

## INTER-ORGANIZATIONAL KNOWLEDGE TRANSFER MECHANISMS IN TAIWANESE SMEs

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### Abstract:

The concept of open innovation emphasizes the importance of cross boundaries between firms to explore external knowledge for internal use and exploit internal knowledge for value creation. Based on previous studies, the open innovation model has been mostly researched and analyzed in multinational enterprises of technology-intensive industries, such as pharmaceuticals and information technology (Chesbrough, 2003; Kirschbaum, 2005). Recently, few studies began to investigate the practices of open innovation (e.g. trends, motives, innovation sources) in small and medium-sized enterprises (SMEs). However, these studies usually investigated the patterns of innovation sources and strategies in high-technology SMEs in the process of open innovation activities (van de Vrande, et al., 2009; Lee, et al., 2010). More contextual details in knowledge transfer mechanism between firms need to be further developed in the context of open innovation, especially in service sector.

This research aims to investigate the issue of how a firm uses different types of mechanism for transferring knowledge with external actors to explore the essential knowledge to develop a new service and further exploit complementary resource for commercialization in the process of innovation. Based on the above research objectives, this research focus on the following main research questions: 1) How do SMEs adopt different types knowledge transfer mechanisms with external actors to contribute to new service development? 2) What factors influence the adoption of knowledge transfer mechanisms in the process of new service development? The present research adopted the concept of information richness, which based on previous studies (e.g. Daft et al., 1987; Sheer and Chen, 2004) to operationalize the capacity of knowledge transfer. These studies argued that different mechanisms can be characterized as high or low degree of information richness. They proposed that the degree of information richness depended on the level of attributes of a mechanism, including its feedback capability, language variety, availability of multiple cues (e.g. voice inflection, words, and graphic symbols) and personal focus (e.g. emotion and feeling). When a mechanism has more of these attributes, it can be identified as higher in information richness and having greater capacity to transfer knowledge.

The present study uses a case study design, which facilitates an empirical inquiry into a contemporary phenomenon, drawing empirical evidence from software design service industry in Taiwanese SMEs. Documentation and semi-structured interview were applied in the data collection process. Semi-structured interviews were conducted with managers of service design SMEs, in order to fully understand the development process of the services in question and increase the credibility of the present research. In total, this research conducted interviews with 16 interviewees. The interviews were analyzed using a thematic framework to guide the initial data analysis in this enquiry. Moreover, cross-case synthesis was chosen as the analytical technique to summarize the findings from the individual cases and to identify the similarities and differences between SMEs.

This present study found that case companies often used higher degree of information richness mechanisms (i.e. temporary project meeting and peer-to-peer discussion) for transferring knowledge with their cooperative firms in the aspects of different areas of domain knowledge, functional requirements, coordinated different functional development. Then case companies used lower degree of information richness mechanisms (i.e. minutes, technological specification, and contract terms) to confirm the accuracy of knowledge flow between firms and to develop a new service. Finally, case companies used higher degree of information richness mechanisms (i.e. telephone and email) for transferring knowledge with their cooperative firms in order to quickly response any problems occurred between firms, such as the problems of system connection among different actors, and to develop possible solutions. Based on the above research finding, the present study further found that the adoption of knowledge transfer mechanisms may be influenced by the stage of new service

development. Case companies often used higher degree of information richness mechanisms for transferring knowledge with their cooperative firms in the fuzzy front end phase. The lower degree of information richness mechanisms were used with their cooperative firms in the service development stage. The higher degree of information richness mechanisms were adopted with cooperative firms again in the stages of testing and commercialization. In conclusion, the present research used the concept of information richness to operationalize the capacity of knowledge transfer. Thus it offered a better understanding of the adoption of different degree of information richness mechanisms for knowledge transfer between firms in different stages of new service development to contribute to innovation effectiveness in SMEs.

*Keywords: open innovation, knowledge transfer, information richness, small and medium-sized enterprises (SMEs)*

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