knowledge seeking process is time consuming and costly, it is important to understand how people locate expertise, attending specifically to relational factors that affect the knowledge seeking process. Thus, the goal of this research is to describe the importance of meaningful work relationships for knowledge seeking and provide empirical evidence describing the underlying practice of these relationships.

Project-based organizations represent a unique environment to study the process of knowledge seeking. Individuals in these organizations work on different project teams in which they develop professional and personal relationships with other project employees. Because of the changing nature of projects, employees will move from one project team to another, developing and maintaining connections with individuals from current and previous projects. This may serve as an advantage in the process of knowledge seeking, as individuals create additional networks that expand across the organization and which have valuable intellectual capacity. As such, when individuals have a problem and need to seek knowledge, they have diverse of individuals to choose from (Marlow et al. 2010). Previous research has mentioned the importance of macro level factors, such as organizational structures (e.g. geography, business units), to create knowledge sharing and seeking connections (Wanberg et al. 2015). At a micro level, individual motivations were also found to be important (Javernick-Will 2012; Osterloh and Frey 2000). However, the role of social relationships in the process of knowledge seeking connections has been largely neglected, with a few notable exceptions (Borgatti and Cross 2003; Cross and Sproull 2004). This research addresses this gap by asking: *What relational factors affect whether a knowledge seeker will approach a potential provider for information and expertise?* We identified the practice of knowledge seeking based upon interviews with thirty individuals at a large infrastructure engineering organization. Understanding how individuals seek knowledge contributes to the visibility of the seeking process which furthers the understanding regarding the (in) efficiencies in the process of knowledge seeking.

## **THE IMPORTANCE OF KNOWLEDGE SEEKING**

For the past decade, construction and engineering literature has been interested in the importance of knowledge coordination in construction organizations. Knowledge seeking is an important step of work coordination and represents the process of locating and identifying

individuals who have the perceived knowledge and skills necessary for the task or problem at hand. Whenever individuals know how to easily identify other experts in the organization, it leads to better project outcomes such as less errors and project completion time (Hollingshead and Brandon 2003). At the individual level, individuals who seek expertise from individuals outside of their subgroup are likely to have increased individual performance (Poleacovschi and Javernick-Will 2016), mainly because they are accessing non-redundant knowledge. Considering that finding experts in the organization is important, practitioners are increasingly implementing knowledge management strategies that could facilitate locating experts from different parts of the organization (Carrillo and Chinowsky 2006). Many of the existing studies identified technological solutions for knowledge seeking; however many of these solutions fail in practice (Akhavan et al. 2012). An explanation of failures of these technologies includes negligence of individual perspectives on the process of knowledge seeking. As previously shown, individuals have social and personal motivations when interacting with others in the organization (Javernick-Will 2012), which can be difficult to enact as a technological solution.

This research expands on previous literature which has identified three primary factors as essential in the process of knowledge seeking: accessibility, problem type, and quality (Hertzum 2014). Accessibility represents one's ability to reach for experts with minimal effort. For instance, familiarity with the knowledge provider was found to be important in the process of seeking (Borgatti and Cross 2003). Whenever an individual was familiar with one's knowledge and skills they were likely to be more confident in the knowledge provider's expertise. Often, familiarity with expertise was dependent on physical proximity, which allowed for increased interactions between employees, facilitating 'who knows what' (Poleacovschi and Javernick-Will 2016). Problem type determines whether individuals turn to people instead of written sources (e.g. online websites). The more complex the problem, the more likely individuals will go to people, where both tacit and explicit knowledge exchange can occur, instead of written sources (Byström 2002). Finally, knowledge seekers will value source quality based on one's expertise level. Previous research has shown that expertise is assessed in the organization not only based on one's experience with different problems, but also their reputation in the organization (Poleacovschi and Javernick-Will 2015). While quality and accessibility of knowledge may be important factors in the process of knowledge seeking, this literature does not explain when, and how, accessibility and quality is achieved. Moreover, explaining the process of knowledge seeking lacks a social-practice

perspective (Brown and Duguid 2001) that considers relationships as essential in the way employees collaborate in the organization.

## **A RELATIONAL THEORY OF KNOWLEDGE SEEKING**

A relational theory of knowledge seeking conceptualizes organizations as social environments in which coordination of knowledge allows employees to achieve desired work outcomes (Grant 1996). Understanding how people connect to seek expertise and advice on daily tasks becomes important in this process. Organizational structures, including the division of labor, are created by organizational and project managers who have a vision of how work needs to be done. The practice of how work actually gets done is often differs from these formal plans (Bresnen 2009; Gluch 2009). Regardless, previous research has suggested that both macro and micro level forces help explain the formation of connections that exchange knowledge. At the macro level, organizational boundaries, such as geography and business units, have been identified to be important for forming connections (Wanberg et al. 2015). At the micro level, individual attributes of the knowledge provider and seeker have also proved to be important. Generational characteristics (Sanaei et al 2014) and culture (Wanberg et al. 2015) influence the existence of knowledge sharing connections, with previous scholars indicating that homophily, or socially similar characteristics, influence who individuals will turn to for advice. As such, it is expected that the quality of relationships matter in the process of seeking and we propose describing these relationships.

Previous theory on communities of practice discusses the importance of social interactions between individuals for building close relationships (Brown and Duguid 1991). Frequent interactions allows the individuals to build commitment (Coleman 1988) and trust, thus increasing the individual's perceptions that they will have positive future interactions based on past ones (Tsai and Ghoshal 1998). Frequent interactions have been theorized to create stronger relations (e.g. strong ties) based on "the amount of time, the emotional intensity, the intimacy (mutual confiding), and reciprocal services that characterize the tie" (Granovetter, 1973: 1361). Strong ties are important for the transfer of knowledge that is instrumental for work outcomes (Hansen 1999; Levin and Cross 2004). In project-based organizations, frequency of interactions is important as individuals do not work within one permanent project team. Those who have the opportunity to interact for an extended period of time are likely to develop close relationships (Coleman 1988).

As a result, it is expected that these relationships require less effort and time during knowledge seeking, and the knowledge providers are perceived to be more accessible by the knowledge seeker. Nevertheless, despite the wide understanding that these relationships are essential for knowledge connections, and particularly for the transfer of tacit knowledge (Hansen 1999), it is not known what factors affect the formation of these relationships. While Granovetter (1973) indicates the importance of frequency of interactions for knowledge seeking and sharing, we lack a sociocultural approach to understanding the process of knowledge seeking. Such an account emphasizes the importance of everyday practices and acknowledges that whenever individuals have a problem, they seek for knowledge based on how they see themselves in the world, their (and others) perceptions of the knowledge provider and their perceived relationship with the knowledge provider.

## **METHODS**

To identify the relational factors that influence whether a knowledge seeker will approach a possible knowledge provider for information, we conducted a case study with a large infrastructure engineering organization. We chose this approach to build theory explaining the process of knowledge seeking (Yin 2003). The theory in this paper is informed by a social-practice approach (Brown and Duguid 2001) which acknowledges that respondents are influenced by their cultural and social preferences when building, maintaining and evaluating their relationships with knowledge providers.

### ***Research Context***

We conducted thirty interviews in the case study organization. The organization has offices in many countries of the world and includes approximately 7,000 employees. The company specializes in water treatment projects but also offers diverse services such as preconstruction, construction and construction management services. The organization provides services, such as environmental restoration and construction, providing budgeting and scheduling systems for the management of complex construction projects, project management control systems, and expertise on regulatory permitting.

### ***Data Collection and Analysis***

To study the process of knowledge seeking, we interviewed thirty employees from the organization. Interviews were semi-structured and lasted for 30 minutes. Questions included: “*What do you do when you don’t have the information and knowledge necessary to complete your work?*” and “*Where do you go as a first step, as a second step?*” “*Why did you go to this person/place?*” In order to identify whether demographic categories played a role in the knowledge seeking process, interviewees were chosen based on a diverse pool of respondents in terms of location (UK, US, Canada, Netherlands, Australia and Belgium), specialization (engineers, scientists, managers, and architects) and gender (female and male). We transcribed the interviews and proceeded to code the data inductively. Inductive analysis relies on emerging patterns within the data (codes) which are further used to develop theory (Miles et al. 2013). The coding process was facilitated by NVivo software which assisted in organizing the data analysis. A total of four macro codes were identified to describe the importance of relationships during knowledge seeking including provider’s engagement, shared and sustained work experiences, psychological safety and reciprocation.

### **RESULTS**

Employees are frequently exposed to problems that they do not know how to solve, which requires them to seek expertise from others. Within the case study organization, examples of these problems included situations when respondents lacked understanding of the design specifications for parts of the wastewater project or conducting physical modeling of a pipe station. Because solving these problems was necessary for project progression, respondents sought additional knowledge and expertise. The expertise seeking process included approaching experts directly to ask questions whenever respondents knew where to identify the necessary expertise. While the knowledge provider’s level of expertise was essential in the process of knowledge seeking, this topic has been described in detail elsewhere (Poleacovschi and Javernick-Will 2015). In this paper, we found that individuals sought knowledge based on the quality of relationships they had with knowledge providers. Specifically, they chose knowledge providers based on the knowledge provider responsiveness and engagement, shared and sustained work experiences, the knowledge seeker’s psychological safety, and reciprocity.

#### ***Knowledge provider’s engagement***

Respondents described creating closer relationships with those who were willing to help and were responsive. A respondent mentioned the two different types of knowledge providers: *“Well, I guess, I think that in a large organization, there’s always going to be people that are cooperative and willing to help. And then there’s going to be some people that are either too busy or uninterested.”* In a similar manner, we asked a respondent whether they purposefully avoided asking a person for their advice. He described that there was a person who had the right expertise on a subject, but they built a reputation of not being responsive. Thus, individuals who were considered as “helpful” or “responsive” were more likely to be approached for advice.

### ***Shared and sustained work experiences***

Respondents often mentioned developing a network of acquaintances and friends whom they frequently contacted for professional advice. These relationships were developed among peers who previously worked on common projects and had the opportunity to interact and collaborate over an extended period of time. When working collectively, individuals create common experiences which increase salience of the relationships as they start sharing common memories and understanding of the work environment. A respondent described common work experiences he had with another employee: *“So we worked on similar projects, similar clients, municipal clients, a lot of sewer, drain, gravity infrastructure work. We both had very similar outlooks to the company.”* Common work experiences helped build meaningful relationships when they occurred over an extended period of time as explained by another respondent: *“I’ve had a small and very focused bit of interaction with this particular person over a number of years and each particular interaction with them just reinforce my respect for them.”* Similarly, a respondent mentioned he avoided an expert in the field due to lack of common work experiences: *“I haven’t worked with this person one-on-one. I have been involved with one very, very small aspect in one of their projects previously.”* In addition, these relationships were ongoing which does not require for individuals to introduce themselves: *“It was just a familiarity thing. If somebody clicked on my LINK that I could quick ping him without having to go through a long explanation of who I am, what I’m on working on. He already knew what I was working on.”* In this case, absence of introductory openings facilitates communication.

### ***Psychological Safety***



During our interviews, we found that individuals referred to their feelings during interactions with providers. A respondent mentioned that she did not want to look unknowledgeable when asking for help. She explained that that she needed to prepare in advance when asking questions from another engineer to learn the background information on the topic. Another respondent mentioned that his supervisor was empathetic towards his experiences which helped the respondent feel comfortable around him: *“He goes through my growing pains and me getting comfortable with the company, but he’s always done it in a very professional and outstanding way, and so I’ve never felt like that question was too small to approach him with.”* He also added that the relationship between the two became a close relationship: *“He really helped me understand the system. He did all of the process, so what chemical has to be added when, what speed the pumps have to be operated on. So it really became a mentor-protégée relationship.”*

### ***Mutual understanding and reciprocation***

Reciprocity was a powerful norm in the process of knowledge seeking. Some of the reciprocal relationships were based on task interdependency, in which the seeker and provider had to interact based on common work goals. Creating meaningful relationships based on reciprocity was also part of the working culture in some groups as mentioned in this quote: *“We help each other out. So if she came to me with her own problem and I could help her, I would take time out of whatever I was doing, stop and give her a hand. That’s how we do work here.”* Additionally, reciprocity was mentioned to be an important mechanism in maintaining the relationship between the seeker and provider over time: *“I found we have a working relationship whereby he would ring me up on projects where he felt I could add value and vice versa, a few weeks down the line it might be reversal of the role”*

## **DISCUSSION AND CONCLUSIONS**

It is known that relationships matter for knowledge connections (Burt 1995; Granovetter 1973) and knowledge transfer (Hansen 1999; Levin and Cross 2004). However, it is not known what role relationships play in the process of knowledge seeking. Previous work has described relationships as single item concepts neglecting the actual practice of these relationships (e.g. tie strength is based on frequency of interactions). In this research, we proposed explaining the relational antecedents of knowledge seeking. The process of knowledge seeking represents selecting people as sources of knowledge and information (Hertzum 2014). We found that quality

of relationships matters in the process of knowledge seeking. Using qualitative data, we identified that provider's engagement, history of work experiences, seeker's emotional comfort and reciprocity were important factors when approaching somebody for help. Identifying these categories is important for extending existing relational concepts (e.g. tie strength, tie) (Adler and Kwon 2002; Tsai and Ghoshal 1998) as these concepts have been often treated as unidimensional. Our findings complement and complicate existing studies on relationships. For instance, our findings on common work experiences complement previous concepts of strong ties as a history of frequent work interactions (Granovetter 1973). Nevertheless, our results show a social-practice perspective of relationships. The results show the progressive nature of building relationships over time (e.g. *"I've had a small and very focused bit of interaction with this particular person over a number of years and each particular interaction with them just reinforced my respect for them."*). They also show the collective nature of knowledge seeking by emphasizing the importance of ongoing interactions between the seeker and provider. Individuals made sense of their previous interactions with the provider to understand the type of person they were, the level of interactions with the seeker and their

The practical implication from this study is promoting the understanding that knowledge seeking process is, in part, a function of the quality of the dyadic relationship between the knowledge seeker and provider—reliability and psychological safety being two factors that influence a provider to seek information from an expert. To enhance the creation of meaningful work relationships, organizations need to acknowledge the importance of a cooperative culture in which providers are encouraged to be welcoming to questions and providing positive feedback. They can also create new work opportunities (e.g. exchange programs) especially among units that are unconnected.

### **Limitations**

As with any research, this paper presents limitations. First, the research has been conducted within the one organization. Second, we used interview data only which represents reflections of the respondents about the seeking process and potentially not the way the process was actually done. Future research can reproduce this research across cases and also use observations to validate existing results.

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