Chapter 4
Measuring the Impact of Tools on the Leanness of E-Procurement Processes

Carina Nicole Leistner
University of Liverpool, UK

ABSTRACT

The concept of lean thinking is—despite its prominence as waste reducer and value creator—still mainly applied to the manufacturing environment. Whilst investigations on applicability to the service industry are advancing fast, little has been distributed for the area of procurement. This development is opposed by trends of increasing degree of outsourcing and related high portions of procurement of up to 60% of a company’s total value creation. The mismatch in terms of lack of strategic attention on lean procurement on the one hand and the responsibility of this function for the majority of a company’s value creation on the other, combined with the simultaneous trend of establishing “miracle cures” in the form of e-procurement gave rise to the interest in determining the stake of buy-side systems in the leanness of procurement processes. For this purpose, a case study approach was adopted focusing on the central questions of what lean means for procurement, which measures could portray leanness in this instance, how the stake of buy-side systems can be reflected in the performance indicators with separate consideration of repetitive processes in operational and strategic purchasing, in order to finally attribute a clear enabler role to IT for achieving leanness in operational procurement. This finding has been reached by the means of an objective research approach, relying on quantitative methods such as KPI measurement for data collection and regression analysis for the interpretation of correlation between the variables. As such, this chapter has not only a high value for practitioners by providing a baseline for benchmarking lean performance of e-procurement, by supporting system investment decisions, or by simply facilitating decisions on adapting existing IT solutions. It also proves as enrichment to the existing theoretical body of knowledge filling into the aforesaid gaps of lean procurement and putting—at least for procurement processes—an end to the discussion as to whether ERP systems and lean thinking are reconcilable or not.

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INTRODUCTION

The concept of lean thinking derives originally from the manufacturing environment. As such, the terminology in general and specifically around the central concept of waste origin is greatly dominated by the context of physical operations like overproduction, unnecessary motion, excessive inventory, and waiting, which according to Abdi et al. (2006) can be applied to the service sector as well. Bowen and Youngdahl (1998) implicitly support this perception by concentrating their research on the similarities between manufacturing and services, thereby emphasizing the lean service characteristics of flow production and just-in-time pull principles, increased customer focus, employee empowerment, value chain orientation for eliminating administrative waste, and reduction of performance tradeoffs between internal efficiency and customer-defined flexibility. Also Seddon and O’Donnavan (2010) characterize, next to the intangible nature of services, the possible presence of customers during service execution and the potential sequential overlapping of services’ production and consumption as the only major differences to the manufacturing environment.

In essence all of the afore-quoted authors indicate no objections to the applicability of a lean approach to services and merely suggest minor necessity for adaptation. Therefore, the overall research aspiration towards lean processes in the typically service-oriented function of procurement was deemed sensible. Nevertheless, the lack of a clear meaning of the characteristics implied with lean services hampered the deriving of procurement-related lean indicators, thereby giving rise to the need of a definition. This perceived gap in existing literature is supported by Wilson and Roy (2009) who argue that no harmonized approach exists with regards to the conceptualization of lean procurement as “a philosophy, a work culture, a technique, a management concept, a value, a methodology or an ethos.” Nevertheless, critical components arguably include measures such as standardized transportation, flexibility in specifications, reduction of administrative workload, all kinds of waste elimination, and tighter information sharing with suppliers (Walters-Fuller, 1995, cited by Wilson & Roy, 2009, p. 819). Going even further, tools in e-procurement are said to target specifically at the three latter mentioned factors. Nonetheless the description of critical components to lean procurement is addressed rather vaguely in common literature and latter authors perceive that the attribution of tools to lean procurement is also decided without measures or reasoning in practice. This means that, in order to assess the true contribution of digitalization to lean, both, a clear framework for the measurement of lean procurement, as well as, a dedicated means to deducing the contribution of tools are required. Linked to this perception, Chase (1999, p.2, cited by Bhasin & Burcher, 2006), indicates that an organization or a process is easily referred to as being lean when incorporating only one or two lean elements. Likewise, Womack (2007), ‘warns’ from a commonly isolated integration of tools as singular ‘lean’ means “without tackling the difficult task of changing the organization and the fundamental approach to management” despite his general admittance for the value of tools in support of lean.

Research on the general perception of tool contributions to the leanness of information exchange reveals that Puschmann and Alt (2005) report on the contribution of Enterprise Resource Planning (ERP) systems in reducing administrative approval procedures in purchase operations and attribute a high degree of process, product, and inventory savings to electronically enabled Requests for Quotation (RFQ’s), auctions, and catalogues. In linking this observation with Wilson and Roy’s (2009) interpretation that lean procurement is essentially based on the Total Cost of Ownership (TCO) model and aiming mainly at the reduction of system costs, a clear contribution of tools to leanness could be reasoned for. Tinham (2010) likewise praises transparency of IT as an enabler.
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