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Quality mental model convergence and business performance

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ABSTRACT

Firms can focus on increasing customer satisfaction and retention (revenue emphasis) and/or on decreasing costs (cost emphasis) when managing quality to achieve better business performance. Although previous research has shown the superiority of a revenue emphasis for maximizing the return on a company's quality efforts, research has not yet examined how a revenue emphasis is adopted in firms. This paper adopts a cognitive approach to strategy and examines managers' mental models—their belief systems—to understand that adoption process. Using a longitudinal, multi-level study, we surveyed managers at two points in time to collect information about their individual ("I believe…") and their divisions' collective ("We believe…") revenue and cost mental models for managing quality. Our research shows that the collective revenue emphasis converges toward the individual revenue emphasis over time, while the individual cost emphasis converges toward the collective cost emphasis. We show that this revenue emphasis convergence is related to improved business performance, but cost emphasis convergence is not.

1. Introduction

Doing things better can improve a firm's financial performance in various ways. On the one hand, doing things well can increase revenues. For example, a car that is better engineered might be more valuable to customers who are willing to pay a higher price. A skillful attorney can attract more clients and a user-friendly website can increase online orders. On the other hand, doing things better might also reduce costs. More precision and efficiency can produce the same output using fewer inputs while also reducing re-work and complaints. Doing things better or well is often referred to as *quality*, and it has been called the most important aspect of business strategy (Golder, Mitra, & Moorman, 2012). Companies focus on quality because they believe that it will improve their business performance.

The marketing literature provides evidence that increasing quality by satisfying customers more effectively can improve business performance by increasing revenues (Kamakura, Mittal, de Rosa, & Mazzon, 2002; Rust, Zahorik, & Keiningham, 1995). Literatures in such fields as operations and engineering similarly show that increasing quality by improving efficiency can improve business performance by reducing costs (Breyfogle, 2003), although too much emphasis on cost reduction can have a harmful effect on customer satisfaction (Bharadwaj & Roggeveen, 2008; Rust & Huang, 2012). These two approaches to quality are often viewed as opposites, in that the former looks outward toward customers and the latter looks inward toward the company's internal processes. In manufacturing, the two approaches are often in harmony, as better manufacturing processes produce better

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Table 1
Quality mental models: types and levels.

	Revenue mental model	Cost mental model
Individual mental model	*Individual revenue mental model* is a manager's belief that quality should be managed to achieve customer satisfaction and retention.	*Individual cost mental model* is a manager's belief that quality should be managed to reduce costs.
Collective mental model	*Collective revenue mental model* is an organization's belief that quality should be managed to achieve customer satisfaction and retention.	*Collective cost mental model* is an organization's belief that quality should be managed to reduce costs.

goods at a lower cost through business process improvements (Deming, 1986). In service, however, the two approaches are often at odds, as satisfying customers better usually costs more (Anderson, Fornell, & Rust, 1997). With service becoming a larger part of every developed economy in the world, this increasingly implies a tradeoff.

Thus, quality has two paths, and managers must choose which of the two (or both) to follow. Consistent with these ideas, Rust, Moorman, and Dickson (2002) identify alternative strategic emphases firms can use in managing quality—a revenue emphasis, a cost emphasis, and a dual emphasis (which combines the revenue and cost emphases). In the *revenue emphasis* to managing quality, the firm increases quality in ways that are perceived and valued by the customer with the goals of greater customer acquisition, satisfaction, loyalty, and firm revenues as the means to higher profits. For example, United Airlines installed flat sleeper seats in most of its international business class cabins to improve the quality experienced by its most valuable customers.

In the *cost emphasis* to managing quality, the firm increases quality in ways that improve internal firm efficiency with the goal of reducing costs as the means to higher profits. For example, many companies replaced customer service call centers with automated phone systems that answer calls more cheaply. A cost emphasis, if successful, may also allow companies the option to lower prices, and hence increase unit sales, which might also increase revenues (e.g., Walmart's strategy). However, this is often a side benefit, as the primary focus is improvement of internal firm criteria, such as efficiency and productivity, not customer criteria.

The *dual emphasis* to managing quality tries to expand revenues and to reduce costs simultaneously. Rust et al. (2002) offer evidence that a revenue emphasis to managing quality produces the best business performance. Mittal, Anderson, Sayrak, and Tadikamalla (2005), by contrast, show that firms can achieve performance improvements if they implement a dual emphasis successfully over the long-term. However, as noted by Rust et al. (2002), very few firms are capable of doing both emphases well given the distinctive organizational systems, structure, and cultural underpinnings of the revenue and cost emphases.

Marketing appears to have embraced the idea that the customer should be central to most quality initiatives in companies. In their integrative framework, Golder et al. (2012) describe a set of quality processes, including quality production, quality experience, and quality evaluation that place the value of quality squarely at the customer-firm interface (see their Fig. 1). At the same time, this idea is not well understood in terms of *how* organizations achieve this perspective. In other words, our externally-facing view of quality is less well understood in terms of its organizational underpinnings. There are many ways to attack this problem as evinced by the array of approaches taken to the study of marketing organizations in our literature. We adopt an approach from the *cognitive approach to strategy* that focuses on the belief systems or mental models within the organization (e.g., Daft & Weick, 1984; Day & Nedungadi, 1994; Frankwick, Ward, Hutt, & Reingen, 1994; Kaplan, 2008, 2011; Porac, Thomas, Wilson, Paton, & Kanfer, 1995; Rosa, Porac, Runser-Spanjol, & Saxton, 1999; Tripsas & Gavetti, 2000; Walsh, 1995; Weick, 1995).

From the perspective of this approach, the quality emphasis of an individual manager may be different from the organization's quality emphasis. Consistent with this idea, we separate mental models residing at the individual manager level ("I believe…") from those held at the collective level across managers ("We believe…"). Combining these two levels with the revenue and cost emphases to managing quality noted earlier, we derive four different types of quality mental models. As summarized in Table 1, an *individual revenue (cost) mental model* is a manager's belief that quality should be managed to achieve customer satisfaction and retention (to reduce costs) and a *collective revenue (cost) mental model* is an organization's belief that quality should be managed to achieve customer satisfaction and retention (to reduce costs).

We study how these mental models change as a firm adopts a revenue emphasis or cost emphasis to managing quality and the performance implications of these changes. This may be thought of as involving organizational learning (March, 1991). Following the call of Kozlowski and Chao (2012) to research convergence processes by using quantitative analysis in a dynamic framework, we address these research topics using a longitudinal, multi-level study of the adoption of quality mental models within companies. We survey managers at two points in time three years apart about their own individual and their business units' collective revenue and cost mental models. The three year time gap was selected to be long enough to ensure that real organizational change could occur, but short enough that many of the managers in the first-wave survey might still be on the job, and able to respond to the second-wave survey.

Over time the individual revenue (cost) emphases and collective revenue (cost) emphases may converge, indicating that the individual managers and the collective organization are aligning with respect to how quality should be managed. We show that this convergence tends to occur systematically along two key lines—the collective revenue emphasis converges toward the individual revenue emphasis and the individual cost emphasis converges toward the collective cost emphasis. Further, we show that this type of revenue emphasis convergence leads to better business performance, while cost emphasis convergence does not. These