Expertise Coordination in Information Systems Development Problems

Jack S. Hsu, National Sun Yat-sen University, Taiwan
Yu Wen Hung, National Sun Yat-sen University, Taiwan
Sheng-Pao Shih, Tamkang University, Taiwan.
Hui-Mei Hsu, National Kaohsiung Normal University, Taiwan

ABSTRACT

This article tackles the problem of coordination in information systems development (ISD) projects. The increasing growth in the number and complexity of ISD projects mandates a deeper look into the coordination of the variety of expertise involved in such projects. Three different forms of coordination have been used in the past: willingness, ability, and behavior. The research has found that willingness and ability are antecedents of coordination behavior, and that coordination behavior fully mediates different forms of project success.

THE PROBLEM

Past research concludes that coordination is an important factor influencing ISD project performance. However, the lack of standardization for coordination metrics (i.e., coordination ability, coordination willingness, or coordination behavior) produced inconclusive results regarding correlation between coordination and performance.

This study examines the relationships among expertise coordination willingness, expertise coordination ability, and expertise coordination behavior, and their impacts on ISD project outcomes in terms of performance, system quality, and personal work satisfaction.
Based upon the background discussion, we propose the research model shown in Figure 1.

**Figure 1: Proposed research model**

*Expertise coordination ability* is defined as the ability to process information through the knowledge exchange, integration, and combination. It refers to the extent to which project team members are able to exchange, combine, and integrate knowledge or expertise to find solutions for the problems.

*Expertise coordination willingness* refers to the extent to which project team members are willing to exchange, combine, and integrate their unique expertise or knowledge to solve a problem.

*Expertise coordination behavior* refers to the exchange, combination, and integration of individually held specialized expertise in the accomplishment of tasks at the project level.

*Project performance* refers to how efficiently and effectively a team can complete its required tasks. Efficiency means accomplishing the work within a schedule and a budget, and effectiveness represents the quality of the work.

*System quality* refers to the extent to which the system is stable and easy to use.

*Personal work satisfaction* refers to team member perceptions of the teamwork processes.

The model variables are related according to the following hypotheses:

- **H1**: Expertise coordination ability is positively associated with expertise coordination behavior.
- **H2**: Expertise coordination willingness is positively associated with expertise coordination behavior.
- **H3a**: Expertise coordination behavior is positively related to project performance.
- **H3b**: Expertise coordination behavior is positively related to system quality.
- **H3c**: Expertise coordination behavior is positively related to personal work satisfaction.
THE METHOD

The study is based on a survey conducted over 525 members from 104 development teams selected from the author’s social network in Taiwan. 70% of the respondents were male. 17% of the respondents have management roles, the rest have lower positions.

The responses were analyzed using statistical techniques testing the hypotheses and measuring the influence of each variable in the outcomes of the model. The details are presented in the paper (see the link at the end).

FINDINGS AND PRACTICAL IMPLICATIONS

According with the statistical analysis, expertise coordination ability shows a significant relationship with expertise coordination behavior. Hence, H1 is supported.

Expertise coordination willingness shows a significant relationship with expertise coordination behavior, supporting H2. The result is in alignment with past studies showing that the willingness to coordinate knowledge is more important than coordination ability in determining the extent of knowledge coordination.

Expertise coordination behavior shows a significant, positive relationship with project performance, system quality, and personal work satisfaction. These findings support hypotheses H3a, H3b, and H3c, and confirm previous research on coordination in software teams. Indeed, expertise coordination has a higher impact on team performance than traditional factors such as group resources or administrative coordination.

ISD projects include knowledge-intensive activities that require the integration of individuals with diverse backgrounds to solve problems following established procedures. This study highlighted the importance of expertise coordination by showing its impact on multiple project outcomes. Coordination behavior is a function of both the willingness and the ability to coordinate, with behavior acting as a mediator in the relationships of willingness and ability to multiple outcomes.

FULL CITATION


FOR MORE INFORMATION

- PMJ articles and Sponsored Research monographs are available to members for free download.
- Monographs can also be purchased at the PMI Store on PMI.org.