



# Buyer–supplier partnerships during product design and development in the global automotive sector: Who invests, in what and when?

Fiona Lettice<sup>a,\*</sup>, Clare Wyatt<sup>b</sup>, Stephen Evans<sup>c</sup>

<sup>a</sup> Norwich Business School, University of East Anglia, Norwich NR4 7TJ, UK

<sup>b</sup> Morgan Stanley, 25 Cabot Square, London E14 4QA, UK

<sup>c</sup> School of Applied Sciences, Cranfield University, Cranfield MK43 0AL, UK

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## ABSTRACT

This paper explores the concept of partnerships between buyers and suppliers in the global automotive sector during product design and development. Partnerships are often the goal in a shift away from adversarial arms-length relationships. The objective of this research is to provide empirical evidence to explain the levels of mutual investment expected and achieved in partnerships from both buyer and supplier perspectives. During this research, 25 employees from 12 global supplier organisations who were in partnership with a specific vehicle manufacturer (VM) were interviewed. Twelve employees from this VM were also interviewed. The research showed the differences between partnerships and non-partnerships and the disparities in the expectations of investment from each partner. For suppliers and buyers to get the most out of partnerships, clear expectations and investments needed over time should be understood and agreed early in the relationship.

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## 1. Introduction

The automotive industry has been the subject of a great deal of study, largely due to its importance as the single largest industrial sector in the world economy (Turnbull et al., 1992; Taylor and Taylor, 2008). Of major influence has been the work of the International Motor Vehicle Programme (Womack et al., 1990), which reports on the global industry and the overall future of the automobile. Vehicle manufacturers (VMs) are facing intense challenges to survive (Oliver et al., 2008) associated with globalisation, sustainability and the opening up of world markets. A key outcome has been an increasing emphasis on the role of the global supply chain

in competitive success and recognition that competition is based on the whole supply chain and not just the manufacturer (Leisk and Wormald, 1992; Cousins and Spekman, 2003).

An automobile is composed of approximately 15,000 parts (Hyun, 1994; Oliver et al., 2008). Thomas and Oliver (1991) found that European motor manufacturers typically outsource 50–60% of their parts and assemblies from outside suppliers and in Japan, Toyota and Nissan outsource 70–75% of their components. Outsourced components are therefore a substantial element of total costs in the car industry, estimated at between 50% and 60% (Bresnen, 1996; Lee and Oakes, 1996). Three times as many people are employed in the industries that supply parts to VMs than in the automotive manufacturers themselves. In the UK alone the automotive manufacturing sector had a turnover of £48.5 billion with approximately 850,000 employees directly dependent on the sector and accounting for approximately 10% of UK

\* Corresponding author. Tel.: +44 1603 592312; fax: +44 1603 593343.

E-mail addresses: Fiona.lettice@uea.ac.uk (F. Lettice),  
clare.wyatt@morganstanley.com (C. Wyatt), steve.evans@cranfield.ac.uk (S. Evans).

exports (SMMT, 2007). It is acknowledged that attention has predominantly focused on the activities of the VMs, but that the success of supply chain companies is also an important factor (Ingersoll Engineers, 1995; SMMT, 2007).

The nature of supply chain relationships in the automotive sector has evolved, especially as competitive pressures have increased since the 1970s and the industry has matured and reached levels of over capacity (Lamming, 1993). During the 1970s and early 1980s, relationships with suppliers were highly adversarial, with multiple sourcing of suppliers, large supplier bases and a focus on cost reduction (Lascelles and Dale, 1990). The focus on cost reduction led to strategies such as “Dutch auctions”, which forced suppliers to continually undercut each other until prices of components fell below the level required to achieve a basic level of profitability. Low or non-existent margins were reported to destroy the competitive capabilities of the components industry. They were forced to reduce costs until they no longer had the incentive nor the capability to update equipment, innovate or plan for the longer term (Powell, 1990). Since the 1980s, all VMs have attempted to adopt Japanese-style just in time (JIT) manufacturing techniques, lean production, JIT delivery of component supplies, minimum inventory programs and total quality control (TQC) to some degree (Maccoby, 1997). This shift in manufacturing philosophy has been simultaneous with VMs attempting to reduce their supply bases and trying to set up longer-term, more collaborative relationships with their remaining suppliers (Thomas and Oliver, 1991; Cousins and Spekman, 2003; Storey et al., 2006), with the aim of improving quality and reducing product development lead times (Ellison et al., 1995; Lamming, 1990; Oge and Dickinson, 1992). It is often argued that higher levels of integration or partnerships are required in the supply chain, especially for complex business conditions (van der Vaart and van Donk, 2008) and complex products and components (Wasti et al., 2006).

Although most VMs had invested in manufacturing facilities in a number of countries in the 1950s and 1960s, these operations were basically national or at best regional in character (Anderson et al., 1997). But, the sophistication and variety of consumer tastes across the world means that VMs still have to retain a national focus, but alter their strategy to “think globally but act locally” (Bursa et al., 1997; Nakamura and Milburn, 1997). One way this is commonly being achieved is through the optimisation of platforms, and developing more model variants from each individual platform (Ealey et al., 1996). In the 1990s, this was being achieved through alliances, partnerships and collaboration agreements which took advantage of new electronic communication media and information technologies (Kanter, 1994; Lascelles and Dale, 1990; Hyun, 1994; Leverick and Cooper, 1998; Cousins and Spekman, 2003). The form that these alliances take varies from loose arrangements to increase manufacturing capabilities, through joint development projects to complete mergers or takeovers. Alliances in their many forms are being seen between VM and VM, for example Volkswagen—Seat, Skoda and Audi, Renault—Nissan, Ford—Mazda, Jaguar, Land Rover, Lincoln, Mer-

cury; and also to share critical systems such as engines, for example DaimlerChrysler, Mitsubshi and Hyundai or assembly plant facilities, such as Nissan and Ford. The industry is also seeing ever closer relationships between VMs and their first tier suppliers.

The research is focused on the exploration of global VM–supplier partnerships for product development and design within the automotive industry. The general confusion and lack of sufficient theoretical understanding surrounding the term partnership and its implementation emphasise the requirement for the development of a more grounded understanding. This is achieved through the exploration of partnerships from the perspective of those involved. There are a number of variables that can be used as the focus of study in partnerships, but the literature review highlights the current lack of understanding of the behavioural and attitudinal elements of a partnership and changes in the partnership over time. The research will therefore focus on the longitudinal relationship aspects of a partnership. The literature review also highlights an enduring bias towards the customer perspective, with studies that do not incorporate data from both sides of the dyadic relationship (Wasti et al., 2006; Chung and Kim, 2003). To gain a more complete picture of partnerships this research therefore focuses on the perspectives of both buyers and suppliers.

This paper presents a literature review on collaborative buyer–supplier relationships, defining partnerships and describing research that has been conducted, particularly in the automotive sector and focusing on the investments that both parties make in the partnership. The next section introduces the case study between one VM and 12 of its first tier suppliers and explains how the data were collected and analysed. The findings about the partnership and the investments made by the VM and its suppliers are then presented and discussed to show how expectations change over time and what levels of investment are perceived and realised by both partners in the relationship. Finally, we present the conclusions, implications for practice and implications for future research of this study.

## 2. Collaborative buyer–supplier relationships

Kamath and Liker (1994) developed a framework to describe four key different types of collaborative relationships that may be undertaken by VMs and suppliers in product development. This framework, shown in Table 1, is important as it shows that a range of relationship types exist and it describes the relative power of each party in the relationship and the responsibilities of the customer and supplier during product development.

The “contractual” role is basically an “arms-length” relationship. A supplier manufactures simple parts, either standard across the industry or designed by the VM. In the “child” role, the supplier both designs and manufactures parts, but again to the specifications of the VM. In a “mature” role, the supplier is given broad specifications such as the desired size, weight and inter-connections with other parts, but has the major responsibility for designing the component or system. This is often referred

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