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Lorraine Lee  
*University of North Carolina Wilmington*

Joshua Davis  
*College of Charleston*

Rita Anderson  
*University of South Carolina*

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# Learning through Interactions: Improving Project Management Capabilities through Inter-organizational Communities of Practice

**Lorraine S. Lee**

University of North Carolina Wilmington  
leel@uncw.edu

**Joshua M. Davis**

College of Charleston  
davisjm@cofc.edu

**Rita M. Anderson**

University of South Carolina  
ritaa@sc.edu

## ABSTRACT

Communities of practice are a possible a mechanism for improving knowledge sharing among project managers both within and between organizations. Based on social capital theory and intrinsic and extrinsic motivation, we theorize a model of participation intensity by project managers in communities of practice. Specifically our research model expands on the various motivational drivers and perceived outcomes of project manager participation in communities of practice.

## Keywords

Project management, communities of practice, social capital theory, motivation.

## INTRODUCTION

The project manager (PM) can have a somewhat lonely role within an organization. Situated between workers who perform the project tasks and the management team ultimately responsible for delivering the project, the project manager often works without the camaraderie and close interactions with other project managers. Because organizations typically employ a smaller number of project managers relative to other positions, a project manager's ability to learn and improve job skills through daily interactions with other project managers is limited. As such, other mechanisms for learning and innovation are essential for project managers. One such mechanism that project managers may choose to leverage is an inter-organizational community of practice (CoP).

CoPs are one way business professionals learn and innovate in the workplace (Brown and Duguid 1991). For PMs, especially those working in organizations with relatively few peer PMs, participation in an external community of practice can possibly be an important mechanism for improving project management skills. Findings from past studies point to several general drivers and benefits derived from communities of practice (e.g. Lave and Wenger 1991; Wenger 1998). Adapting this past work specifically to the project management context, this study seeks to examine individual and organizational impacts of project manager participation in CoPs. Using social capital theory and motivational theory as our overarching theories, we develop an integrative model that addresses the following questions:

What motivates a project manager to participate in a community of practice?

What are the individual and organizational benefits associated with a project management community of practice?

This paper is organized as follows. First, the community of practice concept is introduced. Second, we briefly discuss social capital theory and motivational theory in the context of communities of practice and utilize the theories to develop the hypotheses associated with the research model. Third, we develop the constructs used to test the model. Finally, we discuss the plan to deploy the research instrument to test the research model.

## THEORETICAL BACKGROUND AND HYPOTHESES

## Communities of Practice

A CoP is defined as an informal group of people bound together by a common disciplinary background and similar work activities (Millen, Fontaine, and Muller 2002) with the primary purpose of developing members' capabilities by building and exchanging knowledge (Wenger and Snyder 2000). CoPs can be internal to a specific workplace or span across different companies. In contrast to formal work groups or project teams where the employees are assigned by management, members of a community of practice select and organize themselves. As aptly described by Wenger and Snyder (2000, p. 142), "...people in such communities tend to know when and if they should join."

Communities of practice have been recognized in the management literature as an influential mechanism by which knowledge is created, stored, and transferred (Brown and Dugid 1991; Roberts 2006). Communities of practice can add value to organizations through driving strategy (Saint-Onge and Wallace 2003), developing new ideas for products and services (Lesser and Storck 2001), transferring best practices (Millen et al. 2002), and helping with recruiting and retaining employees (Wenger and Snyder 2000).

For project managers, especially those working in organizations with a limited number of project managers, CoPs offer a way of interacting with a wider range of colleagues. In fact, the Project Management Institute (PMI) sponsors several virtual CoPs as a means for PMI members to meet online, discuss ideas, and build the overall PM body of knowledge. Examples of the PMI virtual CoPs are those in specific sub-disciplines of project management, such as agile project management and risk management, or in specific industries utilizing project management, such as retail and pharmaceuticals.

Despite the increase number of CoPs overall, as well as the many potential benefits associated with CoPs, there have been relatively few quantitative studies of the linkages among the drivers of participating in a community of practice and the subsequent benefits (both individual and organizational) from participation, especially in the context of project management. Many of the studies on the benefits of CoPs have utilized a qualitative, case-based approach. For example, Lesser and Storck (2001) performed a case study based on seven organizations and identified four outcomes associated with communities of practices – 1) decreased learning curve 2) increased customer responsiveness 3) reduction in the amount of rework and 4) increased innovation.

This study addresses the lack of quantitative research in the area of CoPs and project management by developing a theory-driven model explaining why PMs participate in communities of practice and the individual and organizational benefits resulting from participation. Based on social capital theory and motivational theory, our overarching research model is presented in Figure 1.

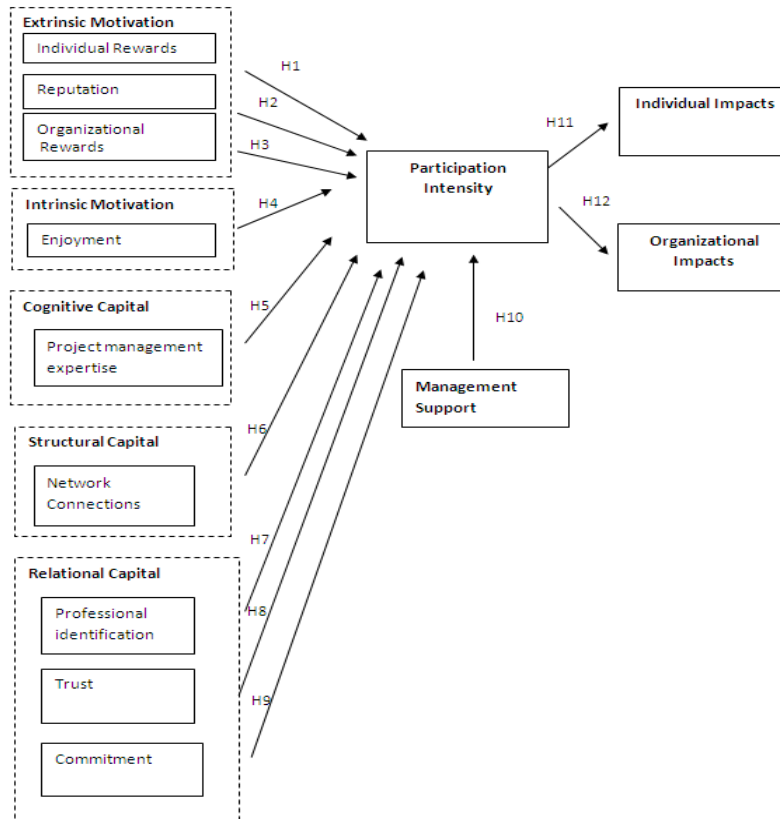


Figure 1: Research Model

### Social Capital Theory

Social Capital Theory (Nahapiet and Ghoshal 1998) provides an appropriate theoretical basis for identifying factors driving PM involvement in professional CoPs. Social capital typically refers to knowledge resources embedded within networks of human relationships (Nahapiet and Ghoshal 1998; Lin 2001) and argues that social capital provides the necessary conditions for the exchange of knowledge to occur (Kankanhalli et al. 2005). Specifically, the theory posits that knowledge exchange takes place when (1) individuals are motivated, (2) connections between individuals exist (structural capital), (3) individuals have the cognitive capability to understand and apply exchanged knowledge (cognitive capital), and (4) strong, positive relationships exist among members (relational capital) (Wasko and Faraj 2005). Overall, social capital theory can be viewed as providing an integrative framework for understanding the development and exchange of knowledge where knowledge is viewed as a public good (Nahapiet and Ghoshal 1998).

In addition to being applicable in the knowledge management context, social capital theory has been recognized as being particularly relevant in IT project management. Building on the call of Randolph and Petter (2008) to examine the use of social capital in IT project management, this research study empirically tests some of the propositions put forth by Randolph and Petter. Specifically, this research study examines the use of social capital and its importance to communities of practice, which corresponds to proposition 10 of Randolph and Petter (2008), as well as tests the impacts of a network of practice on organizations (proposition 13).

In the following sections, we break down social capital into its components and apply each to the CoP context, and supplement social capital with extrinsic and intrinsic motivation theory.

### Extrinsic and Intrinsic Motivation to Participate

Previous studies in the IS literature have identified extrinsic and intrinsic motivation as distinct classes of drivers influencing contributions to electronic knowledge repositories (Kankanhalli et al. 2005), as well as

influencing individual technology acceptance (Venkatesh 2000). Extrinsic motivation focuses on goal-driven reasons for committing an action (Deci et al. 1985), while intrinsic motivation taps into the innate pleasure and satisfaction derived from a specific action (Deci 1975; Ryan and Deci 2000).

At one end of the intrinsic/extrinsic motivation continuum, extrinsically motivated behaviors are those based on something other than an interest in the activity itself (Deci et al. 1985). In the context of CoP involvement, perceived tangible returns on information values such as personal rewards have been identified as influential drivers of participation in electronic CoPs (Wasko and Faraj 2000).

In our research model, the constructs of individual rewards, reputation, and organizational values reflect extrinsic motivators of CoP participation. Individual rewards include the specific rewards to an individual for participating in a CoP, such as better promotion opportunities, work assignments, or job performance reviews. These specific benefits can drive participation in a CoP, and we hypothesize:

*H1: There is a positive association between individual rewards and participation intensity in the CoP.*

Reputation has also been tied to knowledge contribution in online CoPs (Wasko et al. 2005). Similar to reputation, Lampel and Bhalla (2007) identified status-seeking as a primary influencing driver of participation in online communities among a group of intrinsic and extrinsic motivating factors. Overall, the literature demonstrates that perceived image and/or reputation enhancement within the knowledge sharing community can serve as a powerful motivational driver to be involved in the CoP. Therefore, we hypothesize:

*H2: There is a positive association between reputation and participation intensity in the CoP.*

A final relevant extrinsic motivation for participation in a CoP involves the value an organization places on participation. This construct reflects the extent that people in the organization value participation. As an extrinsic motivator, participation in CoP could occur because the organization rewards participation or places a premium on the new PM skills gained through participation. We hypothesize:

*H3: There is a positive association between the extent to which an organization values the CoP and participation intensity.*

At the other end of the intrinsic/extrinsic motivation continuum, intrinsically motivated behaviors are beneficial unto themselves, and the enjoyment of the behavior serves as the actual reward of intrinsically motivated behavior (Deci et al. 1985). Tailored to the context of communities of practice, intrinsic motives for exchange will be specifically concerned with the perceived enjoyment tied to the knowledge exchanged within the community. Findings from past studies on CoP involvement are consistent with these notions. Across domains of expertise and internal/external organizational contexts, the literature points to a relationship between perceived enjoyment and subsequent involvement in online and offline CoPs (Wasko&Faraj 2000, 2005; Kankanhalli et al. 2005; Tedjamulia et al. 2005; Lin 2007). Therefore, we hypothesize:

*H4: There is a positive association between enjoyment and participation in a CoP.*

### **Cognitive Capital: PM Expertise**

Past work on intrinsic motivation behavior argues that interpersonal structures related to feelings of competence during an action can enhance an individual's intrinsic motivation (Ryan et al. 2000). Similarly, social cognitive theory argues that the cognitive capability to understand and apply specific knowledge is necessary and fundamental in engaging in knowledge exchange. In line with these positions, the IS literature points to perceived competence in the form of self-efficacy (Wasko and Faraj 2000) and expertise (Wasko et al. 2005) as a positive driver of individual participation in CoPs. Therefore, with project management expertise as the cognitive capital driving participation in a CoP, we hypothesize:

*H5: There is a positive association between project management expertise and participation in a CoP.*

### **Structural Capital: CoP Accessibility**

Fundamental to knowledge exchange is the existence of information channels that provide access to knowledge resources (Nahapiet and Ghoshal 1998). Structural capital refers to the structures in place to facilitate connecting with others, or in the words of Nahapiet and Ghoshal (1998, p. 244), “the overall pattern of connections between actors – that is, who you reach and how you reach them.” In the context of CoPs, knowledge exchange cannot occur without ready access to other members through the organizational infrastructure the CoP. Therefore, we hypothesize:

*H6: There is a positive association between the accessibility of the CoP and participation.*

### **Relational Capital: Identification, Trust, and Commitment**

Three aspects of relational capital that can establish the context for knowledge exchange within CoPs are identification, trust, and commitment (Nahapiet and Ghoshal 1998).

#### *Identification*

Identification exists when an individual sees himself or herself as part of a specific group (Nahapiet and Ghoshal 1998). When an individual’s interests merge with the interests of the group, identification can happen based on those commonly-held interests (Johnson et al. 1999). From the perspective of social capital, identification establishes the group context within which knowledge exchange occurs among members (Nahapiet and Ghoshal 1998). With a strong identification to a group, perceived opportunities can increase for knowledge exchange, as well as possibly increasing the frequency of cooperation (Lewicki and Bunker 1996; Nahapiet and Ghoshal 1998). Therefore, we hypothesize:

*H7: There is a positive association between professional identification and participation.*

#### *Trust*

Trust is what enables an individual to keep an open mind to new ideas, facilitating communication and dialogue with others (Misztal 1996). Generalized trust is an impersonal form of trust that does not rest with a specific individual; rather, it targets behavior that is generalized to a social unit as a whole (e.g., a community of workers exchanging knowledge through CoPs) (Putnam 1993). In the context of participation in CoPs, generalized trust refers to the belief in the good intent, competence, and reliability of other members’ contributions in the CoP. Generalized trust has been viewed as a key factor that provides a context for both cooperation (Tsai and Ghoshal 1998) and effective knowledge exchange (Adler 2001). Therefore, we hypothesize:

*H8: There is a positive association between trust and participation.*

#### *Commitment*

Generally speaking, commitments are a duty or obligation to engage in future action (Coleman 1990; Nahapiet and Ghoshal 1998; Wasko and Faraj 2005). When committed to a CoP, a member feels a sense of responsibility for ensuring the continual existence of the CoP, as well as for helping others in the CoP. We hypothesize:

*H9: There is a positive association between commitment to a CoP and participation.*

### **Management Support**

In the IS literature, management support has been recognized as a key factor in successful IS implementations (e.g. Leonard-Barton and Deschamps 1988; Sharma and Yetton 2003). In the context of CoPs, Wenger and Snyder

(2000) find that managers cannot simply mandate communities of practice. Instead, they recommend a cultivation approach, where managers "...bring the right people together, provide an infrastructure in which communities can thrive, and measure the communities' value in nontraditional ways" (Wenger and Snyder 2000, p. 140.) Given the important role of management support in cultivating CoPs, we hypothesize the following:

*H10: There is a positive association between management support and CoP participation.*

### **Impacts of CoP Participation**

The benefits derived from CoPs have been documented in various case-based studies (e.g. Lesser and Storck 2001; Wenger and Snyder 2000). Utilizing the DeLone and McLean IS success model (DeLone and McLean 1992) that links the use of an IS to both individual impacts and organizational impacts, we hypothesize a similar relationship for CoPs. We hypothesize that the intensity of participation in a CoP can lead to individual impacts (H11) and organizational impacts (H12). More formally:

*H11: There is a positive association between CoP participation and individual impacts*

*H12: There is a positive association between CoP participation and organizational impacts*

### **RESEARCH METHODOLOGY AND NEXT STEPS**

The survey methodology will be used to collect the data to test the hypotheses. The constructs in the research model are defined in Table 1.

We are currently in the construct validation phase of this project. By the conference date in December 2010, we hope to have administered the survey to one PM CoP. At the conference, we will present the preliminary results of the study.

<b>Theoretical Foundation</b>	<b>Construct</b>	<b>Definition</b>
<i><b>Intrinsic Motivation</b></i>	Enjoyment	The pleasure that results from participating in a CoP.
<i><b>Extrinsic Motivation</b></i>	Individual Reward	The specific rewards to an individual for participating in a CoP.
	Organizational Value	The extent that people in the organization value participation in the CoP.
	Reputation	The opinions held by others about the project manager.
<i><b>Cognitive Capital</b></i>	Project Management Expertise	The knowledge of the individual in the area of project management.
<i><b>Relational Capital</b></i>	Professional Identification	Identification exists when an individual views himself / herself as part of the group.
	Trust	The belief in the good intent, competence, and reliability of other members' contributions in the CoP.
	Commitment	The duty or obligation to engage in future interactions with the CoP.
<i><b>Structural Capital</b></i>	CoP Accessibility	The structures in place to facilitate the connection with others in the CoP.
	Management Support	The management team in the organization provides the help, encouragement, and/or financial resources enabling the individual to participate in the CoP.
<i><b>CoP Usage</b></i>	Participation Intensity	The extent of participation in the CoP.
	Individual Impacts	The impacts or consequences of CoP participation that accrue to the individual.
	Organizational Impacts	The impacts or consequences of CoP participation that accrue to the organization.

**Table 1: Constructs and Definition**

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