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The impact of sourcing enterprise system use and work process interdependence on sourcing professionals' job outcomes

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ABSTRACT

We examine sourcing professionals' work context to conceptualize how they use sourcing enterprise systems (SESs) and to understand when SES use results in positive/negative job outcomes. We differentiate between SES use for supplier selection and supplier governance, identify sourcing professionals' work process interdependence as a moderator for the impacts of SES use on job satisfaction, and suggest job satisfaction mediates the impacts of SES use on job performance. We conducted a field study of sourcing professionals' SES use at one of the largest consumer product companies in the United States, which has implemented an SES to innovate its sourcing professionals' work processes. Based on our analysis of the survey and qualitative data we collected, we found the impacts of both types of SES use (1) to be negative on job satisfaction when work process interdependence was high, (2) to be positive on job satisfaction when work process interdependence was low, and (3) to be mediated by job satisfaction for job performance. We discuss the implications of our findings for the literature at the intersection of information systems and operations management as well as for the information technology enabled innovation of sourcing processes and, more generally, complex business processes.

1. Introduction

Responding to the expectation that an organization's purchasing function aligns with business strategy and assumes responsibility for an expanding set of supplier management considerations (e.g., cost reduction, risk management, product/service innovation), many organizations are expanding their purchasing process to a procurement process that encompasses both strategic sourcing *and* transactional purchasing (Hult and Chabowski, 2008; Simchi-Levi et al., 2003; Wouters et al., 2009). Although the transactional orientation that has characterized a purchasing process adopts a narrow focus on price-based supplier selection and efficiency in purchase order execution, the strategic orientation of sourcing requires shifting to a process with a more complex set of considerations, such as the total cost of ownership (which is influenced by a variety of factors, including cost, quality, lead times, and tax credits), the role of suppliers in innovation, and the risk of lock-in and holdup in bargaining (Narasimhan et al., 2009). As a result, organizations like Georgia-Pacific ("GP P2P," 2008), Colgate-Palmolive ("Global Procurement," 2013), and Royal Mail ("Royal Mail," 2013) have established sourcing functions and defined roles for sourcing professionals whose core responsibilities are identifying/selecting suppliers based on market analysis and sourcing requirements as well as governing a portfolio of suppliers.

Consequently, sourcing professionals are challenged to identify/select suppliers by collecting, integrating, and analyzing both internal and external information pertaining to suppliers and to govern a portfolio of supplier relationships for goods/services. Given the diversity in types of buyer-supplier relationships in a buyer firm's supplier portfolio, sourcing professionals are now using not only a transactional governance approach focusing on prices, service levels, and detailed contracts but also a relational governance approach focusing on close collaboration, learning, and mutual commitment (Rai and Tang, 2010). Although transactional governance is effective for executing purchasing and, more broadly, for sourcing well-defined requirements in competitive markets (e.g., commodities), relational governance is likely to be effective for sourcing complex goods/services whose requirements cannot be completely specified and require supplier collaboration for new product development and value co-creation (Gattiker et al., 2007; Im and Rai, 2008; Rai et al., 2012, MISQ). While there are important differences between sourcing and purchasing, sourcing professionals' work processes continue to be (1) entrenched in the legacy of purchasing and its transactional orientation and (2) supported by piecemeal information technology (IT) solutions and shadow

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systems that have been incorporated over time to extend IT support beyond the IT solutions that were implemented to support purchasing activities (e.g., order placement, order tracking, settlement, returns management).

In response to the above constraints in sourcing professionals' work processes, organizations are introducing sourcing enterprise systems (SESs)—a class of enterprise systems used to establish an integrated process for initiating sourcing projects, documenting sourcing requirements, acquiring and integrating supplier information from internal and external sources, comparing suppliers, and governing supplier relationships ("SAP Sourcing," 2013). SESs introduced by leading IT vendors (e.g., SAP and Ariba) are designed to provide an integrated sourcing process and also to integrate with enterprise resource planning systems, IT systems for purchasing activities (e.g., order fulfillment, payment, and settlement), and electronic intermediaries in different supply markets. The design intent of SESs' is to innovate sourcing professionals' work processes by expanding the quantity and quality of sourcing-related information and structuring how suppliers are selected and governed.

However, because of the lack of research investigating sourcing professionals' SES use and the resulting impacts on job outcomes in different work contexts, there is limited understanding of how SESs need to be leveraged to innovate the sourcing process. As Hult and Chabowski's (2008) review of sourcing research revealed, the investigative focus was (1) on dyadic buyer–supplier relationships and the firm's supply chain (including the role of IT in enabling supply chain coordination and countering the bullwhip effect) from 1998 to 2002 and (2) on external issues (e.g., channel profitability/competitiveness) and internal issues (e.g., management processes/systems) from 2003 to 2007. With IT innovations – such as SESs – creating opportunities to redefine work processes and develop novel operational capabilities, Hult and Chabowski (2008) have identified the need to understand how users' acceptance of information systems (ISs) can be combined with the capabilities approach such that "information systems no longer hinder a company's performance within the context of sourcing, but instead become a primary mechanism for profitability in the entire value chain" (p. 332). To develop this understanding, we need to examine the use and impact of SESs not only at a higher level of analysis (e.g., organization or the business process) but also at the level of individual sourcing professionals and their work processes.

We identify the gaps in our understanding of sourcing professionals' SES use and the resulting job outcomes by examining the relevant literatures on (1) sourcing and behavioral operations (e.g., Bendoly and Schoenherr, 2005; Gattiker et al., 2007; Narasimhan et al., 2009; Schoenherr and Mabert, 2011; Wouters et al., 2009); (2) IS success, particularly the impacts of IS use on individual benefits (e.g., Delone and McLean, 2003; Morris and Venkatesh, 2010; Rai et al., 2002; Sykes, 2009); and (3) the impacts of enterprise systems on business processes (e.g., Seddon et al., 2010; Sykes, 2009). While past studies have extended our understanding of the impacts of enterprise systems and electronic procurement systems on employees' job outcomes and business process performance (e.g., Mishra and Agarwal, 2010; Morris and Venkatesh, 2010; Rai et al., 2009a), a majority of past work on IS impacts has applied a lean conceptualization of system use (e.g., duration and frequency of use) without considering the impact of work process characteristics, technology features or the implementation environment (Morris and Venkatesh, 2010; Morris et al., 2005; Sykes et al., 2009; Venkatesh et al., 2000, 2003, 2008). As IS use is a key intervening variable between IT investments and performance (Devaraj and Kohli, 2003), it is critical to conceptualize IS use and define constructs in a technology, tasks/processes, and user context (Burton-Jones and Straub, 2006). However, past work has not incorporated sourcing professionals' work activities or SESs' features in conceptualizing and measuring SES use. Moreover, as contextual factors can influence the strength/nature of relationships among constructs (and even invert the sign of relationships when a positive relationship becomes negative and vice versa) (Johns, 2006), it is important to understand how differences in sourcing professionals' work contexts affects the impacts of SES use on sourcing professionals' job outcomes. While sourcing processes can vary in terms of the interdependence of sourcing professionals with internal/external stakeholders (e.g., sourcing goods/services that require minimal vs. extensive interdependence), there is limited understanding of the effectiveness of SES use across levels of interdependence in sourcing professionals' work processes. Motivated by these gaps in understanding, we formulate the following research objectives: (1) to conceptualize and measure SES use by considering sourcing professionals' work activities and SES features and (2) to examine how sourcing professionals' work process interdependence changes the impact of SES use on job outcomes.

We conducted a field study at one of the largest consumer product companies in the United States, which has implemented an SES to innovate its sourcing professionals' work processes. We collected survey data as well as various forms of qualitative data through an 18-month period that spanned pre-implementation, implementation, and post-implementation. Based on an analysis of the post-implementation survey and interview data, our findings provide insights into how sourcing professionals' SES use affects their job outcomes and how a salient work process characteristic – interdependence – moderates the effects of SES use on job outcomes.

2. The sourcing process and the sourcing enterprise system context

The purchasing function has been responsible for executing purchase requests from internal customers in the organization and resolving associated transaction discrepancies (Sollish and Semanik, 2011). Purchasing agents have relied on a variety of communication technologies (e.g., emails, faxes, and phones) supported by personal productivity software (e.g., spreadsheets, word processing) to execute purchasing activities. With innovations in IT for purchasing, organizations have adopted a variety of IT applications directed at purchasing tasks (e.g., catalog management, order fulfillment, and payment settlement).

In contrast to the transaction orientation of the purchasing process, the sourcing process adopts a strategic perspective to obtain necessary goods/services. It is a multi-stage process that guides both capital expenditures and the tactical purchasing of goods/services over a specified period of time (Gattiker et al., 2007). It identifies and qualifies suppliers and establishes the contracting parameters within which purchasing transactions should be executed. Although the specific activities of the sourcing process are not standardized across organizations, the process generally includes the following stages: requirements determination, supplier selection, and supplier governance (Gattiker et al., 2007; Weele, 2002). The sourcing process is initiated by determining requirements for goods/services across categories in the organization. Once these sourcing requirements are established, sourcing professionals' activities concentrate on (1) *supplier selection*, which entails identifying suppliers and performing a comparative evaluation of suppliers' abilities to meet sourcing requirements, and (2) *supplier governance*, which involves designing and negotiating contracts as well as implementing mechanisms to interact with internal customers and suppliers to ensure the successful fulfillment of the sourced product/service. Fig. 1 shows these primary stages of the sourcing business process.

As organizations have established sourcing functions/roles, they have implemented IT applications to support individual sourcing activities (e.g., tools for accessing and analyzing certain types of