

# ISO 9000 practices and financial performance: A technology coherence perspective

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## Abstract

Attention to processes has increased, as thousands of organizations have adopted process-focused programs such as TQM and ISO 9000. Proponents of such programs stress the promise of improved efficiency and profitability. But research has not consistently borne out these prospects. Moreover, the expectation of universal benefits is not consistent with research highlighting the important role of firm-specific capabilities in sustaining competitive advantage. In this paper, we use longitudinal panel data on ISO 9000 practices for firms in the auto supplier industry to study two new issues related to the adoption of process management practices. First, we find that, as the majority of firms within an industry adopt ISO 9000, late adopters no longer gain financial benefits from these practices. Second, we explore how firms' technological coherence moderates the performance advantages of ISO 9000 practices. We find that firms that have a very narrow or very broad technological focus have fewer opportunities for complementary interactions that arise from process management practices and thus benefit less than those with limited breadth in technologically related activities.

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## 1. Introduction

A central question in strategy is: How do firms achieve sustainable competitive advantage? Research is often aimed at assessing whether particular organizational practices can deliver sustainable advantages, especially given that other firms can also adopt similar

practices. Practices aimed at improving operational effectiveness may benefit adopting firms for a time, but if a firm's competitors can all adopt the same practice, the benefits will be competed away (Porter, 1996). Firms are then frustrated in their efforts to translate performance improvements into relative financial performance advantage. If a generic "best practice" can be copied and equally benefit all potential adopters, it cannot confer lasting benefits (e.g. Lieberman and Montgomery, 1988; Porter and Siggelkow, 2004; Levinthal, 2000). However, if an organizational practice is firm-specific, valuable, and difficult to imitate, it may lead to sustainable competitive advantage (cf. Barney, 1991; Peteraf, 1993).

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Research in strategy, in particular, in the Resource-Based View, has increasingly focused on the central role of firm-specific, unique, and inimitable capabilities in creating competitive advantage (e.g. Peteraf, 1993; Barney, 1991). Organizational routines or processes have emerged as critical building blocks in these difficult-to-imitate capabilities (e.g. Teece et al., 1997; Dosi et al., 2000; Eisenhardt and Martin, 2000). At the same time, a focus on organizational routines and processes has increased in managerial practice. Thousands of firms have embraced the process-focused practices that underlie a progression of popular quality improvement programs, including Total Quality Management (TQM), Business Process Reengineering, the Malcolm Baldrige Award Criteria, and more recently, the ISO 9000 certification program and Six Sigma (e.g. Staw and Epstein, 2000; Garvin, 1991, 1995; Cole, 1998; ISO, 2007). While these programs differ in scope and approach, they share a core focus on systematic attention to operational processes in organizations, and involve mapping, improving, and adhering to systems of repeatable processes (Hackman and Wageman, 1995; Benner and Tushman, 2002).

Proponents of process management practices cite expectations of improved quality and efficiency, leading to increased revenue, reduced costs, and ultimately, higher profits (e.g. Winter, 1994; Garvin, 1995; Hammer and Champy, 1993; Harry and Schroeder, 2000), and these expectations are also reflected in most empirical research on the performance implications of process management practices (e.g. Easton and Jarrell, 1998; Corbett et al., 2005; Ittner and Larcker, 1997). However, despite the widespread assumption that organizations will benefit from process management, the findings from research have been equivocal. While some research demonstrates the anticipated financial advantages (e.g. Easton and Jarrell, 1998; Corbett et al., 2005; Hendricks and Singhal, 1997), other research has not found better business performance associated with the actual process-focused techniques (e.g. Powell, 1995; Staw and Epstein, 2000; Terziovski et al., 1997; Samson and Terziovski, 1999). Still other research has found that the effects dissipate over time (Wayhan et al., 2002; Casadesus and Karapetrovic, 2005).

One explanation for these contrasting results, which has not been considered in previous research, is that the financial performance advantages that may accrue to early adopters can disappear for the later ones, as more firms in an industry adopt and achieve similar generic improvements in efficiency and quality. Indeed, process management programs often have been viewed as generic improvement practices that are easily adopted

by all firms (e.g. Hammer and Champy, 1993; Harry and Schroeder, 2000; Pande et al., 2000). In that case, even as firms improve their own operational efficiency, it will be increasingly difficult to translate these improvements into sustainable relative financial performance advantages over time as firms within an industry increasingly adopt identical practices and achieve similar reductions in cost, improvements in quality, or access to new customers (cf. Porter, 1996; Lieberman and Montgomery, 1988).

However, generic organizational improvement practices may confer lasting benefits if they interact with firm-specific routines and give rise to unique capabilities that are difficult to imitate. Since process management implementation is aimed directly at organization-specific processes and capabilities, and in particular, at streamlining processes and the handoffs between processes across an organization, process management practices affect the potential for firms' capabilities to lead to competitive advantage. Specifically, by tightening the linkages between unique organizational processes, process management practices can increase the "fit" or complementarities among organizational activities (cf. Siggelkow, 2002). Thus, the potential for process management to lead to competitive advantage will differ across firms, depending on firm-specific characteristics. In line with existing perspectives in manufacturing strategy (White, 1996; Miller and Roth, 1994), some research looking at process management has also begun to recognize that the impact of process management practices may depend on firm characteristics (e.g. Benson et al., 1991; Das et al., 2000; Sousa, 2003; Ettl, 1997; see also Sousa and Voss, 2002 for a recent review of research on quality improvement). However, research has not provided consistent analyses of how the interaction with a firm's technological coherence, i.e. the narrowness or breadth of a firm's technologies, affects the financial performance benefits of process management practices.

In this paper, we go beyond prior research, drawing from strategy and organization theory literature to better understand how competitive advantage arises for firms adopting process management practices. We study the ISO 9000 quality certification program, a set of process-focused practices which became increasingly popular and were widely adopted by organizations throughout the 1990s. We explore two questions that have not been addressed in previous studies. First, we ask what happens to the financial performance benefits of firms following the adoption of the process-focused practices associated with ISO 9000 as the majority of competitors

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