

E-Procurement Utilisation in the Maintenance Repair and Overhaul (MRO) Supply Chain by SMEs in India

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ABSTRACT

Due to the significant contribution in output, exports and employment, the Small and Medium enterprises (SEMs) play a critical role in the Indian economic structure. In this study a three dimensional; namely information, transactional and strategic decision making perspectives of the e-procurement functionalities are investigated. A cross-sectional survey is used as the methodology for the data collection. After a systematic analysis it was found that in the MRO industry the MSEMs used the e-procurement system mainly for purchasing, communication and transactional purposes. However, strategic utilisation of the e-procurement for the optimisation of SCM process in the MRO industry in India is still in its nascent stage. The results are limited to its sample size due to the size of the MRO and its MSEM industry. Thereafter, success factors and performance of the e-procurement in these MSEM is also studied to analyse the utilisation of e-procurement in detail.

KEYWORDS

E-Procurement, Maintenance, Micro, Performance, Repair and Overhaul, Small and Medium Enterprise, Success Factor, Supply Chain Management

1. INTRODUCTION

Maintenance, Repair and Overhaul (MRO) within the aviation sector has not kept pace with the ever growing service sector in India. The current value of the sector is about \$700-800 million and it is stipulated that the industry is expected to grow to about \$1.6 billion in spending each year for the next decade from its current size. Therefore, this market is still largely unexplored. A lack of well-maintained facilities have forced aviation companies to take their planes/helicopters to other South East Asian countries. This has resulting in foreign exchange losses as well as time delays. Experts have stated that every \$1 million spent on MRO could create 30-40 new categories of jobs which could boost employment from 62,000 to more than 117,000 in next couple of years. Also, the wages paid in this country (30-50 USD/man-hr) are almost 50% less compared to the global rate (40-100 USD/man-hr). Therefore, strategically India is becoming the aviation MRO hub.

Aviation MRO has received much attention due to the increasing importance of air safety in the aviation industry. Currently, business management has entered an era of Internet work oriented competition where the competition is not within brand versus brand, store versus store but in supply chain versus supply chain (Lambert and Cooper, 2000). Companies are struggling to obtain dominant

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positions in the market by improving their supply chain as customers evaluate the performance of the organisations based on their supply chain management (SCM) performance. Aircraft MRO activities invariably demand established well-coordinated information technology and communication to face challenges in the aviation industry. Ensuring air safety and optimal flight efficiency without impacting cost is a serious challenge for the supply chain of the aviation industry where procurement plays an important role (Basak, 2016). Procurement is considered as an extremely expensive and important business activity for the organisation as it spends a huge amount of its operational budget and revenue in procuring goods and services (Rahim, 2008). The emergence of e-procurement not only eradicates inefficiencies of the traditional procurement process but also builds an integrated network within the trading partners for better communication. Kähkönen et al. (2013) described the changes or introduction of new e-business technologies that can cause changes in the supply chain and networks, and these changes call for a dynamic approach to integrate the supply chains. The benefits of an e-procurement system while building an integrated network with the trading partners for effective communication to overcome the issues of SCM depends on the adoption of an e-procurement mechanism and information and communication technologies (ICT) by all trading partners in the value chain especially small and medium scale enterprises (SMEs).

The aviation industry is pinning its hopes on the Prime Minister, Mr. Narendra Modi's government led 'Make in India' (Choudhury, 2015) campaign to better exploit the potential of the aviation MRO business. Indian SMEs have emerged as a highly vibrant and dynamic sector of the Indian economy over the last five decades. SMEs not only play a crucial role in providing large employment opportunities at comparatively lower capital cost than large enterprises but also help in industrialization of rural areas. The sector, consisting of 48 million units, as of today, provides employment to over 80 million people. It contributes about 8% to GDP, 45% to the total manufacturing output and 40% to the country's exports. In India SMEs has achieved steady growth over the last couple of years. The role of SMEs in the industrial sector is growing rapidly and they have become an area for future growth.

Existing literature has revealed several aspects, benefits and issues of e-procurement for various industries. Basak (2016) detailed the e-procurement benefits in the aviation MRO industry. However, e-procurement benefits for the supplier; mainly consisting of SMEs in India for the aviation MRO industry, have not been studied elsewhere. In the aviation MRO industry, SMEs are complementary ancillary units that contribute enormously to the socio-economic development of the country. As explained, an integrated SCM network can only be established when all the trading partners in the value chain accept the e-procurement mechanism. Therefore, the purpose of this present study is to evaluate the magnitude of the e-procurement utilisation by the supplier side of the business consisting of Micro, Small and Medium Enterprises (MSMEs) of aviation industry. The aim of this study is to enhance adoption and utilisation of the e-procurement system by SMEs in India while realising the benefits.

2. SCM AND MRO PROCUREMENT IN AVIATION INDUSTRIES

A supply chain is a network of facilities and distribution options that begins with the procurement of materials up to rendering service packages to the end consumer (Jain et al., 2010). An efficient supply chain enhances the opportunity of reducing operational costs, improving productivity along with some complex challenges regarding end-to-end integrated planning, increased availability of assets, inventory optimization and effective spending management (Khandelwal, 2011). Procurement is actually a support activity in the supply chain for the purchase of inputs for all parts of the value chain while anticipating requirements, sourcing and obtaining supplies, moving supplies to the organisation, and monitoring the status of supplies as current assets (Pires and Stanton, 2005). Procurement of indirect materials for MRO is neither part of the end product nor resold directly but is required for the company (Puschmann and Alt, 2005).

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