

Chapter 14

Outsourcing Supply Chain Support and its Effectiveness and Implication in R&D Environment in Singapore

Dimitris Folinas

Alexander Technological Educational Institute of Thessaloniki, Greece

LH Sim

Hyperion@sg, Singapore

ABSTRACT

This study aims to study the outsourcing challenges and issues, specifically related to information sharing between partners that are faced by precision tool R&D organizations in Singapore. The research uses i3lab (a Singapore home grown R&D firm) as the case for study and employs interviews of 5 employees at i3lab. The interviews of the employees of i3lab revealed that there were concerns about security and integrity of the information that is being shared with the outsourcing partners, and this leads to an inherent reluctance in sharing sensitive information. The research also includes interviews of employees from three outsourcing partners of i3lab, and it was found that lack of communications and lack of protocols for facilitating the information sharing between the partners were causes of low standardization, loss of quality, and increased costs, due to delays and re-works. There appeared to be a lack of strategic approach and planning to information sharing at different stages of outsourcing supply chain, which led to ad hoc and inadequate communications.

INTRODUCTION

With no exceptions, Singapore industries experiencing tremendous out shift of industrial supports to lower wages counties, like China, due to skyrocketing cost here. The aims of this chapter

highlights why precision tooling R&D firm needs to joint the crowds of outsourcing their R&D supply chain services abroad to China and the challenges and decision-making process.

In the past decades, there has been experienced an acute shortage of supply chain support services, especially for Research and Development (R&D operations). There are multiple reasons for these

DOI: 10.4018/978-1-4666-2008-7.ch014

shortages and these include outsourcing to foreign countries like China and India where cost advantages can be obtained, inflationary pressures on the costs of operations. Indices like the manufacturing unit labour costs have shown an increase of 15% while unit business costs have increase by 7.8% over 2010 (MIT, 2011).

In addition, there is also a shift towards knowledge-based economy as opposed to manufacturing and engineering, which has led to the government focusing on other sectors. There is a lowering of demand in the ultra-precision engineering segment in Singapore. A recent survey by the Ministry of Trade and Industries (MIT) has revealed that there is a decline of 5.9% in the manufacturing sector in the second quarter of 2011. The Precision Engineering sector comprising of precision modules and components has shown a 10% decrease in 2011 from the year 2007 (MIT, 2011).

The above factors have made it lucrative for organizations in the in the ultra-precision engineering R&D activities to follow the path of outsourcing. However, while outsourcing leads to cost cuttings, it may also lead to a loss of control over standardization and problems of product quality. There is therefore a need to share information with the outsourcing partners. The current study is aimed at evaluating how the ultra-precision engineering R&D needs to manage their sensitive information while sharing knowledge and practices with their outsourcing partners.

Based on the above, the main aims of this paper are the following:

- To evaluate the challenges, related to quality control that that are encountered during outsourcing of supply chain services support abroad, in the ultra-precision engineering R&D activities.
- To evaluate the decisions to be made regarding information sharing with outsourcing partners.

- To understand what safeguards are needed to manage sensitive information flow and exchange during outsourcing activities.
- To study the differences in the procurement practices between Singapore and China.

The first research aim is directed towards studying the problems and issues related to quality control in supply chain management when outsourcing these activities to a foreign country. This study is expected to reveal insight about the role that information sharing plays and how inability to share information may lead to quality issues. The second aim of the research helps in evaluating the challenges that the management may face while making decisions regarding information sharing - what type of information to share, why to share and how to share it. These decisions are crucial because information sharing is inevitable, but it needs to be approached methodically as well as with caution. The third research aim directs research to assess the safeguards and best practices that the ultra-precision engineering R&D industry uses to protect sensitive information while maintaining good communications and relationships with the outsourcing partners. The final aim of the research helps in comparing the procurement practices between Singapore and China. This aim enables the researcher to explore the best practices used in China and the methods and safeguard that are in place in the Chinese industry and to make suitable recommendations to the Singaporean industry.

The above research aims are achieved through using both secondary and primary research methods. Secondary methods of research comprise of a literature review that is based on a critical analysis of the available literature and research on information sharing in outsourcing, quality control and relationships management in outsourcing in ultra-precision engineering R&D and on the procurement practices across China and Singapore. The primary research is undertaken using an interview method and qualitative data

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