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Innovation-supportive culture: The impact of organizational values on process innovation

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Abstract

For managers, innovation is vital, but paradoxical, requiring flexibility and empowerment, as well as control and efficiency. Increasingly, studies stress organizational culture as a key to managing innovation. Yet innovation-supportive culture remains an intricate and amorphous phenomenon. In response, we explore how organizational values – a foundational building block of culture – impact a particular process innovation, the implementation of advanced manufacturing technology (AMT). To unpack this scarcely studied construct, we examine three-dimensions of organizational values: value profiles, value congruence and value–practice interactions.
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1. Introduction

Innovation offers a critical source of sustainable competitive advantage. Indeed, Christensen (1999) describes the management of innovation – in its many forms – as an overriding responsibility of today's managers. Product innovation, for instance, entails developing new goods and services. Managing such innovation may help firms meet or even drive changing market demands. Likewise, process innovation involves creating or improving methods of production, service or administrative operations. Effective process innovation may enhance organizational efficiency and responsiveness (Damanpour and Gopalakrishnan, 2001).

Despite its promised potential, however, innovation poses tremendous challenges. For example, innovation efforts may be highly disruptive, altering relationships across functional and occupational boundaries or requiring changes to the organizational structure and climate (Baer and Frese, 2003; Black et al., 2004; Detert et al., 2000; McDermott and Stock, 1999). Paradoxes of innovation may pose even more fundamental and less understood challenges (Lewis et al., 2002). As Dougherty (1996) explains, successful innovation requires managing flexibility-control tensions. Flexibility enables creativity, empowerment and change vital for the

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exploration that fuels innovation. Control, on the other hand, provides discipline, focusing innovation initiatives, for instance, on achieving long-term goals, leveraging core competencies, and meeting budgets. As such, innovation paradoxes may foster mixed messages and role ambiguity that adversely affect performance.

Studies increasingly tout organizational culture as a key to managing innovation. Jassawalla and Sashittal (2002) define an *innovation-supportive culture* as a firm's ''social and cognitive environment, the shared view of reality, and the collective belief and value systems reflected in a consistent pattern of behaviors among participants'' (2002: 43). They propose that culture may provide an overarching frame of reference, helping align employee behavior with organizational objectives of innovation and meet paradoxical demands for control and flexibility. Yet researchers stress that innovation-supportive culture remains an intricate and amorphous phenomenon (e.g., Frohman, 1998; Higgins and McAllaster, 2002). In their review, Detert et al. (2000) argue that the complexity of accumulating theories of culture is matched by a dearth of corresponding empirical research. They conclude by calling for studies that investigate specific components of innovation-supportive culture and their impact.

In response, this study explores organizational values, a foundational building block of innovation-supportive culture that has received scant attention in empirical research. To unpack this phenomenon, we examine three-dimensions of organizational values. First, we examine the role of *value profiles*, clusters of interwoven values representing paradoxical orientations of flexibility or control (Quinn and Rohrbaugh, 1983). Second, *value congruence* refers to the extent to which there is an agreement or consensus about organizational values amongst organizational members (Chatman, 1989; Kalliath et al., 1999). Value congruence draws attention to the importance of common goals and consistent expectations for firm performance (Deal and Kennedy, 1982; Peters and Waterman, 1982). Lastly, *value–practice interactions* address consistency between organizational values and practices, drawing attention to the potential for mixed messages (e.g., Argyris and Schön, 1974) in an innovation-supportive culture. In sum, this study seeks to contribute an expanded understanding of how values may affect innovation.

To enable focus, we explore a particular context of process innovation: the implementation of advanced manufacturing technology (AMT). AMT represents ''a range of programmable machinery that execute,

monitor and connect the production process, including computer-aided manufacturing, flexible manufacturing systems, and computer numerically controlled machines'' (Lewis and Boyer, 2002: 111). Given its computerization, AMT often marks a dramatic change from mechanized technologies and manual operations. Process innovation occurs throughout implementation and beyond—from initial AMT adoption, through system design and programming, to use and continuing improvement within the manufacturing plant.

This process innovation offers potential insights for two primary reasons. First, like many cases of innovation, AMT holds great, but often-untapped potential. Since the 1970s, AMT has been praised for its ability to enhance plant performance by improving production quality, efficiency and responsiveness (Hayes et al., 1988). Yet reports find that only 25–50% of implementations live up to expectations (Cleland et al., 1995), with researchers often blaming a lack of supportive culture (e.g., Bates et al., 1995; Lewis, 1998). Second, AMT research stresses the flexibility-control tensions reflected in wider innovation literature (Adler, 1993). Successful implementation requires flexibility for operators to explore, debug and customize the technology in use. Yet control remains critical. Clear management objectives, for instance, help guide implementation and continuous improvement to ensure that the AMT adds value (Kern and Schumann, 1992).

Manufacturing plants serve as the unit of analysis. The plant level reduces the impact of technological heterogeneity and matches the locus of innovation, as implementation – from initial adoption through debugging and ongoing use – occurs within a plant or final home of the AMT (Dean et al., 1992). Furthermore, when studying culture, staying close to the phenomena is vital (Hofstede et al., 1990). The distance between values espoused at corporate headquarters and those perceived on a factory floor exacerbates the potential for value incongruence and confounding variables that reduce meaningfulness of findings.

2. Literature review and hypotheses

Although conceptualizations vary, organizational culture is defined broadly as a collection of values, beliefs and norms shared by its members and reflected in organizational practices and goals (Hofstede et al., 1990). Applying this definition, Jassawalla and Sashittal (2002) further describe innovation-supportive cultures