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Shared leadership in enterprise resource planning and human resource management system implementation

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ABSTRACT

Human resource management systems (HRMS) integrate human resource processes and an organization's information systems. An HRMS frequently represents one of the modules of an enterprise resource planning system (ERP). ERPs are information systems that manage the business and consist of integrated software applications such customer relations and supply chain management, manufacturing, finance and human resources. ERP implementation projects frequently have high failure rates; although research has investigated a number of factors for success and failure rates, limited attention has been directed toward the implementation teams, and how to make these more effective. In this paper we argue that shared leadership represents an appropriate approach to improving the functioning of ERP implementation teams. Shared leadership represents a form of team leadership where the team members, rather than only a single team leader, engage in leadership behaviors. While shared leadership has received increased research attention during the past decade, it has not been applied to ERP implementation teams and therefore that is the purpose of this article. Toward this end, we describe issues related to ERP and HRMS implementation, teams, and the concept of shared leadership, review theoretical and empirical literature, present an integrative framework, and describe the application of shared leadership to ERP and HRMS implementation.

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1 . Introduction

Organizations are increasingly relying on teams to complete work. A team is a group of individuals who work interdependently to solve problems, perform work or work toward goals (Hackman, 1987). An example is the use of teams in implementing an enterprise resource planning system (ERP), which represents an information systems (IS) project. As noted by Faraj and Sambamurthy (2006: 238), "Teams are the fundamental organizational unit through which IS projects are executed." An ERP is a business management software consisting of a suite of integrated applications organizations use to manage their information and run their businesses.

ERPs are scalable, multi-functional, and complex systems and include one or more modules. The purpose of an ERP is to integrate information across core functional areas in the organization (e.g., finance, human resources, manufacturing, customer relationship, supply chain management, etc.), to facilitate the management and flow of information between the functions as well as between the organization and stakeholders. ERPs are now considered the primary technology organizations employ to manage their information (Al-Mashari, 2003).

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A human resource management system (HRMS) or human resource information system provides the capability of managing all aspects of an organization's human resource information and it represents one of the primary modules in an ERP. While the complexity increases with the number of modules included in an ERP implementation project, implementing a single module ERP/HRMS[2] is a major undertaking. Electronic human resource (e-HR) is part of an HRMS and represents the software tools that allow organizational members to access specific HR functions and information in the HRMS and perform HR activities through the organization's intranet or the internet via a web portal.

As complex systems, implementing ERPs is a complicated and lengthy endeavor often taking years to accomplish. A number of surveys have highlighted the high failure rate of ERP implementations; rates of problematic or failed implementations average over 50% (Robbins-Gioia, 2001). Because ERPs are tightly integrated systems, an ERP implementation failure in implementing one or more of the modules (e.g., Finance) can adversely affect the functioning of other modules (e.g., HRMS). While scholars have identified numerous and varied factors that can lead to ERP implementation failure, central to an IS implementation process are the implementation teams (Faraj & Sambamurthy, 2006).

Teams that are capable of making decisions and executing changes have been cited as a primary implementation success factor (Nah, Lau, & Kuang, 2001). Further, as with IS project teams in general, there is a need to complete concurrent and interdependent tasks, deal with complexity, share knowledge and expertise, deal with ambiguity and collaborate. In spite of the recognition of the importance of teams to the implementation process and the challenges faced by these teams, relatively little attention has been given to IS project teams in general and ERP/HRMS implementation teams in particular. For example, ERP teams are not among the 24 major streams of ERP research identified by Al-Mashari (2003) in a review of the literature.

The purpose of this article is to present shared leadership as a way to improve the management and functioning of teams in the ERP/HRMS implementation process. Shared leadership describes a team level phenomenon where leadership behaviors are engaged in by multiple individuals rather than a designated, formal team leader (Bligh, Pearce, & Kohles, 2006). Shared leadership is characterized by collaborative decision-making, knowledge sharing, and shared responsibility for outcomes, and team members leading each other toward the achievement of goals (Day, Gronn, & Salas, 2004; Pearce & Conger, 2003). As such, shared leadership can be contrasted with the typical approach to leading and managing IS project teams, characterized by traditional hierarchical leadership (Faraj & Sambamurthy, 2006).

As a relatively young and increasingly popular approach to team leadership, a need exists to summarize and integrate the shared leadership literature with the aim of applying it to teams involved in ERP/HRMS implementation and provide direction for future research. While there is a scholarly rationale for this effort, this endeavor is practical as well due to the complexity and inherent difficulty with implementing ERP/HRMS. Consequently, a review article at this point in time can both make the case for applying shared leadership to ERP/HRMS implementation teams as well as direct efforts by scientists to generate research related to the shared leadership approach for effective leadership of teams. Toward this end, we discuss HRMS/ERP implementation and teams, introduce the concept of shared leadership, review the literature with respect to its impact on team outcomes, then describe its application to ERP/HRMS implementation and propose a number of research propositions based on the presentation of an integrative framework. The framework presents antecedents, mediators, moderators and outcomes of shared leadership in teams, highlighting directions for future research.

2. Theoretical background

2.1. Teams and leadership in ERP/HRMS implementation

As noted by Faraj and Sambamurthy (2006), how best to lead teams involved with IS projects, such as ERPs, has remained an evolving issue. ERP/HRMS implementations are typically led and managed top down by a project manager or external leader who directs the implementation (Parr, Graeme, & Darke, 1999). Typically this leader's focus is on meeting project schedules and issues related to processes, systems, and technical aspects rather than on facilitating team functioning (Valacich, George, & Hoffer, 2006). Sarker and Lee (2003) pointed out that, in spite of this modus operandi, there is a growing consensus that human factors (such as empowered ERP implementation teams) are critical to ERP implementation success, more so than technical or economic factors that are often viewed as the primary determinants.

Implementing ERP/HRMS requires managing teams composed of individuals with multidisciplinary skills who are brought together from within and outside the organization. The ERP system implementation process usually involves multiple cross-functional teams, representing various business functions. Teams are assigned to the different phases in the system development life cycle, to implement the various ERP modules, and have responsibilities such as to define the functional specifications, create the technical specifications, modify or customize the modules to meet the functional requirements, and integrate and test the modules. Further, as IS project teams, these teams have to integrate their expertise, share their knowledge, operate in a highly coordinated fashion, and typically work under time pressures (Faraj & Sambamurthy, 2006; Yuan, Zhang, Chen, Vogel, & Chu, 2009). ERP/HRMS implementation success is heavily dependent on the effectiveness of implementation teams in performing interdependent and concurrent tasks, and communicating and collaborating both within and between the teams.

[2] Throughout this paper we use the term ERP/HRMS to refer to general ERPs that include at least an HRMS module.

Reports of the frequency of ERP implementation failure rates highlight the complexity of the implementation process. Failure is defined as canceling the implementation, inability to run the organization following the implementation (e.g., interrupting production or inability to ship orders), unrealistic extensions of the implementation and go-live schedules, or a post go-live system with inadequate features. A survey conducted by Robbins-Gioia (2001) reported that of 232 company respondents, 51% reported that their ERP projects were unsuccessful. A Conference Board survey (Cooke, Gelman, & Peterson, 2001) reported that among 117 company respondents 40% of their ERP projects were unsuccessful while 25% were over budget. Finally, the Standish Group's (2009) Chaos Report surveyed 400 organizations and found that 32% of IT projects were successful while 24% were failures, and 44% were characterized as challenged in that they were completed late, over budget or with fewer than the required features.

Based on the frequency of ERP failure, researchers have examined failure and success factors. Much of the identification of, and focus on, failure factors has highlighted business and technical related issues such as inadequate upper management support and resources, poor quality of business processing re-engineering, over-reliance on heavy customization of the ERP, poor IT infrastructure, having too tight of a implementation schedule, etc. (Gargeya & Brady, 2005). The literature also indicates that implementation delays and failures often are due to leadership and project management problems rather than simply due to business factors or the technology itself (Barker & Frolick, 2003; Bingi, Sharma, & Godla, 1999; Ehie & Madsen, 2005). Nah et al.'s (2001) review of prior studies on ERP implementation identified eleven factors that are critical to ERP implementation success. Among the factors were ERP teams and leadership. Regarding ERP teams, Nah et al. (2001) cited Stedman (1999) who stated that a key to Lockheed Martin's successful ERP implementation was assembling cross-functional teams that were capable of making decisions and executing changes. Identifying implementation teams as a common success factor has also been highlighted by others such as Rothenberger and Srite (2009).

The key role played by teams in IS project success underscores the need to emphasize this human factor aspect of the implementation process. In addition, the related role of team leadership also needs attention. While IS projects, such as ERP/HRMS implementations, typically utilize a traditional leader-centric approach (Sarker & Lee, 2003), with a formal designated leader, we expect that incorporating a shared leadership approach is more appropriate for leading implementation teams. Shared leadership is a form of team leadership where multiple team members engage in various forms of leadership rather than only having a single hierarchical leader responsible for team functioning and goal attainment. Factors characterizing ERP/HRMS implementation teams and their responsibilities (highly skilled members working on interdependent tasks, who have to integrate their expertise, share their knowledge, and operate in a highly coordinated fashion) are consistent with teams that flourish more effectively under lateral management approaches, such as shared leadership (Pearce & Manz, 2004).

There are at least four reasons why shared leadership represents an appropriate approach for leading ERP/HRMS teams. First, ERP modules, such as Oracle HRMS, are complex, flexible and highly configurable. The greater the flexibility and configurability, the larger number of decisions that need to be made by the implementation teams during the implementation process (Conway & Stratton, 2000). Second, even though the HRMS implementation process is typically part of a multi-module ERP implementation project, the HRMS implementation represents a separate process from implementing the other modules, such as financials, which are closely integrated with HRMS. Third, the complexity of ERP modules requires a high level of both IT technical expertise as well as functional expertise on the teams involved in the implementation. For example, it is recommended that the teams implementing the HRMS module include a mix of both functional and technical consultants as well as functional and technical staff from the organization (Conway & Stratton, 2000). Fourth, a high degree of coordination, knowledge sharing, and communication is needed within the ERP/HRMS implementation teams and between the teams.

2.2. Concept of shared leadership

Shared team leadership describes a collective team leadership by the team members and is characterized by collaborative decision-making and shared responsibility for outcomes. It has been described as a mutual influence process carried about by members of a team where they lead each other toward the achievement of goals (Avolio, Sivasubramaniam, Murry, Jung, & Garger, 2003; Day et al., 2004; Pearce & Conger, 2003). It is generally viewed as relevant and advantageous for teams composed of members who have the ability to engage in collaborative decision-making, influence and support other team members, foster motivation, and take responsibility for outcomes, which represent behaviors that are central to shared leadership (Carson, Tesluk, & Marrone, 2007; Pearce & Conger, 2003). The composition of ERP/HRMS implementation teams is consistent with requisite KSAOs and thus these teams represent an ideal context for the application of shared leadership among team members. This was demonstrated on a large scale in the Apache Project which was a collaborative software development project of an open source HTTP web server (Fielding, 1999). Applied to ERP/HRMS implementation teams, shared leadership would involve leadership actions by team members during the stages of the implementation process whereby they engage in collaboration, decision-making, and take responsibility for goals, rather than simply being directed individually by a project team leader.

Various conceptualizations have been proposed for shared leadership but there are general themes running through them. For example, a common notion is that this leadership approach represents a group or team process. This is reflected by Carson et al. (2007: 1,218), who defined shared leadership as “an emergent team property that results from the distribution of leadership influence across multiple team members… that can significantly impact team and organizational performance.” In addition, shared leadership is generally characterized in terms of the spreading of leadership to team members in general, rather than to

only a few of the members. This was noted by Ensley, Hmieleski, and Pearce (2006: 220) who described shared leadership as a "team process where leadership is carried out by the team as a whole, rather than solely by a single designated individual." Beyond this, other researchers (e.g., Fitzsimons, James, & Denyer, 2011; Gronn, 2002; Spillane, 2006; Zhang & Faerman, 2007) have conceptualized shared leadership as leadership that is distributed among different individuals in the organization, exceeding the boarders of the team. In our proposed application of shared leadership to ERP/HRMS teams, we limit shared leadership to a within-team process, not exceeding the unit of the team.

Shared leadership and its application to team-based work structures has received increased research attention, in a large part due to organization's widespread adoption of structuring work around teams (Kozlowski & Bell, 2002). The leadership of teams, in contrast to managing traditional and individual work arrangements, has presented new challenges to management (Morgeson, DeRue, & Karam, 2010; North, 2010; Yukl, 2009). This is particularly true regarding IS project teams composed of highly skilled employees and knowledgeable workers, whose tasks are complex and highly interdependent, and who are required to engage in a high level of coordination and able to integrate and share their knowledge and expertise (Faraj & Sambamurthy, 2006; Faraj & Sproull, 2000). Shared leadership is a particularly appropriate approach for facilitating ERP/HRMS implementation because these teams represent those capable of sharing leadership roles.

As a leadership approach, shared leadership is not mutually exclusive to other leadership forms and behaviors, but can be engaged in simultaneously with other approaches such as vertical leadership. Shared leadership scholars have indicated that shared leadership is possible among team members even when there also is a single designated leader; multiple leadership actors and activities can occur at the same time and shared leadership is not exclusive to vertical leadership behaviors (e.g., Cox, Pearce, & Sims, 2003; Pearce & Sims, 2002). Further, shared leadership does not mean that the distribution of leadership or influence among team members is necessarily "equal in all shared-leadership groups" (Seibert, Sparrowe, & Liden, 2003, p. 176), but there is participation among team members rather than leadership solely from a single team leader. In general, shared leadership has been demonstrated to enhance team and organizational outcomes in a range of different organizational settings and for a variety of types of units even in the presence of other forms of leadership (Avolio, Jung, Murry, & Sivasubramaniam, 1996; Carson et al., 2007; Ensley et al., 2006; Pearce, Yoo, & Alavi, 2004).

In proposing the adoption of shared leadership in ERP/HRMS implementation teams, it is important to note the different approaches researchers have used to measure shared leadership. One group of researchers (e.g. Carson et al., 2007; Mehra, Smith, Dixon, & Robertson, 2006) have used a network-based approach (Shaw, 1964), and have investigated the distribution or "networks" of power, balance or leadership among individual team members, and thus have placed more emphasis on the question of how shared leadership was enacted among individuals. A second group of researchers (e.g., Avolio et al., 1996; Hmieleski, Cole, & Baron, in press; Pearce & Sims, 2002) have addressed the collective engagement of traditional 'vertical' team leadership behaviors (e.g., transformational leadership or authentic leadership) among the team members, and therefore have measured leadership behaviors performed by team members. These two forms of measurement have important implications for the generalizability of the results. Namely, what predicts the balance of leadership among individuals might not be the same as what predicts the enactment of a collective set of within-team behaviors?

Finally, there has been some discussion in the IS literature regarding using shared leadership in IS project teams (e.g., on software development teams). For example, Moe, Dingsøyr and Dybâ (2009) argued for a self-management approach to software development teams which they describe as a shared leadership approach with no vertical leader. Faraj and Sambamurthy (2006) examined 69 software development teams and found that directive leadership practices toward teams were not related to team performance while empowering leadership practices were. Fielding (1999), in the Apache project noted above, described leadership by virtual group members in the absence of a single leader in the project. In spite of efforts such as these, very limited attention has been directed to the application of shared leadership in IS project, or ERP/HRMS implementation, teams. Further, no frameworks have been developed that integrate shared leadership antecedents, team process mediators, or moderators involved in the shared leadership and ERP/HRMS implementation team performance relationship. We now turn our attention to presenting such an integrated framework.

2.3. Integrative framework

In Fig. 1 we present an integrated framework on shared leadership. Our model is an extension of Zaccaro, Rittman, & Marks (2001) model of leader performance functions. The model presents antecedents leading to shared leadership, influencing team processes, moderated by contextual factors, and leading to team performance. Shared leadership is expected to have a number of antecedents or to be facilitated by a number of factors. A review of the literature suggests three categories of antecedents for shared leadership: vertical leadership, team member characteristics and composition, and support factors (Hoch, 2007). Second, as posited by Zaccaro and colleagues (Zaccaro & Klimoski, 2002; Zaccaro et al., 2001) leadership affects various team processes, which in turn affects team performance. Therefore, we include cognitive, motivational, and affective processes in our framework (e.g., Kozlowski & Bell 2003), and we expect the three process categories to explain the impact of shared leadership in predicting team outcomes. Third, as presented in the framework, we expect several factors to moderate the shared leadership and team processes relationship, including, interdependency, complexity, and virtuality.

We use the framework to organize our review of the extant empirical literature and to apply shared leadership to ERP/HRMS implementation teams. Along with the review of the empirical literature and identification of research gaps, we propose a number of propositions to direct future research on shared leadership in ERP/HRMS implementation teams.

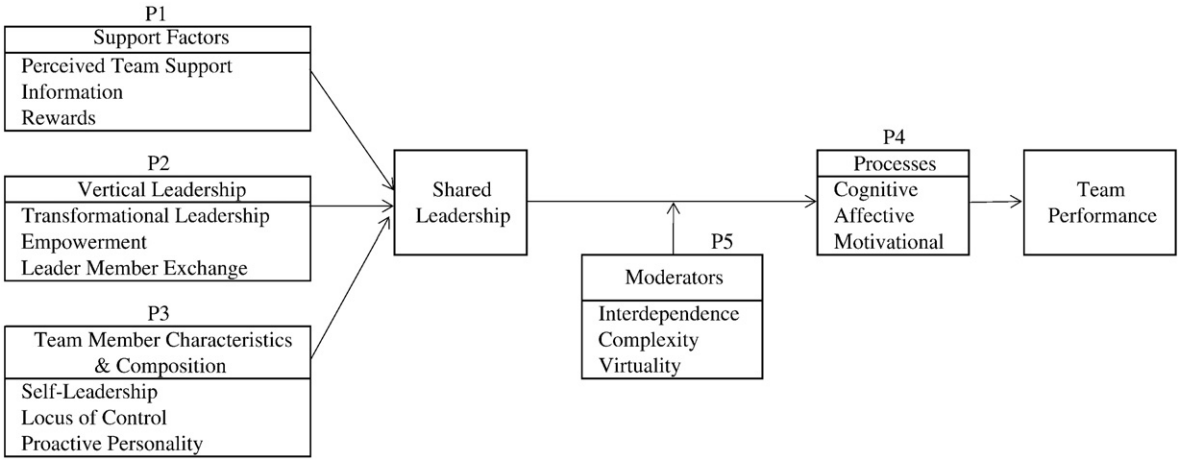

Fig. 1. Framework model of shared leadership.

2.4. Antecedents

2.4.1. Structural supports

As displayed in Fig. 1, the first group of antecedent factors is structural support that can impact the development of shared leadership. These factors include the level of perceived team support, rewards, and information. First perceived team support is an extension of perceived organizational support (POS), which is based on the notion of reciprocal attachment and posits that employees form a general perception regarding the extent to which their organization is committed to them and values their contributions and cares about their well-being (Eisenberger, Huntington, Hutchison, & Sowa, 1986). POS is expected to increase employees' felt obligation to help the organization. POS has been found in a number of studies to be positively related to organizational commitment, job satisfaction, in-role and extra-role performance, positive mood, desire to remain with the organization, and negatively related to turnover and withdrawal behaviors (Rhoades & Eisenberger, 2002).

POS has been extended to teams whereby scholars have described perceived team support (PTS) as the degree to which employees believe that their team values their contributions and cares for their well-being (Bishop, Scott, & Burroughs, 2000). Developing and engaging in shared leadership behaviors (including collaborative decision-making, shared responsibility for outcomes, and members leading each other toward the achievement of goals) is expected to be partially dependent on reciprocal attachment where team members feel that they are supported by their *other team members*, who are committed to them and who care about their well-being, and where they evince the same toward the other members (c.f., Bishop et al., 2000). Further, Carson et al. (2007) described social support and voice as two of the facilitating team environmental factors of shared leadership. PTS would include social support by team members as well as members feeling they have a voice among the other members. Consequently, we expect that PTS will be associated with the development and exercise of shared leadership by ERP/HRMS implementation teams.

Next, organizations can provide important resources to team members, such as information, resources and rewards (e.g., Burke et al., 2006; Fleishman et al., 1991) that encourage members to develop and engage in shared leadership. For team members to participate in shared leadership they need to have information that enables them to have a comprehensive understanding of their team's goals, how the specific tasks they and the other team members are working on fit into team goals, and how what they are doing fits into (and affects) the overall ERP/HRMS project goals and their team's performance. This would include understanding the ERP/HRMS project critical paths, project scheduling, and project processes. Further, information needs to be transparent and disseminated to the team, rather than horded by the external team leader, so that the members have a similar understanding as that of the formal leader and thus are able to participate in decision-making, lead each other, and take responsibility for team performance.

Next, rewards for team members need to be fair and from a psychological perspective they also should be under the control of the affected employees (Rynes & Gerhart, 2000; Van Herpen, Cools, & Van Praag, 2006). Fairness of reward systems, both in terms of procedural and distributive fairness, have been found to be associated with increased performance in teams and positive attitudes and behaviors such as commitment, work satisfaction, in-role performance, and reducing withdrawal behaviors (Colquitt, Conlon, Wesson, Porter, & Ng, 2001; Dulebohn & Martocchio, 1998). Kahai, Sosik, & Avolio (2003) investigated the impact of reward systems on creativity-relevant processes and team effectiveness and found that the use of individual rewards was superior, compared to team-based rewards, in achieving high team performance. Thus, based on the central role of compensation and pay fairness to employees, and on motivation and other attitudes and work-related behaviors, compensation needs to be administered in such a way that each team member is effectively rewarded for individual team performance and also shared leadership behaviors. Compensation adjustment is particularly

important in ERP/HRMS implementation teams, since employees from functional units are often assigned to participate on the teams, with roles that may require higher levels of responsibility. When team members continue to be compensated on the basis of their former individual job rather than the new role they play, such may result in perceptions of compensation incongruity and negative attitudes and behaviors (Dulebohn, 2003).

Proposition 1. *Structural supports including perceived team support, information, and rewards will be associated with the development and exercise of shared leadership in ERP/HRMS implementation teams.*

2.4.2. Vertical leadership

The second group of antecedent factors is the external team leaders' vertical leadership behaviors. Vertical or hierarchical leadership (Morgeson et al., 2010; Yukl, 2009) may be viewed as formal, external or internal, leadership behavior. Shared leadership, on the contrary, describes informal and internal leadership performed by the team members. Vertical leadership behavior comprises a number of behaviors that are expected to facilitate the development of shared leadership as scholars have argued that external team leaders can encourage shared leadership and that vertical leadership may serve as an antecedent of shared leadership (Cox et al., 2003; Carson et al., 2007; Pearce & Sims, 2002; Pearce et al., 2004). Pearce et al. (2003) argued that vertical leadership may exhibit behaviors that empower employees and this will encourage shared leadership. Similarly, Carson et al. (2007) found that external coaching is an important predictor of shared leadership. However, although some studies have supported this link, often research has juxtaposed these two forms (vertical and shared) of leadership (e.g., Lindgren, Packendorff, & Tham, 2011; Pearce & Sims, 2002).

In the present article we argue that team leaders can do several things in order to help or facilitate the development of shared leadership in teams such as those involved in ERP/HRMS implementation. First, leaders can engage in more personalized leadership behaviors. Personalized vertical leadership behaviors, such as transformational leadership and empowerment have the potential to encourage shared leadership development by stimulating a shared vision and shared goals (e.g., Kirkman, Rosen, Tesluk, & Gibson, 2004; Kouzes & Posner, 2009), creating goal interdependencies and increasing teamwork morale, preventing negative behaviors and encouraging team members to develop self-management skills (e.g., Manz, 1986; Pearce & Manz, 2005).

Transformational leadership, which includes leader behaviors such as articulating an appealing vision, behaving in a way consistent with that vision, and encouraging the acceptance of group goals (Kuhnert & Lewis, 1987), may create an environment that is conducive for the development of shared leadership. Transformational leadership behaviors are aimed at inspiring follower motivation and stimulating them to stretch their capabilities and to go beyond typical performance. Along this line, transformational leadership has been found to motivate people to go beyond self-interest and focus on group or organizational goals (Currie & Lockett, 2007; House & Baetz, 1979). In addition, transformational leadership has been shown to enhance positive team processes, such as collective efficacy (Bandura, 1997; Pillai & Williams, 2004), organizational citizenship behavior, a sense of belongingness among team members (e.g., De Cremer & van Knippenberg, 2002) and team reflexivity (Schippers, Den Hartog, Koopman, & van Knippenberg, 2008). Individuals tend to respond favorably to leaders who inspire and motivate them (Judge & Piccolo, 2004), and this positive reaction may elicit a desire on the part of followers to exert effort in participating in shared leadership behaviors.

Next, traditional leadership approaches are based on the premise that leader characteristics and behaviors directly influence follower attitudes and behaviors. This applies to the development of relationship quality, referred to as leader–member exchange (LMX), for which leaders are dominant in determining the level of quality. Leader–member exchange has been shown to contribute to a range of positive employee attitudes and behaviors (Dulebohn, Boomer, Liden, Brouer, & Ferris, in press). LMX theory has evolved to rely heavily on social exchange theory (Kamdar & Van Dyne, 2007). Low LMX relationships are characterized by economic exchange based on formally agreed on, immediate, and balanced reciprocation of tangible assets (Blau, 1964). In contrast, high-LMX relationships contribute to feelings of mutual obligation and reciprocity (Liden, Sparrowe, & Wayne, forthcoming). Work relationships built on social exchange, rather than economic exchange, are characterized by trust, loyalty, and commitment (Cropanzano & Mitchell, 2005). Consequently, we expect that if the relationship between the individual team leader and followers is characterized by these we believe that the supervisor will delegate or allow more development of shared leadership, because he/she may be less fearful about losing his or her own power. We therefore expect that high-LMX relationships developed by the team leader toward some or all of the members of the team, will contribute to the development of shared leadership and the willingness among ERP/HRMS implementation team members to develop and exercise shared leadership behaviors.

Third, leaders can facilitate shared leadership by empowering teams. Yukl and Becker (2006: 210) defined psychological empowerment in organizations as "the perception that workers can help determine their own work roles, accomplish meaningful work, and influence important decisions." Relatedly, Kirkman and Rosen (1997) defined team empowerment as consisting of four dimensions: potency, autonomy, meaningfulness and impact. Potency represents the team's collective belief that it can be effective (c.f., Conger & Kanungo, 1988; Thomas & Velthouse, 1990). Autonomy represents the degree that team members experience substantial independence and discretion in their work and are able to make decisions (Kirkman & Rosen, 1997). Meaningfulness represents the job characteristics construct at the team level whereby the team perceives its tasks as important and worthwhile. Impact is similar to task significance at the individual level of analysis whereby team members perceive their team's work as significant and important to the organization.

Leaders can empower team members and thus facilitate the development of shared leadership by providing them with them autonomy, support, increased responsibility, decision-making capabilities, and access to information, all of which should increase

perceptions of meaning, competence, self-determination, and impact (e.g., Andrews & Kacmar, 2001; Gomez & Rosen, 2001). Faraj and Sambamurthy (2006) found that empowering leadership played a significant role under conditions of high task uncertainty and high team member expertise in IS project teams and as noted, these characteristics apply to ERP/HRMS implementation teams. Empowerment and autonomy therefore are necessary pre-conditions for shared leadership to unfold. If team members or individual employees are not empowered to engage in leadership behaviors, this will negatively affect their participation in shared leadership. Thus, external leader efforts to empower members of ERP/HRMS implementation teams will contribute to the development and exercise of shared leadership by the team members, whereas a lack of empowerment and autonomy will hinder shared leadership among team members.

Proposition 2. *Different forms of vertical, hierarchical leadership such as transformational leadership, LMX, and empowerment will facilitate the development and exercise of shared leadership in ERP/HRMS implementation teams.*

2.4.3. Team member and team composition characteristics

As displayed in the model in Fig. 1, several team member and team composition characteristics are expected to be associated with shared leadership development. First, self-leadership is expected to be an antecedent of shared leadership. Self-leadership has been described as involving the influence people exert over themselves to achieve the self-motivation and self-direction needed to behave in desirable ways (Manz, 1986: 589), and as facilitating perceptions of control and responsibility which positively impact performance outcomes. Self-leadership represents a broad concept of self-influence that incorporates the behavior-focused strategies of self-regulation, self-control, and self-management; cognitive-oriented strategies based on intrinsic motivation; and social and positive cognitive psychology theories (Houghton & Neck, 2002).

There are three strategies associated with self-leadership: behavior-focused, natural reward, and constructive thought strategies (Manz & Neck, 2004; Neck & Houghton, 2006). Team members' self-leadership competencies have been examined with respect to their impact on teamwork (Neck & Houghton, 2006). It has been argued that team members who engage in the self-leadership strategies are more likely to develop and engage in shared leadership (e.g., Pearce & Manz, 2005). Therefore, we expect that self-leadership behaviors in ERP/HRMS implementation team members will facilitate their involvement in shared leadership.

Second, internal locus of control is expected to lead to the development and exercise of shared leadership in implementation teams. Internal locus of control represents a person's belief that control of behavior or outcomes resides primarily in oneself, whereas external locus of control refers to the conviction that control is outside of oneself (Rotter, 1966). Individuals with internal control orientation believe they have the capacity to influence their work setting and influence their interactions with others more than those with an external control orientation (Boone, Van Olffen, & Van Witteloostuijn, 2005; Phillips & Bedeian, 1994). This sense of control encourages internals to engage actively in their environments. Therefore, internals are more likely to attempt to make decisions and control performance through taking initiative than externals (Blau, 1993; Phillips & Bedeian, 1994). Further, Boone et al. (2005:892) found that teams with high homogeneity in locus of control performed better without a leader. Consequently, we expect that shared leadership behaviors will be facilitated by ERP/HRMS team member composition that has high homogeneity with respect to internal locus of control.

Third, we expect proactive personality to be an antecedent of shared leadership in ERP/HRMS implementation teams. Proactive personality refers to an individual's propensity to take actions, or pursue initiatives, to influence their environment (Bateman & Crant, 1993). It represents a personal disposition, or relatively stable tendency, to effect change and take personal initiative in a range of situations and activities (Brown, Cober, Kane, Levy, & Shalhoop, 2006). Bateman and Crant (1993) described a person who is high in proactive personality as one who identifies opportunities, shows personal initiative, identifies and solves problems, and perseveres in bring about change, and having an impact on, their surroundings. Individual differences exist in proactive personality and thus in individuals' propensity to be proactive in identifying and solving problems and to take it upon themselves to effect change. Thompson (2005) in his study of proactive personality and job performance concluded that such initiative taking appears to have a positive relationship to job performance. Kirkman and Rosen (1999) found proactive personality to relate to team outcomes such as productivity and satisfaction. Because of this, we expect that high levels of proactive personality will facilitate the development and exercise of shared leadership in ERP/HRMS implementation teams.

Proposition 3. *ERP/HRMS implementation team member characteristics and composition including self-leadership, internal locus of control, and proactive personality will be associated with the development and exercise of shared leadership.*

2.5. Mediating variables

In the IPO-I approach (Hackman, 1987; Ilgen, Hollenbeck, Johnson, & Jundt, 2005) leadership variables are considered in terms of input, team processes and emergent states are throughput, and team performance correlates are considered output. We consider shared leadership as an outcome of the antecedent variables described above as well as an input to team process and emergent states leading to team performance outcomes (see Fig. 1). The distinction and relationship between shared leadership and team processes needs to be clarified. Team processes basically described “emergent states” (Zaccaro et al., 2001). They are the

result of input factors, such as leadership and as such, are viewed as more passive, compared to what we usually define as leadership, and consequently shared leadership. Consequently, our present paper takes the view that team processes result from shared leadership.

Our expectation of shared leadership enhancing team performance is based on research that has found an association between shared leadership and team performance in a variety of teams. For example, Pearce and Sims (2002) reported a positive relationship between shared leadership and team performance in 51 change management teams and Ford and Seers (2006) found that shared leadership, measured in terms of team member exchange (TMX), was related to senior management team effectiveness. In addition, Ensley et al. (2006) investigated new venture top management teams and Künzle, Zala-Mezö, Kolbe, Wacker, and Grote (2010) examined anesthesia teams, and both of these studies reported that shared leadership was positively associated with performance in these domains. Finally, Hoch, Pearce, and Welzel (2010) documented that shared leadership leads to higher levels of team performance in consulting teams.

Based on this prior literature, we expect that shared leadership in ERP/HRMS implementation teams will be positively associated with team performance, but following Zaccaro et al. (2001) and the IPO approach, we expect shared leadership to influence team performance through its effect on team processes or emergent states: cognitive, affective, and motivational processes. When it comes to mediating factors, one study recently found that the role of positive affect, as an emerging state in the teams, explained (or mediated) the positive effects that shared leadership has on team outcomes (Hmieleski et al., in press). However, beyond the role of positive affect not much is known about the impact of other mediating variables, explaining shared leadership effects on team outcomes. Further, our expectation of the mediating effect of team processes is supported by Faraj and Sambamurthy's (2006) testing of a model of leadership in IS project teams which did not find a direct effect of empowering leadership on team performance, suggesting the value of including intervening variables.

First, shared leadership has been shown to enhance cognitive team processes, such as team mental models (SMM) and transactive memory systems (e.g., Solansky, 2008). Arguably, this is because a higher quality of shared leadership leads to improved communication, and leads to the sharing of distinct information, which helps shared mental models and transactive memory processes to unfold (Hoch et al., 2010). A number of researchers have found positive relations between shared mental models and transactive memory and team performance (Austin, 2003; Ellis, 2006). Based on the requirements of ERP/HRMS teams to share and integrate knowledge, the enhancement of cognitive team processes by shared leadership should be particularly relevant to these teams. Therefore, we expect:

Proposition 4a. *Shared leadership effects on team performance will be mediated by cognitive team processes and cognitive emergent states (e.g., shared mental models) in ERP/HRMS implementation teams.*

Second, affective processes refer to affect in the team. According to Zaccaro et al. (2001: 471), an important role of team leadership is to influence the "degree of affect in the team by fostering a climate where disagreements about team strategies can be aired constructively" or to control conflict. Within this context, cognitive conflict represents conflict among members that is task oriented and includes differences with regard to courses of action to achieve team goals this is considered healthy because it contributes to consideration of divergent perspectives (Zaccaro et al., 2001). Therefore, we expect shared leadership to contribute to the process of conflict control. Due to the responsibilities of IS project teams for integrating distributed expertise and the large amount of coordination required during the ERP/HRMS implementation process, conflict control should be particularly important for these teams (c.f., Faraj & Sambamurthy, 2006).

In addition, affective processes include well-being or positive affect which has been found to relate to a number of positive organizational outcomes at the individual level such as job performance and organizational citizenship behaviors and has been found to result from factors including positive relations with others, environmental mastery, social integration and social contribution, all of which should be fostered by shared leadership (Lyubomirsky, King, & Diener, 2005). It is expected that shared leadership will contribute to well-being or positive affect in team members. In turn, as research has demonstrated, positive affect or positive mood should lead, to higher levels of performance in organizational work teams (George, 1990). Therefore we expect that collective affective states will mediate the effects of shared leadership on ERP/HRMS team outcomes and therefore propose the following.

Proposition 4b. *Shared leadership effects on team performance will be mediated by affective team processes including cognitive conflict control and positive affect or well-being in ERP/HRMS implementation teams.*

Next, team outcomes are a result of team member motivation to work hard to achieve team goals and desired outcomes. This motivation results in part from group cohesion (Zaccaro et al., 2001) and group potency (Gully, Incalcaterra, Joshi, & Beaubien, 2002). Group cohesion refers to team members' attraction to the team and the level of member integration and commitment to each other and the team's purpose (Zaccaro et al., 2001). Zaccaro, Gualtieri, and Minionis (1995) found that teams that were high in cohesion had higher performance than those with low cohesion. Next, group potency refers to broad "perceptions of team capability spanning tasks and situations" (Gully et al., 2002: 819). Prior research has shown that traditional forms of leadership lead to an increase in group potency and a sense of mastery among the team members (Sivasubramaniam, Murry, Avolio, & Jung, 2002). Similar to traditional leadership resulting in these motivational processes in followers, we expect that shared leadership will result in these motivational processes (e.g., group cohesion and group potency) in ERP/HRMS implementation teams and subsequently team performance.

Proposition 4c. *Shared leadership effects on team performance will be mediated by motivational team processes including group cohesion and group potency in ERP/HRMS implementation teams.*

2.6. Moderating variables

Next Fig. 1 presents task interdependence, task complexity, and team virtuality as moderators between the shared leadership and team processes relationship. As mentioned above we assume that shared leadership is particularly relevant for ERP implementation teams, where team members perform interdependent, complex, and knowledge-based team work. Since these are gradual variables we expect that they will intensify the relationship between shared leadership and team processes. First, it has been argued that interdependence may increase the need to coordinate and exchange information and as such also intensify the effects of shared leadership on team processes and outcomes (e.g., Wageman & Gordon, 2005). While ERP/HRMS implementation teams are expected to be highly interdependent and work on high complexity tasks, teams may vary with respect to the level of interdependence and complexity depending on the different purposes of the teams involved in ERP/HRMS implementation (e.g., functional teams, technical teams, integration teams, project management team, ERP user training teams). Second, Pearce and Manz (2005) argued that both task interdependence and task complexity may foster a need for the sharing of leadership functions among team members (e.g., Pearce & Manz, 2005). Accordingly, we expect that these two elements of the task structure will moderate shared leadership effects, such that the shared leadership and team processes relationship will be stronger under high than under low task interdependence and task complexity. Taken together, we expect:

Proposition 5a. *Task interdependence and task complexity will moderate the effects of shared leadership on ERP/HRMS implementation team processes whereby shared leadership will exhibit stronger effects under higher levels of interdependence and task complexity than under lower levels of task interdependence and task complexity.*

Next, the degree of virtuality is expected to serve as a moderator as presented in Fig. 1. A basic component of virtuality is geographical dispersion (e.g., Bell & Kozlowski, 2003; Hinds & Kiesle, 2002; O'Leary & Cummings, 2007). When implementing organizational-wide projects such as ERP/HRMS, particularly in multinational companies or organizations with global sites or decentralized operations, ERP/HRMS implementation projects may have team members who are not co-located and who primarily interact electronically. Based on the frequency of distributed and dispersed ERP implementations, and organizational members being affected by the implementation, Anderson, Nilson, Rhodes, Kakade, Jenzer, King, et al. (2009) proposed an ERP virtual change model team (VCMT) with recommendations to manage virtual aspects of SAP ERP implementations.

Researchers have stated that virtual teams tend to be less hierarchical and have less centralized power structures than typical face-to-face teams or co-located work structures due to the geographic dispersion of team members, working at remote sites (Bell & Kozlowski, 2003; Oakley, 1999; Savage, 1996; Wong & Burton, 2000). These conditions of virtuality might moderate the shared leadership and team processes relationship. One of the facilitating factors of shared leadership is decentralized interaction among personnel (Wood, 2005). Also, implementation teams may be more or less virtual in terms of the degree to which the team members are not co-located. For the teams that are more virtual, the effects of shared leadership on team processes are expected to be stronger due to less hierarchical status and decentralization. Conversely, if teams are less virtual and are co-located, they may be more hierarchical and have more centralized power structures; shared leadership effects on team processes may be hindered. Thus, it is expected that the relationship between shared leadership on team processes relationship may be stronger in more, than in less, virtual ERP/HRMS teams.

Proposition 5b. *Team virtuality will moderate the effects of shared leadership on ERP/HRMS team processes and outcomes, such that shared leadership will have stronger effects at high rather than low levels of virtuality.*

3. Discussion

A primary issue with ERP/HRMS is the implementation teams that actually are the implementers of these complex software systems. While project managers (and the project management team that manage the implementation teams), often focus on technical and business issues, the teams involved in implementing these systems and the leadership of these teams represent a key consideration and critical success factor. The purpose of this paper has been to discuss the application of shared leadership to ERP/HRMS implementation teams as a way to enhance their effectiveness. Since shared leadership represents a relatively novel yet increasingly popular approach to team leadership, a need existed to summarize and integrate the literature and highlight its application to teams involved in critical projects such as ERP/HRMS implementation. This served as the rationale for this paper. Toward this end, we presented a framework that includes antecedents, mediators, moderators and outcomes of shared leadership in implementation teams.

The framework can be applied by organizations to facilitate the development and exercise of shared leadership in ERP/HRMS implementation teams. First, regarding the antecedent factors, three categories were presented: structural supports, vertical leadership, and team member characteristics and composition. Structural supports include perceived team support, information and rewards. Organizations have direct control over structural support factors, which were described as supporting or facilitating shared leadership among team members. For example, perceived team support can be augmented both by selection of members

who are team oriented along with organizational efforts to foster this type of supporting behavior. Organizations also can provide support by including appropriate rewards for team members and providing them with information necessary to share leadership.

Second, vertical leadership was described as facilitating shared leadership behaviors through transformational, empowerment, and LMX behaviors on the part of the leader. With respect to facilitating shared leadership among team members, the vertical leader is presented in our framework as central. Consequently, we recommend that organizations select ERP/HRMS implementation team leaders who are able to engage in, and/or be trained on, transformational leadership, leader–member exchange and empowerment behaviors.

The third category of antecedents presented in the integrative framework is team member characteristics and composition. An implication of role of self-leadership, internal locus of control orientation, and proactive personality is that organizations can select team members for ERP/HRMS implementation teams who rate high in these criteria. This represents a departure from common approaches to forming implementation teams, which may have a primary focus on functional and/or technical competency, without a concurrent consideration of characteristics that contribute to team effectiveness. Therefore, selecting team members who rate high in these three characteristics is expected to contribute to the facilitation and exercise of shared leadership in ERP/HRMS implementation teams.

The model also highlighted that the relationship of shared leadership and team outcomes is mediated by team processes: cognitive, affective, and motivational. Similar to the effects of traditional leadership on outcomes, as proposed by Zaccaro et al. (2001), we expect the effects of shared leadership on team outcomes to be through the effect of shared leadership on team processes. The discussion underscored the enhancing effect expected from shared leadership on these team processes. Consequently, prior to outcomes, such as team performance as measured by the achievement of project blueprint milestones, etc., organizations can assess the engagement in and influence of shared leadership by assessing the effect on these key team processes.

The proposed framework also highlighted the role of task independence, task complexity and virtuality as moderators of the shared leadership and team performance relationship. The moderating effects highlight the possible variation in the relationship between shared leadership and team processes for implementation teams. Consequently, the proposed effects of the three moderators highlight the possible differences that may occur in the effect of shared leadership on team processes. For example, those implementation teams with higher interdependency, task complexity, and/or virtuality are expected to show stronger effects of shared leadership on team processes than teams that are low on those factors.

4. Conclusion

Implementation team members represent the “worker-bees” and a critical success factor in ERP/HRMS implementation projects. These projects are very complex as well as often long in duration, spanning several years or more, and potentially involve geographical dispersion of team members. The teams play a critical role in determining whether the implementation will be a success or a failure. These teams are composed of highly skilled employees and knowledgeable workers who work on largely interdependent tasks that require cooperation, coordination, sharing of expertise, and decision-making. As such, shared leadership represents a high potential approach to enhance the effectiveness of these teams. The purpose of this paper has been to summarize the background and theory on shared leadership and describe its application to ERP/HRMS implementation teams. We encourage both the testing of the propositions presented, based on our ERP/HRMS implementation team shared leadership framework, as well as the application by organizations of shared leadership to their ERP/HRMS implementation teams.

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