



## Improving services supply management in the defense sector: How the procurement process affects B2B service quality



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### ABSTRACT

Organizational buyers struggle with the effective management of business-to-business (B2B) services, yet little research has examined specifically how the procurement process impacts the supplier's level of delivered service quality. Based on a sample of 216 buyers of services, this study uses structural equation modeling to examine the relationships between service quality and its determinants. The results suggest that the sufficiency of the requirement definition and communication between the buyer and supplier are associated with B2B service quality, but that monitoring the supplier is not. Additionally, the internal customer's level of commitment to the procurement and the sufficiency of the allotted procurement lead time affect how sufficiently the buyer defines the requirement for the supplier. The internal customer's commitment also affects the amount of monitoring of and communication with the supplier. The study's findings have implications for integrating unified service theory with service-dominant logic; since service quality increases service value, these findings add fidelity to S-D Logic by unveiling specifically how to co-create value with the supplier. Two novel constructs are introduced to supply chain management discourse—sufficiency of the requirement definition and sufficiency of procurement lead time. Furthermore, a new measure of B2B service quality is offered. From these results, implications for practice and theory are drawn. The study concludes with a discussion of limitations and promising directions for future research.

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### 1. Introduction

Services supply chains (SSCs) have become a cornerstone of the world economy (Global Services Coalition, 2013). Services now account for 70% of the world's gross domestic product (GDP) (Gresser, 2012). In the United States, services constitute 80% of GDP and employ 80% of the country's workforce (Gresser, 2012). As the demand for services has rapidly increased, so have the demands on those who source and manage service providers. Industrial buyers report greater difficulty buying business services than goods (Van der Valk and Rozemeijer, 2009), and for services, more difficulty in controlling quality levels, more difficulty

evaluating quality, more difficulty managing service personnel, and more difficulty managing time, exemplified by the process of synchronizing the resources required for service delivery with the time of consumption (Lovell and Wirtz, 2007).

Compounding the additional difficulties endemic to services supply management, studies reveal that supply management seriously lags – and sometimes plays no role in – SSCs for private industry (Ellram and Tate, in press). Purchased business services now account for a substantial portion of a firm's total purchases (Axelsson and Wynstra, 2002) and contribute to a buyer's competitive advantage and innovation (Levina and Su, 2008; Koch and Strotmann, 2008), yet resources dedicated to managing procured services in private industry have not kept pace with growth in their demand (Ellram et al., 2007). This suggests a situation of compromised outcomes for purchased business services. For supply managers to change this situation, they need more knowledge regarding how to apply supply management resources to business services and what factors lead to supply management's meaningful involvement in services supply management (Ellram and Tate, in press).

Private supply managers can learn from those in public procurement. Whereas private services supply management is

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often dominated by the user who is the co-creator of the service (Lusch et al., 2010), public services procurement represents an area where supply management's involvement has long been mandated (Ellram and Tate, in press). This study responds to the call to compare how success is measured in public vs. private services supply management, most especially with regard to supply management involvement earlier in the purchasing decision making process (Ellram and Tate, in press). Once discovered, leaders in supply management can more effectively allocate resources towards those factors that have a greater impact on service quality and avoid the inefficient attention to those factors that have little or no impact. From a theoretical perspective, the proposition that the buyer's sourcing process can affect the supplier's delivered service quality has not been explored. This study represents a first step: it identifies and measures factors determining services supply management success in public procurement. Doing so required reconciling insights from several outstanding services theories into a relevant framework such as unified services theory (UST), which sharply distinguishes service from non-service processes (Sampson and Spring, 2012), and service-dominant logic (S-D Logic), which asserts that all firms fundamentally engage in services (Lusch et al., 2010). This study tests UST's ability to serve a unifying role in the diverse service management research.

The remainder of this work is organized as follows. First, the study discusses the conceptual framework and proposed hypotheses. Next, the study presents the research design and methodology. Then, the study provides an analysis of the proposed model and reports the findings. Lastly, the study offers a summary discussion, including conclusions and implications. The study's contributions relate to the proposition that the buyer's sourcing process can affect the supplier's delivered service quality. Extant literature provides much guidance prescribing supply management strategies and describing supplier selection methodologies, but currently little empirical evidence or theoretical explanation exist for how the procurement process facilitates delivered service quality. This study suggests that for services supply management that supply managers should reconsider the accepted traditional, linear procurement process model.

## 2. Theoretical framework

A large body of empirical evidence indicates that service quality has a large effect on customer satisfaction, attitudinal loyalty, and purchase intention (see the meta-analysis by Carrillat et al., 2009). The findings stretching back decades have prompted research that predominantly falls into these major areas: explaining business competitive advantage (e.g., service-dominant logic, core competencies, resource-based view, knowledge-based view), measuring service effectiveness at the dyadic level (e.g., SERVQUAL, SERVPERF), and designing/managing service operations (e.g., unified service theory, service-process matrix, utility-based service design). Respectively, these bodies of knowledge provide explanatory power as a "theory of the firm", measuring the outcomes of interactions between businesses, and managing the service process at the firm level. Individually these bodies of knowledge provide important theoretical and practical insights at the macro, meso, and micro levels.

We have adopted a systems-level, holistic approach to reconcile insights across theoretical domains. The current approach to SSC theory relies essentially on linear thinking and summation of insights between theories with little recognition of services as existing in a complex, open system of nested processes and interactions. For example, Sampson et al. (2010) published what amounts to a criticism of S-D Logic's inability to explain micro-level service operations management processes compared to UST while acknowledging S-D Logic's macro-explanatory power as a "theory of the firm". While the comparison acknowledges that each theory explains a different

level of aggregation for supply chain phenomena, the comparison missed the opportunity to explain how UST's process-level insights lead to S-D Logic's predicted outcomes, or how S-D Logic's propositions explain (or not) the environment in which UST's prescriptive abilities work.

We interpret such missed opportunities to indicate a need for a macro-meso-micro framework relating the different levels of explanations to each other. Works relating micro-level factors to network-level factors remain rare but important in the supply chain literature (e.g., Frohlich and Westbrook, 2001). Recent work shows an interest by researchers in confirming the positive relationship of supply management involvement on operating performance, quality, and other outcomes (e.g., Hartley et al., 2014). To the best of our knowledge, no framework incorporates supply chain theories based on different levels of aggregation in the supply chain, and no work has addressed supply management's influence across the supply chain network in the context of services.

A macro-meso-micro framework facilitates analysis of complex systems that are emergent and dynamic in nature (cf., Dopfer et al., 2004). Macro-level outcomes represent the aggregation of the self-ordering and self-organizational properties that occur at the meso-level. Meso-level represents a rule plus its population, with many populations of meso units aggregating to comprise the macro-level. The meso-level represents the space where individual actors shape organization-level outcomes, which has been called an unexplored area of purchasing research (Reunis et al., 2004). The micro level describes a single generic rule plus its individual carrier or enactor. A graphical representation of the macro-meso-micro framework for this paper appears in Fig. 1.

Past supply management research has focused on macro and meso-level theories embodied by strategies and techniques. Missing from the dialogue is an explanation of the role of micro-level individual actors in services supply management. Extant research focuses on supply management as a rational process with the minimization of reliance on individual actors (cf., Kaufmann et al., 2012). However, services supply management presents a unique set of circumstances that highlight the importance of the individual actor. Because value is defined by the service receiver in a joint-creation process (Lusch and Vargo, 2006), it adapts and evolves over time (Sampson and Spring, 2012), leading to an interaction between the service provider and the recipient that is idiosyncratic and laden with embedded meaning (Ellram and Tate, in press). Additionally, the joint value creation process often leads to close interactions that generate stronger feelings of loyalty and personal relationships (Ellram and Tate, in press). All of these insights justify further explication of the interplay of micro with meso and macro level processes.

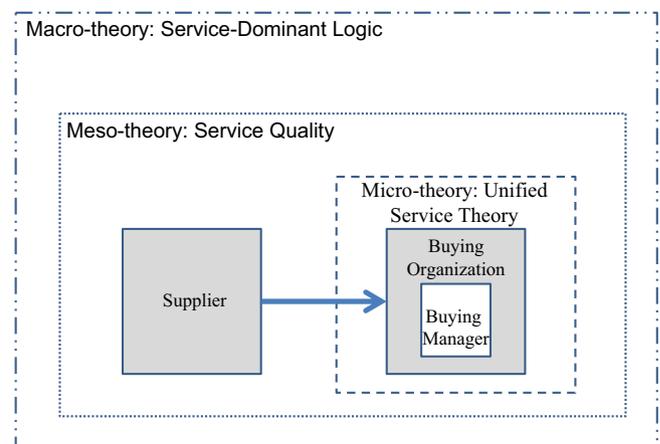


Fig. 1. Micro-meso-macro framework for services supply management.

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