



Cycle time reduction in outsourcing process: case of an Indian aerospace industry

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Abstract

This paper reports a case study of an Indian aerospace industry, XYZ Aeronautics Limited, with an objective to bring reduction in cycle time of outsourcing process. The focus is to identify bottleneck areas and investigate into the improvement opportunities. The paper enriches the present body of knowledge by contributing a methodology and its application for a real-life case study to understand the implications of outsourcing on operational planning. The analysis reported in this research is based on the available knowledge and extensive experience gained while working in the outsourcing department of the case organization for a long period of time. The research integrates action research, longitudinal case study research, and simulation for the detailed and scientific analysis of the problem for a case organization. The study employs a six-step analysis approach for investigating the outsourcing-related issues in case organization. The simulation study has helped to reduce the average cycle time of purchase order placement to 69 days, i.e., improvement by 33.65% over the present 104 days. This would enable the case organization to conduct “what-if” analysis and evaluate the implications of bringing improvements in select bottleneck areas for reducing cycle time of outsourcing process. The investigation is expected to help managers to negotiate on appropriate dimensions with vendors and convince them for the adoption of e-sourcing, e-contract, and e-catalog technologies.

Keywords Outsourcing · Purchase order · Simulation · Cycle time · Action research

Nomenclature

AMD	Aircraft Manufacturing Division
AOD	Aircraft Overhaul Division
ARS	Automatic replenishment stock
AOG	Aircraft on ground
CAGR	Compound annual growth rate
CPO	Chief of production overhaul
CST	Comparison of statement
CT	Cycle time
RMS	Repair maintenance and service order

L/RMSO	Local/readymade store order
MSR	Material sub-contract requirement
MSRR	Material sub-contract requirement request
PSC	Part structure correction
SMH	Standard man hour

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1 Introduction

Operational excellence in terms of quick and reliable deliveries, short lead times, high resource utilization, and low inventories is desirable for all manufacturing firms [33].

The last two decades has witnessed the proliferation of literature on why firms should outsource and how they should do it; however, the implications of outsourcing on operational planning are less explored. The present body of literature adequately addresses the positive and negative sides of the outsourcing in manufacturing strategy [21] but only a little importance is given to understand the implications of outsourcing decisions on operational planning (Boulaksil and Fransoo 2010).