The Role of Knowledge Sharing in Raising the Task Innovativeness of Systems Analysts

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ABSTRACT
This study examines the relationship between creativity and innovation at the individual level and how knowledge sharing mediates the relationship between these two constructs. A survey was conducted that measured individual creativity, innovativeness, and four types of knowledge sharing: explicit knowledge and tacit knowledge (e.g., experience, know-how, and expertise) sharing. It was postulated that the type of knowledge mediates the relationship between creativity and the innovativeness of task performance among systems analysts. The results show that creativity was positively related to task innovativeness. This relationship was mediated negatively by explicit knowledge sharing but positively mediated by tacit knowledge sharing based on know-how among project team members. These results have implications for system development and implementation projects.

Keywords: Creativity, Individual Creativity and Innovation, Knowledge Sharing, Systems Analysts, Task Performance

1. INTRODUCTION
The work of today’s system analyst has become more complex and knowledge intensive, requiring greater skill in managing knowledge resources. One function of system analysts is to bridge the gap between various users, many of whom are located in company units around the world in order to bring together external knowledge and information relevant to the project (e.g., customer needs, product information, material specifications, scheduling knowledge such as lading orders, etc.). Increasingly, systems analysts are called upon to provide innovative solutions as part of the implementation process (Hoffer, George, &
Valancich, 2008, p. 540) given the complexity of modern organizations. Individual creativity and knowledge sharing are expected to be prerequisites for generating innovative solutions. The aim of this study was to explore the relationships between individual creativity, knowledge sharing and task innovativeness on the part of system analysts as they develop and implement complex information systems.

2. BACKGROUND AND THEORY

The IS community has had a strong interest in creativity in organizational contexts. This has sparked questions such as how to make the IS organization more creative (Case, 1997; Couger, 1994, 1996; Couger et al., 1993; Glass, 1992; Harkness et al., 1996; Humphrey, 1997; Nambsan et al., 1999), how IT can make managers more creative (Elam & Mead, 1987; Massetti, 1996, 1998), how creative individuals use IT differently than their less-creative peers (Foxall & Bhate, 1991; Larsen, 1999), creative applications of knowledge (Baer, Kaufman, & Gentile, 2004; Dorst & Cross, 2001; Goldschmidt & Tatsa, 2005; Liu, 2000, 2011). Some, but much less has been written about the creativity of system analysts and IS professionals (e.g., Seidel et al., 2010; Yang & Cheng, 2010).

Koesler (1964) defines creativity as the ability to associate one system of thinking (i.e., matrix of thought) to another seemingly disparate one, something he refers to as bisociation. Farid-Foad et al. (1993) define creativity as that which “results in generation of new and useful ideas or the combination of existing ideas into new and useful concepts to satisfy a need” (p. 4). We are interested in how systems analysts are able to accomplish such associations and transformations.

There are number areas in which systems analysts exercise their creativity. For example, systems analysts exercise creativity during processes such as (1) problem identification (2) information searching and encoding, and (3) idea and alternative generation (Amabile, 1983; Reiter- Palmon & Illies, 2004). The processes themselves encourage, even require, creativity as systems analysts try to achieve a deeper understanding of the systems they are tasked with building or implementing. Other studies of how individuals come to develop creative ideas (Drazin, Glynn, & Kazanjian, 1999; Mumford, 2000; Shalley et al., 2004; Camelo-Ordaz et al., 2011) also emphasize the importance of context on creative expression.

Furthermore, we were interested in how creativity translated into innovativeness at the individual level. Amabile (1996, pp. 1154-1155) defines innovation as, “...the successful implementation of creative ideas within the organization. ...creativity by individuals is a starting point for innovation: the first is a necessary but not sufficient condition for the second.” Innovativeness on the part of system analysts requires creative thinking and other skills related to communication and knowledge sharing.

Often an initial invention or a deep insight regarding how to manage a process or design a specific solution is the first of several stages before an innovation is achieved. This process requires the exchange of knowledge between users and system analysts. We take knowledge to mean, “information combined with experience, context, interpretation, and reflection; it is a high-value form of information that is ready to apply to decisions and actions” (Davenport, Long, & Beers, 1998, p. 43). The end result is the accumulation of new knowledge for both analysts and users, which promotes higher cooperation and better solutions (Foxall & Bhate, 1991; Foxall & Hackett, 1992).

The work of system analysts depends on meaningful interactions among experts working directly and indirectly with customers to understand their needs and preferences. Data gathered by system analysts on the data-information knowledge continuum can impact all organization units, levels, and roles. Knowledge of business context, applications, infrastructure and project management is transferred, combined and integrated to achieve a collective understanding of the emerging system (Crowston & Kammerer, 1998). The design and implemen-
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