



## Linking perceived external prestige and collective identification to collaborative behaviors in R&D teams

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### ABSTRACT

Research efforts have long been directed at understanding variations in collaborative behaviors among work teams with burgeoning interest in teams operating in knowledge-intensive settings. One of the largely unexplained issues is how does team image and collective identification facilitate collaborative behaviors. Here, survey data were collected from nineteen highly technical work teams engaging in software development in an R&D division of a multinational NASDAQ firm involved in multimedia communications and information processing technology. The relationships between perceived external prestige, collective team identification and team collaborative behaviors were examined. The results of the team-level analyses suggest that perceived external prestige augments collective team identification (measured at Time 1), which in turn engenders a high degree of collaboration and interaction within the team (measured at Time 2). When past team performance was controlled for, the results consistently supported the hypothesized model.

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### 1. Introduction

In high-velocity industries, a firm's competitive advantage often depends on its ability to rapidly introduce new quality products and services (Brown & Eisenhardt, 1995; Clark & Fujimoto, 1991) through the processes of developing, carrying, reacting to and modifying ideas (Van de Ven, 1986). The complex and difficult process of new product development (Sawyer & Guinan, 1998; Sheremata, 2000) is often executed by work teams (Ancona & Caldwell, 1990; Clark & Fujimoto, 1991; Doolen, Hacker, & Van Aken, 2003), which are "the heart of efficient product development" (Brown & Eisenhardt, 1995, p. 369).

The underlying assumption is that work teams can improve the functioning of an organization. However, firms also realize that designing and managing teams that work well together is a complex challenge (see Hackman, 1987, 1990). Research on work teams has highlighted the role of factors such as group diversity, familiarity, leadership, goal setting and motivation (for a review, see Guzzo & Dickson, 1996) and production methods (Sawyer & Guinan, 1998), but it has overlooked how team collaborative

behaviors (Hoegl & Gemuenden, 2001) and team social processes (Sawyer & Guinan, 1998) are facilitated. This is despite research which suggests teamwork process (Chi & Chen, 2009) marked by a high level of collaboration is vital as it allows team members to interact in such a way that facilitates knowledge acquisition, exchange and integration (Lee, Kim, & Koh, 2009; Zhuge, 2002). This is especially true for software development teams in which socially shared cognitive processes (i.e., coordinating expertise) are essential (Faraj & Sproull, 2000).

Member identification has mainly been conceptualized as an individual level construct (see Elsbach, 1999). However, recent research has provided evidence for the importance of studying members' shared sense of identification with a work group (i.e., a sense of collective team identification) (Van Der Vegt & Bunderson, 2005). Social identity theorists and organizational researchers have noted the importance of construed external image (Dukerich, Golden, & Shortell, 2002; Dutton, Dukerich, & Harquail, 1994) and perceived external prestige (Carmeli, 2005; Smidts, Pruyn, Van Riel, & Cees, 2001) in the development of member identification. However, these studies concentrated on the effects of the organization's construed image or prestige and called for a group level analysis of these constructs (Carmeli & Shteigman, 2010). Researchers have directed much effort to theorizing and conceptualizing member identification (Dutton et al., 1994; Elsbach, 1999; Pratt, 1998). Empirical studies have examined the impact of member identification at the individual level (Carmeli, 2005; Dukerich

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et al., 2002), but relatively little research has been done at the team level (Carmeli & Shteigman, 2010; Dimmock, Grove, & Eklund, 2005).

What follows is a study that attempts to theorize and empirically test how team perceived external prestige (the way team members think outsiders [i.e., other teams] view and evaluate their team) helps develop a sense of collective team identification and facilitates collaborative behaviors among R&D team members. Members are likely to develop a shared sense of identification with their work group when they believe outsiders (i.e., other teams in the same organization) favorably evaluate the work group to which they belong. We attempt to extend the Dukerich et al. (2002) model of member identification by (1) investigating the construct of perceived external prestige, which is distinct from the concept of construed external image; (2) applying a group level analysis rather than an individual level construct, and (3) examining how team collaborative behaviors are facilitated using a social identity approach.

We argue that collective team identification is a prime motivational source for team members to interact and collaborate with one another and act as a team. We suggest a social identity process that facilitates the development of collective team identification and collaborative behaviors in the context of highly technical software product development teams working in R&D divisions of a multinational corporation that competes in a high-velocity arena.

## 2. Theoretical background and hypotheses

### 2.1. Collaborative team behaviors

Drawing on Alderfer (1977), Hackman (1987), and Katzenbach and Smith (1993), a *work team* is defined as a social system that is made up of individuals who see themselves and who are seen by others as a social entity, who are interdependent because of the tasks they perform as members of a group, who are embedded in one or more larger social systems (e.g., a community, work group), and who perform tasks that affect others (such as customers or coworkers) (Guzzo & Dickson, 1996, pp. 308–309).

Building high-performance work teams is a major managerial challenge. A widely embraced answer is to foster team collaborative behaviors, particularly in teams engaging in the development of advanced technological products (Hoegl & Gemuenden, 2001). Consistent with Hoegl and Gemuenden's (2001) research, we focus on the quality of interactions and collaboration between members of a work team. In particular, six collaborative behaviors (communication, coordination, balance of member contributions, mutual support, effort and cohesion) are examined. These collaborative behaviors are defined below.

*Team communication* refers to the frequency, formalization, structure and openness of communication among team members that enable them to share and exchange valuable information with each other (Hoegl & Gemuenden, 2001). *Team coordination* refers to team-situated interactions (Faraj & Sproull, 2000, p. 1555) and the degree to which these interactions are structured and synchronized within the team (Hoegl & Gemuenden, 2001). *Balance of member contribution* refers to the extent to which a member's contribution is adjusted to ensure that each member can introduce her/his ideas and views and avoids situations where some members dominate the team in a way that disrupts this balance (Hoegl & Gemuenden, 2001). *Mutual support* is about the degree to which members of a work team help one another and develop a sense of accountability for each other. Mutual support is a key indicator of collaborative behavior as it entails a cooperative pattern rather than a competitive frame of mind (Hoegl & Gemuenden, 2001). The work of teams is inherently interdependent; hence

competition is less productive than mutual support (Hoegl & Gemuenden, 2001; Tjosvold, 1995). *Team effort* refers to the extent to which team members exert their utmost efforts to accomplish their assigned tasks efficiently and effectively, and is "primary to the quality of collaboration" (Hoegl & Gemuenden, 2001, p. 438). *Team cohesion* refers to the degree to which team members are attracted to the team and want to remain part of it (Hoegl & Gemuenden, 2001; Shaw, 1981).

### 2.2. Collective team identification

Social identity theory (Abrams, 1992; Abrams & Hogg, 1990; Kramer, 1991, 1993; Mael & Ashforth, 1992; Tajfel, 1982; Tajfel & Turner, 1985; Turner, 1982) suggests that individuals develop self-conceptions *inter alia* through their affiliation or connection with particular social groups. *Social identification* is defined as the "perception of belongingness to a group classification" by which "an individual perceives him or herself as an actual or symbolic member of the group" (e.g., "I am a man", "I am a biologist") (Mael & Ashforth, 1992, p. 104). Social identification refers to the "perception of oneness with or belongingness to some human aggregation" (Ashforth and Mael, 1989, p. 21), enabling an individual to define her or his self-image and conception (i.e., "Who am I?") (see Elsbach, 1999; Mael & Ashforth, 1992; Pratt, 1998; Tyler & Blader, 2000).

In addition, social identity theorists view social identification as an individual-level construct captured by "individual-level self-perceptions describing the perceived overlap between a person's identity and a group's identity" (Elsbach, 1999, p. 165). However, recent studies dealing with group-level phenomena have adopted a modified conceptualization at the group level, stressing collective team identification, which refers to members' shared sense of identification with a work group (Van Der Veegt & Bunderson, 2005). Van Der Veegt and Bunderson define collective team identification as "the emotional significance that members of a given group attach to their membership in that group" (2005, p. 533). Our definition is consistent with Van Der Veegt and Bunderson's (2005) approach in that we refer to members' shared sense of identification, but it also differs as it incorporates both cognitive and affective attitudinal components. In this regard, we are not concerned with an individual member's sense of identification but rather the members' shared (collective) sense of identification. Thus, we define collective team identification as members' shared sense of cognitive and affective identification with a work team.

### 2.3. Perceived team external prestige

Members' identification is influenced by the images they attribute and think others attribute to their social aggregate (Dutton et al., 1994). Distinct yet related constructs include construed external image (Dutton et al., 1994) and perceived external prestige (Smidts et al., 2001). *Construed external image* is the employee's own beliefs about what other people outside the social group such as customers, competitors and suppliers think about it (Dutton et al., 1994). *Perceived external prestige* implies a judgment or evaluation of the social group's status according to some kind of criteria, and refers to the employee's own beliefs about how other people outside the social group, such as customers, competitors and suppliers, judge its status and prestige (see Carmeli, 2005). Similar to our collective team identification, we examined the team's collective perceived external prestige, a construct that represents the set of beliefs employees share about how other people outside the team (but within the organization) judge the team's prestige.

In the following sub-sections, we develop the research hypotheses. In light of growing research interest in accounting for

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