Journal of Operations Management 44 (2016) 48–61

Contents lists available at ScienceDirect

Journal of Operations Management

journal homepage: www.elsevier.com/locate/jom

The appointment of chief supply chain officers to top management teams: A contingency model of firm-level antecedents and consequences

Joseph Roh [a, *], Ryan Krause [b], Morgan Swink [a]

[a] Department of Information Systems and Supply Chain Management, Neeley School of Business, Texas Christian University, Fort Worth, TX 76129, USA
[b] Department of Management, Entrepreneurship and Leadership, Neeley School of Business, Texas Christian University, Fort Worth, TX 76129, USA

ARTICLE INFO

Article history:
Received 11 September 2015
Received in revised form
2 May 2016
Accepted 4 May 2016
Available online 11 May 2016
Handling Editor: Mikko Ketokivi

Keywords:
Chief supply chain officer (CSCO)
Top management team (TMT)
Functional executive
Integration and differentiation tension
Contingency theory
Mimetic isomorphism

ABSTRACT

This study investigates the recent emergence of Chief Supply Chain Officers (CSCOs). Drawing on contingency theory, we analyze firm-level antecedents and consequences associated with CSCOs being appointed to top management teams (TMTs). We conceptually develop the role of CSCOs and hypothesize that CSCOs are most likely to be appointed to TMTs at firms where supply chain-related integration and differentiation pressures are high. The results from a matched sample of S&P 1500 firms over a 21-year period reveal that financial leverage, internationalization, and diversification all predict CSCO appointment to the TMT. Our results also suggest that these same contingencies positively moderate the effect of CSCO presence on firm performance, with CSCOs proving beneficial when leverage, internationalization, and diversification levels are high, but detrimental when leverage, internationalization, and diversification are low. In addition, we find post-hoc evidence that suggests institutional forces may also be a factor in CSCO appointments. Our results reveal that most of the contingency performance effects manifest only for early adopters of the CSCO role, suggesting that late-mover elevation of the supply chain function to the TMT is a form of mimetic isomorphism. This study extends research on CSCOs and their emergence in TMTs, as well as the role of operations management in corporate strategy.

1. Introduction

More and more firms are appointing chief supply chain officers (CSCO) to their top management teams (TMT) (Hendricks et al., 2014). Recent research indicates that the number of CSCOs in large firms more than doubled in several industries between 2004 and 2009 (Wagner and Kemmerling, 2014). This emerging phenomenon is noteworthy, given that just a decade ago supply chain executives "rarely reported directly to the CEO; [and] the function was somewhat removed from the concerns of top management" (Groysberg et al., 2011, p. 66). The increase in CSCO appointments appears consistent with the claims of both early and recent operations management researchers, who argue that operations capabilities are crucial sources of competitive advantage in many corporations (Skinner, 1969, 2007; Hayes and Wheelwright, 1984; Wheelwright, 1984; Krause et al., 2014) and that operations executives should play active roles in strategic decision-making (Papke-Shields and Malhotra, 2001; Swamidass and Newell, 1987; Hayes and Wheelwright 1984; Demeester et al., 2014). Though these assertions originally referenced manufacturing operations, they are easily extended to the broader view of operations that dominates current research and practice, the management of *supply chain operations*. Indeed, the growth of CSCOs mirrors the manifest increases in outsourcing over the last few decades, along with the rising importance of procurement, distribution, and planning functions that span corporate boundaries. Along with manufacturing (if it is still in-sourced), these functions comprise strategically critical operations for corporations today.

In light of the rising number of CSCO appointments and the growing importance of CSCO roles (e.g., Kador, 2012; Sigismondi, 2011), more research on CSCOs is needed. To our knowledge, Wagner and Kemmerling's (2014) work is currently the only academic study to specifically focus on CSCOs. Wagner and Kemmerling (2014) investigate differences in CSCO presence across industries, TMT attributes that predict CSCO presence (e.g.,

* Corresponding author.
E-mail addresses: Joe.Roh@tcu.edu (J. Roh), R.Krause@tcu.edu (R. Krause), M.Swink@tcu.edu (M. Swink).

http://dx.doi.org/10.1016/j.jom.2016.05.001
0272-6963/

supply chain experience), and the effects of CSCO presence on firm performance. Despite Wagner and Kemmerling's (2014) contributions, much remains unknown about CSCOs and how they impact their firms. In particular, Wagner and Kemmerling's (2014: 164) finding that CSCO presence is negatively associated with firm performance prompted them to assert that "the CSCO presence-performance link might be more multi-faceted," raising the question of which circumstances might turn the relationship positive. Understanding the organizational factors associated with CSCO appointments, as well as those that alter the relationship between CSCO appointments and performance, may provide insights into the perceived needs and functions of the CSCO role, and suggest how operations management can shape corporate strategy, thus laying a foundation for subsequent research (Hayes, 1984; Skinner, 1969; Wheelwright, 1984).

To address some of the remaining knowledge gaps regarding CSCOs, we draw on contingency theory to develop hypotheses describing the organizational contexts in which a firm is more likely to appoint a CSCO to its TMT, as well as the contexts in which CSCO appointment is likely to lead to superior performance outcomes. We propose three firm-level factors—financial leverage, internationalization, and diversification—that increase the firm's need for both integration and differentiation across subunits, and we argue that CSCO appointment to the TMT achieves strategic fit when these factors are present. Because contingency theory implies that context will influence both an organization's structural choices and the performance consequences of those choices, we predict that leverage, internationalization, and diversification will increase the likelihood that CSCOs are appointed to TMTs *and* positively moderate the effect of CSCO presence at firms that chose to appoint a CSCO to the TMT. We analyze data from a 21-year sample of publicly held firms to test support for the hypotheses. The results provide empirical support for both the antecedent and consequence sides of the contingency model. Finally, in a post-hoc analysis, we find that most of the hypothesized performance effects are stronger for early adopters of the CSCO position, indicating that institutional factors may play increasing roles in later adoptions.

The present research makes a number of contributions. First, our study's conceptual foundation may assist practitioners in developing a rationale for designing CSCO roles for their firms. Second, the results of the study may inform the decision of when, or if, to establish a CSCO position on the TMT. Interestingly, the factors shown to be important in this study appear to be unique; several have failed to be shown relevant to the appointments of other functional TMT members (e.g., COOs and CMOs). Third, our theorizing and empirical examination of antecedents and consequences of CSCO appointments provide substantial implications for future research. Our study demonstrates the usefulness of contingency theory in aiding understanding of the phenomenon. In doing so, the study provides a theoretical grounding for early writers' views of the role and impact of operational leadership in the corporation, which included rich discussions of "contingencies" such as corporate orientation, diversification, and culture, though they were not formally identified as such (Skinner, 1969; Wheelwright, 1984). Our findings identify significant moderators, and point to additional factors that might also serve as important contingencies for the effects of operational leadership on corporate performance. Overall, this study adds understanding to a topic that has long been written about in operations management, but rarely studied empirically. It also more specifically adds to the limited research on CSCOs and their emergence in TMTs, research that is likely to grow as CSCOs become increasingly common.

2. Background and theory

2.1. What do CSCOs do and why are they needed?

Seminal works by Skinner (1969) and Wheelwright (1984) offer a number of useful assertions and definitions regarding the role of operations management in corporate strategy. Both authors forcefully argue that manufacturing leadership is critical to the overall direction and success of the corporation. In doing so, they define certain strategic choices (e.g., Wheelwright's "dominant orientation" and "diversification") that characterize a firm, and influence its view of the importance of operations leaders in creating competitive advantage. Wheelwright (1984) further defines a "corporate manufacturing strategy" in terms of structural and resource-oriented decisions that are either consistent or differentiated across business units within the corporation. In his view, manufacturing necessarily plays a strong role in the creation of competitive advantage, first because as a function it controls most of the resources, structures, and capabilities that either support or impede strategic initiatives and objectives. Secondly, manufacturing is a major "keeper" of the corporate philosophy that guides behaviors and serves to define strategy (Wheelwright, 1984, p. 89).

During the 1960s-1980s, the manufacturing strategy paradigm flourished in the era of factory-centric business models (Womack et al., 2007). Over time, however, significant manufacturing capabilities were outsourced as access to global markets increased and business models evolved. In turn, the need for manufacturing workers sharply declined (Baily and Bosworth, 2014). Although the manufacturing sector's employment accounted for almost 30% of the U.S. labor market in 1960, "at the turn of the new millennium, U.S. manufacturing employment, at 14.8%, had decreased below the levels of when it was first officially measured" (Czinkota, 2003, p. 510). The net effect of globalization, outsourcing, and changing business models was that manufacturing executives controlled fewer resources and senior people representing manufacturing operations on TMTs were gradually eliminated from the highest senior ranks (Womack et al., 2007).

Though Skinner and Wheelwright made their assertions with reference to manufacturing, the same arguments apply to the management of the broader operational mission of a firm, today known as supply chain operations management. For the reasons noted above (e.g., globalization, outsourcing), the concept of supply chain operations management has supplanted earlier, more myopic concepts of operations management (Swink et al., 2013), thus giving rise to the growing prevalence of supply chain management executives who participate as members of TMTs. Today's top-tier operations managers appear to be playing strong roles in the creation of competitive advantage, as Skinner and Wheelwright had envisioned. "CSCOs increasingly control 50% or more of a company's annual spending, with two thirds of all employees directly reporting to the role. More important, CSCOs have begun to play a vital role in strategy development, product and service innovation, and even sales." (O'Marah, 2016, p. 65). Anecdotal evidence suggests that supply chain executives are rising to TMT ranks, heading business units, and even eventually reaching the level of CEO. Notable examples include Tim Cook at Apple, Mary Barra at General Motors, Brian Krzanich at Intel, Fabian Garcia at Revlon, Beth Ford at Land O'Lakes, Pier Luigi Sigismondi at Unilever, Sonia Syngal at Gap, and Gerry Smith at Lenovo (O'Marah, 2016).

Mentzer et al. (2008; p. 41) were among the first to discuss the potential for TMT-level leadership of the supply chain function, suggesting that future organizational structures would recognize "a new cross-organization level operations manager called a Chief Supply Chain Officer (CSCO) with broad responsibility for the