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The effect of radical innovation in/congruence on new product performance

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ABSTRACT

Radical innovation is critical for many firms and for society. This research focuses on the impact of radical innovation congruence — the degree to which management values regarding radical innovation match radical innovation norms in the business unit. We offer a model and empirically test it to assess the impact of radical innovation congruence on new product performance. We find that radical innovation norms are positively associated with new product performance, whereas we find no such association for management values and new product performance. Contrary to our expectations, we did not find a significant effect of radical innovation congruence on new product performance; however, we did find that radical innovation *in*congruence can have a positive effect on new product performance but only when radical innovation norms are higher than management values. Thus, we suggest that the unintended situation of radical innovation incongruence may result in some positive consequences after all. Further, high radical innovation norms, far more than management values, seem to be critical determinants of new product performance.

1. Introduction

Although relatively rare, radical innovation is at the heart of wealth creation for many firms and for society (Höyssä & Hyysalo, 2009; Kirchhoff, 1991; Story, O'Malley, & Hart, 2011). As such, radical innovation is a priority for some—though not all—firms, with the hope that radical innovativeness leads them to success. Prior research has focused primarily on the impact of radical innovation outcomes on new product success and firm performance (e.g., Chandy & Tellis, 2000; Han, Kim, & Srivastava, 1998; Sorescu, Chandy, & Prabhu, 2003; Sorescu & Spanjol, 2008). The main goal of this paper is to explore the effect of an understudied construct – radical innovation congruence – on firms' new product performance. Specifically, our unit of analysis is the business unit.

We define radical innovation congruence as the degree of correspondence between management values regarding radical innovation in the firm and radical innovation norms of the firm. Both management values regarding radical innovation and radical innovation norms are perceived constructs, and radical innovation congruence relates to whether these perceived constructs are aligned. In reality, congruence represents the views of managers and employees in a firm. We measure it in this research accordingly. We define management values regarding radical innovation as the vision top management endorses and the anticipation it sets regarding radical innovation in the firm. Finally, we define radical innovation norms as a set of behaviors concerning radical innovation that employees and low- or mid-level management expect. Note that whereas the management level develops values, all employee levels in the firm develop norms and expect behavior in accordance with those norms. Setting the radical innovation values that are appropriate for the firm and then effectively disseminating those values are critical tasks for managers. These values may translate into norms (McNally, Durmusoglu, Calantone, & Harmancioglu, 2009; Slotegraaf & Dickson, 2004). Setting and disseminating values become especially important in the case of radical innovation where resources are critical to the development process (Carmona-Lavado, Cuevas-Rodríguez, & Cabello-Medina, 2010; Sorescu et al., 2003).

The literature recognizes the importance of congruence between different functions of the firm and the effect such congruence has on innovation (e.g., Colbert, Kristof-Brown, Bradley, & Barrick, 2008; Prabhu, Chandy, & Ellis, 2005). Moreover, the literature recognizes that an imbalance between radical innovation-related cultural aspects, such as

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values and norms, may be frequent and that it is likely to have negative organizational consequences (Colbert et al., 2008; Green, Covin, & Slevin, 2008; Moorman & Rust, 1999). Indeed, some firms' management may have a predominant mental model of focusing efforts on a small set of highly innovative new products (Höyssä & Hyysalo, 2009). Management values regarding radical innovation may be difficult to realize, particularly when firms do not have the resources or market power to both develop and launch such innovations (Baker & Sinkula, 2005; Chandy & Tellis, 2000). At the opposite end of the spectrum, other firms may have highly skilled marketing and R&D functions but a conservative management that is hesitant or unwilling to pursue radical innovation (Christensen & Bower, 1996; Tripsas & Gavetti, 2000). In both of these scenarios, considerable incongruence is present between the values of top management and the norms in functions of the firm. Such incongruence is likely to have a meaningful effect on firm performance. Still, despite the importance of such in/congruence, this effect has not been systematically studied.

In this context, prior research has focused on outside-in drivers of innovation, such as market orientation, or inside-out drivers of innovation, such as effective learning (Day, 1994). Previous research demonstrates the positive relationship between the cultural aspects of radical innovation in the firm, such as values and norms, and innovation-related performance (e.g., Stock, Six, & Zacharias, 2013; see also Baker & Sinkula, 2005, 2007). The primary contribution of the current research is the examination of the effect of congruence between radical innovation values and norms, above and beyond the effect of other central cultural aspects, such as market orientation, on new product performance of the firm. High congruence between radical innovation values and radical innovation norms is often the result of a deliberate firm effort. Conversely, high incongruence between radical innovation values and radical innovation norms is often unintended and undesired. These consequences of congruence or incongruence are likely to affect firm innovation performance. Moreover, in many cases, employees and low or mid-level managers do not appropriately disseminate radical innovation values that top management endorses. This scenario is even more likely in cases where the organizational structure is complex or in cases where the firm has a number of subunits. Indeed, prior research found that information flow inside firms might be limited especially when multiple units are involved (e.g., Tsai, 2001).

The paper is organized as follows. We commence with a review of relevant literature on radical innovation and radical innovation congruence. We develop our set of hypotheses and then present the empirical work based on a study of 236 US-based companies. We conclude with the discussion of findings, their limitations, and avenues for future research.

2. Conceptual framework and hypothesized relationships

In this section, we present our conceptual framework and hypotheses. We first develop basic hypotheses regarding the impact of management's radical innovation values and of radical innovation norms on new product performance. We then develop a set of hypotheses regarding the effect of in/congruence between radical innovation values and norms on new product performance.

Values and norms are both components of organizational culture (Berson, Oreg, & Dvir, 2008). As such, they can form the identity of either an entire organization or a business unit (De Brentani & Kleinschmidt, 2004). Despite the strong connection between them, values and norms are distinct, as we elaborate on later.

2.1. The importance of radical innovation

Prior research acknowledges that radically innovative firms have an advantage over less radically innovative firms. Radically innovative firms have greater value, stronger market power, and they are likely to be more profitable (Baker & Sinkula, 2007; Chandy & Tellis, 2000; Sorescu et al., 2003). In a meta-analysis, Henard and Szymanksi (2001) also found radical innovation to be positively associated with new product success, and evidence suggests that high innovativeness enhances firm performance (e.g., Coad & Rao, 2008; Han et al., 1998; Hult, Hurley, & Knight, 2004). Empirical research has also found that firms with a specific focus on radical innovation can reap substantial benefits. For example, Kim and Mauborgne (1997) found that firms' radical innovations are responsible for only 38% of their revenues yet are responsible for 61% of their profits. Also, firms committed to radical innovation are typically more highly valued in financial markets (Lee, Smith, Grimm, & Schomburg, 2000; Sorescu et al., 2003).

2.2. Management values regarding radical innovation

Radical innovation values consist of an innovativeness ideology that prioritizes some behaviors over others in order to promote innovation performance (Stock et al., 2013). Management values are behavioral patterns that the firm's top management attempts to disseminate within the firm as desired (Berson et al., 2008; Schein, 1990). As such, values are intangible and tend to be abstract and represent aspects of the firm's culture (Schein, 1990; Stock et al., 2013). Top management attempts to disseminate its values to employees as a way of molding their behavior and directing the firm according to management values (Enz, 1988). Accordingly, research suggests that management values have important implications for an innovation culture and overall performance (Berson et al., 2008). Prior research has found that values and managerial approaches are positively associated with firm performance (e.g., De Brentani & Kleinschmidt, 2004) and specifically with innovation-related performance. For example, Moorman (1995) suggests that management values are cultural antecedents of information processes, and as such, they affect innovation and new product performance. Deshpandé, Farley, and Webster (1993) find that management values are strongly associated with innovativeness. We expect this effect of management values in the context of innovation performance for the following reasons. First, management values affect the type of outcomes the firm seeks (Moorman, 1995). Management values that focus on radical innovation, for example, dictate firm objectives that reflect the desire to develop radical innovation, and objectives are strong determinants of performance (Thompson, Strickland, & Gamble, 2010). Second, management values determine the means to achieve objectives. Such means may include the structure of the organization, resource allocation, market orientation, execution of processes, and so forth (e.g., Deshpandé et al., 1993; Moorman, 1995), all of which contribute to innovation performance. Third, management values dictate data collection and information processing that are strongly linked to innovation performance (Moorman & Miner, 1997; Sinkula, Baker, & Noordewier, 1997). Fourth, management values affect the development of core capabilities that enable and facilitate new product performance (Leonard-Barton, 1992; Thompson et al., 2010). The above arguments and empirical findings in prior literature suggest the following:

H1. Management values regarding radical innovation in the firm are positively related to the firm's new product performance.

2.3. Radical innovation norms

Values and norms are distinct organizational constructs. Whereas values reflect the desired, which influences the selection from available modes, means, and ends of action, norms reflect a higher degree of specificity and a higher relevance for actual behavior (Homburg & Pflesser, 2000). One expects a causal relationship between values and norms, and a connection between those and innovation-related performance (e.g., Deshpandé & Webster, 1989; Stock et al., 2013). Indeed, norms are concrete expressions of the more ambiguous values and they stem from values (Katz & Kahn, 1978). This reasoning is also in line with the Theory of Planned Behavior, according to which basic values and