

Chapter 11

Role of European Automotive Supplier Integration in New Product Development

Chanan S. Syan

University of the West Indies, Trinidad

Anthony S. White

Middlesex University, UK

ABSTRACT

Over the past two decades, the automotive industry has experienced major changes as a result of globalisation, changing customer requirements and environmental legislation. The supplier integration in the new product development process is a significant step in facilitating reduction in the time to market of innovations and reducing costs. The aim of this work is to assess the extent of supplier integration in automotive organisations and to identify what barriers still exist. An exploratory Europe-wide survey was conducted, and 31 usable returns from automotive organisations spread across the EU. The survey confirmed the increasing importance of supplier integration in the automotive industry; however, the practice varies from organisation to organisation. They also indicate that most automobile manufacturers are engaged in functional rather than strategic supplier integration, indicating that the supplier integration is not yet fully developed, but progress in the first tier of suppliers is becoming common.

INTRODUCTION

The automotive industry plays an important role in the European economy. In 2002, it contributed 3% of the gross domestic product of the European Union (EU-15) and 8% of the total manufacturing

output (European Commission, 2005) providing 12 million jobs. Changes in its' business/manufacturing strategies and modus operandi are likely to affect many other businesses (Womack et al., 1990).

Environmental legislation, rapidly changing customer requirements, strongly segmented markets and global competition have been the drivers of significant changes in the automotive

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and other industries over the past two decades. In order to maintain profitability, the European automobile sector has evolved to reduce product life cycle and increase product customisation (European Commission, 2005). The recent trend is to deliver cars more quickly to reduce costs (Holweg & Miemczyk, 2003). Practice within the automotive industry has often been that the OEM pressure suppliers into accepting cost reductions using blackmail (Andreson, 2009). Paashius (1998) and Ulrich and Eppinger (2004) argue that competitiveness will depend on how quickly and effectively it can attain these goals. Modularisation and outsourcing subsystem manufacture are key strategies (Schilling, 2000; Novak & Eppinger, 2001), requiring efficient coordination between the original equipment manufacturer (OEM) and its suppliers. It is difficult to maintain the necessary close relationships with a large number of suppliers; consequently, developments have been characterised by a reduction in the supply base (Cousins, 1999) but with longer and closer relationships (Kamath & Liker, 1994). Truss et al. (2006) described the General Motors project to respond to customers more quickly with better IT frameworks, decision making processes to match supply and demand using collaborative planning, forecasting and replenishment, aligning business processes in trading partners by encouraging trust and collaboration. Childerhouse et al. (2003a) have identified the information flow “pains” that afflict automotive supply chains current practice, particularly the lack of transparency and its’ impact on trust between partners. In their second paper (Childerhouse et al., 2003b) they show that there are improvements to the amount of information shared between partners since 1998 in the area of product design.

Wynstra et al. (1999) argue that New Product Development (NPD) depends on collaboration. The research presented in this paper aims to obtain empirical results to verify the extent to which NPD supplier integration is a genuine feature of the European automotive industry. A review

of published supply chain integration and NPD literature provides the basis for a set of factors for analysis. The research methodology and survey design are described. The results are presented and their implications discussed.

LITERATURE REVIEW

Fischer (1997) classifies supplier integration based on whether the manufacturer produces commodity or innovative products. The primary aim of commodity manufacturers is to provide a reliable and stable supply at the lowest possible cost; consequently supplier involvement is operational, while the primary purpose of suppliers of market-driven innovative products is to respond quickly to unpredictable demand requiring strategic supplier integration, for example in clothing (Abecassis-Moedas, 2006). Cassivi (2006) has investigated the collaborative planning within a supply chain using e-collaboration initiatives by survey of telecommunications companies and finding that issues of information sharing could be overcome using electronic data exchange. This process also improved product innovation.

The automobile industry has become globalised and more market-driven, forcing companies to re-evaluate their operating procedures (Christopher, 1998). Collaboration between partners along the supply chain has emerged as one of the necessary conditions needed for manufacturers to achieve a sustainable competitive advantage (Fine, 1998; Handfield & Nichols, 1999; Jespersen & Skjott-Larsen, 2005). Al-Shelabi et al. (2008) have shown that of the Malaysian Automotive industry engaged in NPD 70% don’t have formal processes in place. Frohlich and Westbrook (2001) and Power (2005) have argued that the more suppliers are integrated into the supply chain, the greater the benefits will be to all stakeholders.

Traditionally, studies in supplier integration have focused on parts purchases and delivery schedules. However, several studies (Clark, 1989;

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