HOW COMMUNICATION IMPACTS ON THE DEVELOPMENT OF TRANSACTIVE MEMORY SYSTEM IN TASK-TEAMS?

Yonglin Yang, Yanping Liu and Fangcheng Tang
School of Economics & Management, Beijing Jiaotong University, Beijing 100044, P.R. China

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Abstract: This study examined the effect of different communication modalities on the development of transactive memory systems (TMSs) in task-teams. We propose that development of TMSs to meet different expertise and knowledge demands is dependent on communication context and modes. Findings suggest that in task-teams, informal communication context, face-to-face (FTF) and non-face-to-face (non-FTF) communication modes are positively related to the development of TMS. The results also show that the effect of communication context and modes on TMS development is moderated by prior familiarity among team members. Furthermore, TMS is positively related to team performance. Finally, theoretical and managerial implications are discussed.

1 INTRODUCTION

Most of the existing empirical research in the laboratory demonstrates that TMS has powerful effects for task performance and expertise utilization (Hollingshead, 1998); (Liang et al., 1995); (Moreland, 1999); (Moreland & Myaskovsky, 2000). For example, Lewis (2004) argues teams that develop TMSs are more likely to fully utilize members' expertise and realize the value of embedded team knowledge. Recent field studies also show that TMSs help ongoing organizational teams perform well, suggesting that TMS may provide benefits across a general set of team tasks (Austin, 2003; Faraj & Sproull, 2000).

While communication was viewed as a valuable tool for the development TMS (Hollingshead & Brandon, 2003), other researchers argued that communication never facilitated the development of TMS (Akgün et al., 2005). These two inconsistent views make the role of communication process in the TMS development unclear. In addition, although researchers have also studied the conditions that favor the TMSs development, emphasizing the close relationships and familiarity among group members (Wegner, 1987) but have failed to analyze what roles familiarity plays in TMS. It is also not clear from the literature how the extent of familiarity among group members influence the relationships between communication and TMS development.

In this study, we focus on the communication processes that influence TMSs development. We believe that by affecting members' expectations and interactions, communication processes play a key role in developing the structure of a TMS. Then, in a project, combining and integrating members' expertise become key functions of a TMS, but the extent to which a TMS facilitates knowledge utilization and integration depends on the nature and frequency of group communication processes.

2 COMMUNICATION PROCESSES AND TMS DEVELOPMENT

To tap the role of communication in TMS development, we introduce the extent of familiarity as a moderator of the relationships between communication and TMS development. We propose a research model to explain how communication context, communication modes, familiarity, TMS development and group performance might be related in workgroup. Figure 1 summarizes the relationship among these five factors.

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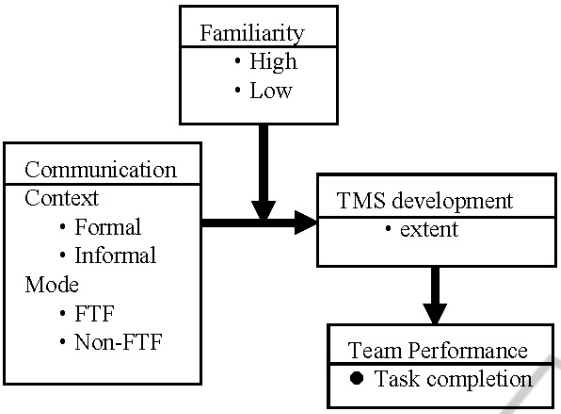

Figure 1: Research model.

2.1 Communication Context

Past research demonstrated that providing feedback about individual skills and opportunities to communicate created an effective TMS. The communications involved both formal and informal intrateam interaction (Lynn, 1998). An organization's communication channels develop around these interactions within the organization that are critical to its task. Generally, formal communication was exchange via formal meetings and written documents. Informal communication involved exchange via hallway interactions and after-work socialization. So we can gain the following propositions:

Proposition 1a: The frequency of formal communication will be positively related to TMS development.

Proposition 1b: The frequency of informal communication will be positively related to TMS development.

2.2 Communication Mode

Communication processes that aid in transactive retrieval are important for creating a TMS that facilitates knowledge utilization and integration during the project. Furthermore, the nature of this communication may be critical to create a TMS that helps achieve high performance. Organizational groups have a variety of communication modes from which to choose, including face-to-face meetings, electronic mail communication, and telephone conversations. According to Griffith and his colleagues (Griffith & Neale, 2001); (Griffith et al., 2003), most groups in organizations use a combination of these, choosing to emphasize one mode over another depending on the needs of the task and group. Face-to-face meetings have the advantage of being the most information-rich communication medium (Daft & Lengel, 1986) because they convey both verbal and nonverbal information (through body language, eye contact, facial expressions). Information richness is potentially important for transactive retrieval processes because members may have encoded information about others' expertise in nonverbal communication that occurred earlier in the project. Research by Hollingshead suggests the relationships between communication medium, TMS, and performance are complex. Results of her studies imply that a group's choice between communicating face-to-face or through a less information-rich medium should depend on the extent to which a TMS has already developed. Groups that have failed to develop a functional TMS during the project and communicate predominately through means other than face to face should be least likely to develop a TMS capable of facilitating knowledge retrieval, utilization, and integration. Therefore, we present the following proposition:

Proposition2a: The frequency of face-to-face communication will be positively related to TMS development.

Proposition2b: The frequency of non-face-to-face communication will be positively related to TMS development.

3 THE MODERATING EFFECT OF PRIOR FAMILIARITY

As the antecedent of TMS development, team member familiarity refers to the degree of prior interaction between of group members (Harrison et al., 2003). Familiar members are more likely to have had a variety of experiences together that give them a more accurate view on the content, credibility, and depth of a members' expertise. So interpersonal knowledge will be intense in highly familiar teams and prior experience forms a range of beliefs and these affected the sharing of information. Gruenfeld et al. (1996) suggest that familiar members are also more likely to offer, discuss, and consider unique information, being more likely than strangers to trust the source of potentially conflicting information. Also, their study demonstrated that groups composed of familiar members with different task-critical information shared more unique information and performed better than did teams of strangers with similarly diverse information. This suggests

that member familiarity will reduce ambiguity about how expertise is distributed among members and facilitate sharing of diverse expertise-both of which will help elaborate the structure of member-expertise associations.

Since team member familiarity reduce uncertainty and anxiety about social acceptance during the project, and promotes interpersonal attraction and cohesiveness, while team members spend little or no time in acquiring members' expertise and knowledge. In contrast, if members' initial expertise is overlapping rather than distributed, member familiarity could delay the emergence of a TMS. Members with strong ties to one another are more likely to have redundant information (Granovetter, 1973) that could be overemphasized during task discussions (Stasser & Stewart, 1992). If a group's initial expertise is overlapping, high levels of familiarity could make it even more difficult to distinguish members' unique contributions. This could mean delays in defining who is responsible for what information and resolving ambiguities about how members' knowledge fits together. Although familiarity should help teams with initially distributed knowledge develop a TMS, high levels of familiarity in teams with initially overlapping expertise should cause a TMS to emerge more slowly. Thus, we propose:

Proposition 3a: The effect of formal communication on TMS development is significantly higher when familiarity is high rather than low.

Proposition 3b: The effect of informal communication on TMS development is significantly higher when familiarity is high rather than low.

Proposition 3c: The effect of FTF communication on TMS development is significantly higher when familiarity is high rather than low.

Proposition 3d: The effect of non-FTF communication on TMS development is significantly higher when familiarity is high rather than low.

4 TMS DEVELOPMENT AND TEAM PERFORMANCE

The positive influence of a TMS on group performance is well established in group behavior literature. Yoo and Kanawattanachai (2001) found that a TMS has a positive impact on team performance as shown by profit, ROA, ROE, stock price, and market share. Dividing up knowledge responsibilities allows members to focus on developing deep expertise in their individual domains, while still maintaining ready access to task-relevant knowledge possessed by others. When members are clear about who is responsible for knowing and remembering what expertise, they can spend less time searching for necessary information during task processing. Thus, well-developed TMS helps group members share and integrate their expertise quickly and efficiently, helping organizational groups achieve timely delivery of their products and services within resource constraints. TMS development also ensures that a greater amount of specialized knowledge is brought to bear on group tasks, resulting in higher-quality products and services that meet clients' needs. So TMS development during the task-performing should result in the group's high level of task completion.

Proposition 4: The extent to which TMS has developed will be positively related to the group's level of task completion.

5 CONCLUSIONS

This study attempts to examine the effect of communication context and modes on development of TMS. We expected that communication processes would affect the development of TMSs. Thus, communication processes are divided into two parts: communication context (formal and informal) and communication modes or types (face-to-face, such as formal meetings, non-face-to-face, such as telephone and email). But this study only presents some propositions because of limitation of length. Future research should focus on empirical study based on datasets.

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