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ScienceDirect
Journal of Operations Management 26 (2008) 426–445
JOURNAL OF OPERATIONS MANAGEMENT
www.elsevier.com/locate/jom

How motivation, opportunity, and ability drive knowledge sharing: The constraining-factor model

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Received 10 January 2007; received in revised form 2 August 2007; accepted 13 September 2007
Available online 19 September 2007

Abstract

We introduce and empirically test a theoretical metamodel that explains knowledge-sharing behavior among employees. Building on the well-established motivation–opportunity–ability (MOA) framework, we posit that knowledge sharing among employees is a function of their MOA to do so. Existing literature suggests that the interaction among motivation, opportunity, and ability drives knowledge-sharing behavior. In contrast, we specify a new model in which the ''bottleneck'' or constraining factor among the MOA variables determines the degree of knowledge sharing that occurs. This constraining-factor model (CFM) fits the data better than the traditional multiplicative model and reveals a new, qualitatively different portrait of knowledge sharing that resolves some of the puzzles in the previous literature. The CFM provides macro-level insights with respect to how operations managers can improve employee knowledge sharing by focusing on the bottleneck MOA variable. As a result, the CFM can help set strategic directions of related policies. The model emphasizes that, counter to conventional wisdom, the MOA variables should not be addressed independently, but rather in a dynamic and coordinated way.

Keywords: Knowledge sharing; MOA framework; Constraining-factor model; Bottleneck; Behavioral operations

1. Introduction

The notion of resource constraints has been extensively investigated in the operations management (OM) literature, in part because the identification of constraints enables managers to plan more effective interventions. Bottleneck analysis, for example, identifies constraining resources in a process, so that the capacity of the process can be increased by adding capacity at the bottleneck (Chase et al., 2004). Critical path analysis identifies the set of activities taking the longest time in a project, so that the project can be shortened by crashing activities on the critical path. Although OM-based knowledge of physical resource and time constraints is extensive, much less is understood about how behavioral constraints act in OM contexts. Yet, such constraints can severely limit the effectiveness of managerial interventions (Boudreau et al., 2003). For example, process improvement and just-in-time (JIT) programs can be fruitless without the full participation and motivation of employees (Hackman and Wageman, 1995; Shah and Ward, 2003). Similarly, behavioral responses can offset the advantages of worker flexibility programs (Schultz et al., 2003; Siemsen et al., 2007a).

In this study, we present a metamodel that can be used to identify behavioral constraints, and we

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doi:10.1016/j.jom.2007.09.001

empirically test this meta-model within the operational context of inter-employee knowledge sharing. Our research provides a way of conceptually and empirically identifying and addressing such behavioral constraints. The foundation for our research is the well-known motivation–opportunity–ability (MOA) framework, which has been applied in various management disciplines. Broadly speaking, motivation captures the individual's willingness to act; opportunity represents the environmental or contextual mechanisms that enable action. Ability represents the individual's skills or knowledge base related to the action (Rothschild, 1999). Providing a novel perspective, our research posits that it is the constraining factor among these three MOA variables that ultimately determines behavior. Thus, changes in motivation only affect behavior and outcomes if motivation is the constraining factor; they have little or no impact if either opportunity or ability is constraining. We develop a new modeling approach, which we call the ''constraining factor model'' (CFM), that embodies this bottleneck perspective. We then empirically test this model's ability to explain knowledge-sharing behavior and evaluate how the CFM performs compared to alternative, existing specifications of the MOA framework in the literature.

Our study focuses on the specific context of one-way employee knowledge sharing in a dyadic work relationship. There are four reasons for choosing this context. First, OM researchers have emphasized the importance of better understanding the dissemination of operational know-how and learning (Hayes et al., 1988; Leonard-Barton, 1992; Roth et al., 1994; Roth, 1996; Mukherjee et al., 1998; Ferdows, 2006). Previous studies have highlighted that employees on the shop floor do not always share their knowledge with their peers (Aeppel, 2002), which makes this context particularly interesting to OM. Second, practitioners have employed many different approaches to the management of knowledge in their organizations (Hansen et al., 1999), but approaches that neglect behavioral constraints are not always successful (Dixon, 2000). Third, existing research has questioned the role of motivation in knowledge sharing (Szulanski, 1996). The CFM enables us to clearly state under what conditions motivation plays less of a role in promoting employee knowledge sharing, thereby clarifying conflicting perspectives in the literature. Finally, the perceptions of individual employees about their intentions to share work-related knowledge with a coworker can be considered a primary building block in this area. Practically speaking, it is usually only known to the employee whether or not she chooses not to share. Even in cases where an employee attempts to share, it is not always clear whether the coworker involved always picks up the knowledge being shared. Arguably, understanding the barriers to an individual's propensity to share knowledge is an important, but understudied area in OM.

To illustrate the managerial implications of our research, consider the following three real life examples of knowledge-sharing initiatives. A large public utility was facing a brain drain, as the old guard of engineers was close to retiring. There was a generational gap between these experienced engineers and the junior employees that were hired to replace them. Operations, quality and human resource managers attempted to increase knowledge sharing between the experienced workers and the new recruits, but were stymied. Due to the urgency of the situation, a corporate initiative was put into place to consider what knowledge management initiatives should be prioritized. Should they focus on training, on changing their incentive system, or on providing the time and infrastructure for knowledge sharing to occur? Clearly, the corporate management team needed a guiding framework and empirical data to further their strategic planning process and set directions. Our research provided the firm with both the framework and concrete suggestions that were employed in their strategy.

Consider a second example. A management consultancy suffered from high employee turnover. The partners felt that their organization constantly generated and lost important knowledge. To address this situation, they implemented a large-scale corporate intranet, providing instant intranet access for consultants to document and share the lessons they learned from projects. Further, the company employed communication and information experts to help consultants document their knowledge. However, when the system went online, consultants only contributed knowledge of little importance. Even though the system provided an easy opportunity to share knowledge, and experts were readily available to support consultants who lacked the ability to codify their knowledge, the consultants simply had little motivation to share their important knowledge with a broader community. Thus, the managerial intervention did not address the real behavioral bottleneck, resulting in overall failure.

The third example has a slightly different context, and pertains to a credit union that desired to improve its overall customer satisfaction levels. Customer satisfaction ratings had reached a plateau at 85%. The former CEO spent precious resources trying to motivate tellers, loan officers, and customer service representatives with