Supplier Development Practices
in the South African Motor Industry

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Declaration

I hereby declare that this research study is my own work and that it has not been submitted for any other degree or to any other university.

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Dedication

This dissertation is dedicated to my parents, Lynne and Tony,

and my husband, Grant,

who have given me every opportunity possible

to make the most of my education.

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Abstract

The purpose of this dissertation was to determine the nature and extent of supplier development policy, strategy and practices in the South African (SA) motor industry. This fills a gap in the SA motor industry literature by focusing exclusively and comprehensively on the topic of supplier development. Multiple data sources and methods were used to gain a balanced, holistic perspective of supplier development in the industry. The perspectives of both the Original Equipment Manufacturers (OEMs) and a sample of key first-tier suppliers were obtained. This provides a *dyadic* study of supplier development, which is a rarity in the international supplier development literature. The views of other organisations playing a role in supplier development in the SA motor industry were sought to provide further insight.

Survey data was obtained from the whole population of light passenger vehicle OEMs located in SA. This contributes comprehensive empirical data to the international supplier development research, which is predominantly case-study based. The supplier development practised by the OEMs with respect to first- and second-tier suppliers was investigated, as well as that employed by first-tier suppliers with respect to second-tier suppliers. In addition to providing an overview of supplier development in the SA motor industry as a whole, further insight is provided by a mini case study of an OEM exhibiting best practice in supplier development.

OEMs and first-tier suppliers differ in their perspectives regarding the overall level of supplier development practised by the OEMs. OEMs consider the level of supplier development they provide to be high to moderate, while the first-tier suppliers perceive the supplier development received to be moderate to low. However, the research suggests that

the level of supplier development practised by the OEMs in the SA motor industry is nevertheless likely to be more intense than that enjoyed by suppliers in most other SA industries. The level of supplier development employed by OEMs was found to be *cyclical*, peaking at times of new model / part introductions, thereafter moving from proactive to reactive in nature. A key finding was that the overwhelming majority of first-tier suppliers regard Toyota South Africa Motors (Pty) Ltd to be the leader in supplier development in SA. Another interesting finding was that the significant East versus West distinction found in the international supplier development literature is *not* applicable to the SA situation. Rather, in SA, the relevant division is between Toyota and the "other" SA OEMs.

When sourcing locally, the OEMs prefer to source components from *global* first-tier suppliers situated in SA. These include SA subsidiaries of global companies, SA suppliers with foreign joint venture partners or SA suppliers with foreign technical agreement partners. The research revealed that many local first-tier suppliers believe that they receive more developmental support from their foreign head-offices or foreign partners, than from the SA OEMs. The OEMs and first-tier suppliers rarely develop *foreign* suppliers, who supply a significant proportion of total component requirements. The development of foreign suppliers is left to the OEM and first-tier counterparts in the foreign countries. The development of second-tier suppliers in SA is considered to be the responsibility of the first-tier suppliers, with OEMs seldom getting involved. The local first-tier suppliers engage in moderate to low supplier development with respect to local second-tier suppliers, citing a lack of resources as the primary reason.

Global competition, the Motor Industry Development Plan (MIDP) and Broad-Based Black Economic Empowerment (B-BBEE) are identified as key drivers of the OEMs' supplier

development strategy in SA. There is renewed pressure being placed on the OEMs to improve their sourcing of components from B-BBEE companies. This is in turn resulting in increased pressure being placed on first-tier suppliers to improve their B-BBEE scorecards. Although most OEMs have specific supplier development policies relating to B-BBEE, and government and others have implemented initiatives to develop these suppliers, the amount of component sourcing from such companies was found to be low. The research highlighted innovative projects and institutions playing a role in supplier development in SA, such as the Durban Auto Cluster and The South African Auto Benchmarking Club.

The multi-source data obtained in this dissertation provides an empirical benchmark against which to measure the success of future supplier development initiatives. The dissertation also allows industry players to identify how their supplier development policies, strategy and practices compare to the industry as a whole, as well as to best practice.

Table of Contents

List of Tables

Acronyms

AIDC:	Automotive Industry Development Corporation
AIEC:	Automotive Industry Export Council
APDP:	Automotive Production and Development Programme
ASGI-SA:	Accelerated and Shared Growth Initiative of South Africa
B-BBEE:	Broad-Based Black Economic Empowerment
BEE:	Black Economic Empowerment
DAC:	Durban Auto Cluster
EDI:	Electronic Data Interchange
ERP:	Enterprise Resource Planning
IDZ:	Industrial Development Zone
IMDS:	International Material Data System
IRCC:	Import Rebate Credit Certificates
IRP:	The Industrial Restructuring Project
JIT:	Just-in-time
JIS:	Just-in-sequence
KPI:	Key Performance Indicator
MBE:	Minority Business Enterprise
MIDC:	The Motor Industry Development Council
MIDP:	Motor Industry Development Programme
MISCCIP:	The Motor Industry Supply Chain Competitiveness Improvement Programme
NAACAM:	National Association of Automotive Components and Allied Manufacturers
NAAMSA:	The National Association of Automobile Manufacturers of South Africa
NIPF:	National Industrial Policy Framework
NUMSA:	National Union of Metalworkers of South Africa
OEM:	Original Equipment Manufacturer
R&D:	Research and Development
RDT:	Resource Dependence Theory

SA:	South Africa
SCM:	Supply Chain Management
SME:	Small and Medium-sized Enterprise
STS:	Supplier Technical Support
T1:	First-tier
T2:	Second-tier
T3:	Third-tier
TCE:	Transaction Cost Economics
TPS:	Toyota Production System
TSAM:	Toyota South Africa Motors (Pty) Ltd
UK:	United Kingdom
UNIDO:	United Nations Industrial Development Organisation
US:	United States
VW:	Volkswagen of SA (Pty) Ltd

Chapter 1

Introduction

This chapter introduces the topic of supplier development by placing it in context within the literature and highlighting its significance. The reasons for the need to investigate supplier development in the South African (SA) motor industry are presented, leading to the enunciation of the research questions and objectives, together with an outline of the structure of the rest of the dissertation.

1.1 Supplier Development in Context

Increased competition and globalisation of markets have forced firms to look beyond their traditional boundaries and consider their interactions with, not only their immediate suppliers and customers, but also the whole chain of suppliers and customers who participate in the life of their product or service. In many cases, the competition has moved beyond the realm of firm against firm, into the arena of supply chain against rival supply chains. This broad field, which includes the management of logistics, inter-firm relationships, quality control, purchasing, new product development, and inter-firm communications, is known as Supply Chain Management.

The issues covered in the supply chain management literature include, among other topics / themes: the theories underlying supply chain management (Halldorsson, Skjott-Larsen and Kotzab, 2003; Chen and Paulraj, 2004; Chandra and Kumar, 2000; Cooper, Lambert and Pagh, 1997); the nature of buyer-supplier and supplier-supplier relationships (Wu and Choi,

2005; Fawcett and Magnan, 2002); the benefits of collaboration in a supply chain (Singh and Power, 2009; Johnston and Lawrence, 1988); strategic cost management in supply chains (Wagner, 2008; Chivaka, 2005; 2007; Seuring and Muller, 2005; Tan, Lyman and Wisner, 2002); managing quality in supply chains (Lo and Yeung, 2006; Romano and Vinelli, 2001); risk management along supply chains (Knemeyer, Zinn and Eroglu, 2009; Braunscheidel and Suresh, 2009; Wagner and Bode, 2006; Blackhurst, Sheibe and Johnson, 2008); and the structure of supply chains (Fisher, 1997; Harland, 1996). Reviews of supply chain management literature have also been conducted (see Croom, Romano and Giannakis, 2000; Tan, 2001). One of the important aspects of a firm's supply chain management decisions, and the focus of this dissertation, is the firm's choice of supplier development strategy. For the purposes of this dissertation, **supplier development** is defined as:

"Any effort of a buying firm with its supplier(s) to increase the performance and / or capabilities of the supplier and meet the buying firm's short- and / or long-term supply needs" (Krause and Ellram, 1997a, p.21).

Supplier development is not a new concept (Leenders, 1966, cited in Wagner, 2006a). For example, it was used by Toyota in Japan during and after World War Two (Wagner, 2006a). Supplier development has a long history in the East (Krause, 1997; Langfield-Smith and Greenwood, 1998). However, it has only gained popularity in the West since the 1990s (Wagner, 2006a; Hines, 1994). Many leading companies such as Boeing, John Deere (Golden, 1999), Motorola, Marks & Spencer, Black & Decker, Hewlett Packard, General Motors and 3M have embraced the principles of supplier development (Spekman, Kamauff and Myhr, 1998; Wagner, 2006a).

It has gained in relevance as buying firms increasingly focus on their core competencies and outsource more component parts and services to suppliers, making the management of suppliers an important strategic issue for buying firms (Krause and Scannell, 2002; Dyer, 1996; Choi and Krause, 2006). Buying firms expect their suppliers to deliver innovative and quality products on time and at a competitive cost (Handfield, Krause, Scannell and Monczka, 2000), thus rendering the suppliers' performance critical to the long-term success of the buying firm (Krause, Scannell and Calantone, 2000).

Supplier development has received much attention from industry stakeholders, government and academics, particularly since the 1990s (Wagner, 2006a). There is a vast bank of supplier development literature, covering many different industries and countries, notably the United States (US) (Krause, 1997; Watts and Hahn, 1993; Krause and Ellram, 1997b; Krause *et al.*, 2000; Handfield *et al*., 2000; Krause and Scannell, 2002; Krause, Handfield and Tyler, 2007), and also Europe (Wagner, 2006a; De Toni and Nassimbeni, 2000), the United Kingdom (UK) (Lascelles and Dale, 1989), Japan (Hines, 1994; Dyer, 1996; 1997; Dyer and Nobeoka, 2000), Korea (Oh and Rhee, 2008), China (Cai and Yang, 2008) and Australia (Singh and Power, 2009; Langfield-Smith and Greenwood, 1998).

The supplier development literature consists mainly of *case studies* (Krause, 1997; Lascelles and Dale, 1989) together with a few large cross-industry supplier development surveys (see Watts and Hahn, 1993; Krause, 1997; Wagner, 2006a). The *buyer's perspective* of supplier development is the predominant viewpoint, with *few dyadic* studies considering the perspective of the buyer and supplier simultaneously. It is also important to point out that much of the supplier development research to date has been conducted in the motor industry, as discussed below.

1.2 Supplier Development Practices in the Motor Industry

Motor vehicle assemblers, referred to in the literature as "Original Equipment Manufacturers" (OEMs), realised from early on that to be successful they needed to make their supply chain more competitive than rival supply chains (Spekman *et al.*, 1998; Dyer, 1996). This is due to the fact that the international motor industry is characterised by intense competition, globalisation, global sourcing, outsourcing, technological innovation, global overcapacity, and low return on investments (Lamprecht, 2006; KPMG, 2010). It is dominated by a limited number of OEMs, particularly those in the three Triad economies of North America, Europe and Japan, which accounted for approximately 65 percent of global vehicle production in 2007 (Automotive Industry Export Council (AIEC), 2008). Key decisions regarding the sourcing of vehicles from different regions are made by the OEM head-offices, with local OEM subsidiaries competing for the vehicle export contracts (Black, 2007b). The OEMs' power extends to significant influence over the location of component production due to global sourcing and follow-sourcing policies. OEMs and first-tier (T1) suppliers today often form tandem global networks dictated by the OEMs (Moodley, 2001).

The world financial crisis and credit crunch of 2008 has had a devastating impact on the international motor industry, with many major players in the industry succumbing to bankruptcy as world vehicle demand plummets. These challenging times heighten the need for global automotive supply chains to remain competitive. The motor industry's response to the continuous competition and the world financial crisis is multi-faceted. While supplier development has been contemplated by many firms over the years, the global financial meltdown has put this issue high on the agenda.

There is much supplier development literature relating to the motor industry (see for example Hartley and Jones, 1997; Dyer, 1996; Dyer and Ouchi, 1993; Dyer and Nobeoka, 2000; Handfield *et al*., 2000; Lascelles and Dale, 1989), notably using US (Hahn, Watts and Kim, 1990) and European data (Wagner, 2006a). There has also been much interest in supplier development in the Japanese motor industry (Dyer and Ouchi, 1993; Hines and Rich, 1998), as well as in Australia (Langfield-Smith and Greenwood, 1998) and the UK (Handfield *et al*., 2000).

The international supplier development literature focusing exclusively on the motor industry predominantly uses the *case study* methodology. There is a lack of *empirical* research, such as surveys, focusing *exclusively* on the motor industry, although the motor industry has been well represented in the large *cross-industry* surveys (see Krause, 1997; Wagner, 2006a). There is again a scarcity of *dyadic* motor industry literature, considering supplier development from the perspective of buyers and corresponding suppliers, simultaneously; most literature focuses on the *buyer's perspective* of supplier development practices and outcomes in the motor industry.

More recently, there has been growing interest and studies done concerning supplier development in the motor industries of emerging economies, such as China (Bungsche, 2007) and Korea (Huang, 2002; Oh and Rhee, 2008). SA falls into the emerging economy category and investigating its supplier development practices appears to be important due to the factors highlighted below.

The SA motor industry is the country's largest manufacturing industry and the third largest sector after mining and banking, contributing 6.9 percent to Gross Domestic Product in 2007

(AIEC, 2008). The National Industrial Policy Framework (NIPF, 2007) and the Accelerated and Shared Growth Initiative of South Africa (ASGI-SA, 2006) policy documents highlight the SA motor industry as a focus area of government. The SA government has shown commitment to the motor industry from its infancy. "A successful automotive industry is often seen as an emblem of economic success and, especially in developing countries, as a sign of mastery of modern technologies" (Flatters, 2002, p.2). The SA motor industry has representation from the world's leading OEMs, all being foreign owned subsidiaries at present (Black, 2007b). The SA T1 suppliers are characterised by their large size and global ownership. The second-tier (T2) suppliers are generally where local SA ownership begins to vest.

Motor industries worldwide have been subject to heavy state intervention to encourage growth and competitiveness in the global economy. Many countries have introduced national incentive programmes, tax and other legislation to encourage, amongst other things, supplier development. For example, export incentive schemes have been provided by governments to the automotive industries of Australia, Brazil, India, Malaysia and SA (Damoense and Simon, 2004). Other examples of government intervention include the Minority Development Programmes in the US (Adobor and McMullen, 2007) and the Motor Industry Development Programme (MIDP) and Broad-Based Black Economic Empowerment (B-BBEE) legislation in SA. The MIDP is an export-oriented programme, implemented in 1995, to help the SA motor industry move from a long history of import-substitution into world trade. It is legislated until the end of 2009, with policy commitment to 2012. Facing fierce international competition as a production location for the OEMs, SA OEM subsidiaries

depend on SA domestic policies, notably the MIDP, to enable them to compete with other production locations around the world (Venter, 2008).

In 2008 there was much interest and lobbying by motor industry stakeholders for the long-awaited successor to the MIDP, called the Automotive Production and Development Programme (APDP), which will run from 2013 to 2020. The new programme has shifted away from export-orientation to a production focus. New incentives will focus on the creation of a strong and sustainable components manufacturing sector, the development of which was seen as insufficient under the MIDP (Hill, 2008).

There has been much research concerning various aspects of the SA motor industry conducted by academics, government, industry specialists, and industry participants. The research has focused on policy-related issues surrounding the MIDP (see Black, 2001; 2002; 2007a; 2007b; Black and Mitchell, 2002; Barnes, Kaplinsky and Morris, 2004); the competitiveness of the SA automotive components industry (see Barnes, 1999; 2000a-d; 2001; 2002; Barnes and Kaplinsky, 2000); the effect of learning networks and clusters (see Morris, Donnelly and Donnelly, 2004; Morris, Bessant and Barnes, 2006; Morris and Barnes, 2006; Lorentzen, 2005); and supply chain management and value chains in the SA motor industry (see Barnes, 2000c; Barnes and Morris, 2000; 2008). There have been three governmental reviews of the MIDP, conducted by government and industry specialists. The Trade and Industry Policy Strategies group has been active in discussing the motor industry. There is also much written in trade and financial magazine articles and newspapers about the SA motor industry (see, for example, Engineeringnews Online, Financial Mail, and Business Day).

In 2009 there was renewed research interest in assessing whether the SA government should take measures to ensure the survival of the motor industry in the wake of the global motor industry crisis (Financial Mail, 6 March 2009). Many other governments have intervened in their motor industries in response to the crisis, for example in the US where the government has provided loans to General Motors and Chrysler.

As will be discussed in Chapter 2, there is a lack of literature focusing exclusively on *supplier development* in the SA motor industry. Supplier development has been addressed in some research, but not as the main focus. For example, Black and Bhanisi (2007) present a mini case study of Toyota South Africa Motors (Pty) Ltd (TSAM) and it's suppliers, covering aspects of TSAM's supplier development practices, within a paper focusing on the impact of globalisation and automotive policy on imports. This case study is discussed further in Black's PHD thesis (2007a), while the thesis topic is centred on automotive policy and the restructuring of the SA motor industry. Morris *et al.* (2006) and Morris and Barnes (2006) touch on issues of supplier development in the context of The South African Auto Benchmarking Club and the Durban Auto Cluster. The main focus of the first paper is the use of learning networks to enable industrial development, while that of the second is regional development and cluster management in SA. Barnes and Kaplinsky (2000) comment on the modest and declining level of supply chain development by OEMs in SA, in a paper focusing on the fate of the SA motor industry components sector in the face of globalisation.

In addition to this lack of literature focusing primarily on the topic of *supplier development* in the SA motor industry, there is also a dearth of *empirical* research measuring the extent of the use of the various supplier development practices in the SA motor industry as a whole.

This parallels the scarcity of empirical research in the international supplier development literature concerning the motor industry, as mentioned above. In the context of SA, the dearth of empirical data is surprising, given that the first mid-term review of the MIDP in 2000 found a lack of emphasis on supplier development in the SA motor industry (Lamprecht, 2006). There is also an absence of research into supplier development within the *B-BBEE* context. For example, do SA OEMs have special B-BBEE supplier development policies and strategies, like the Minority Supplier Development Programmes in the US?

The SA literature to date also lacks *dyadic* studies considering the perspectives of the OEMs and T1 suppliers simultaneously, regarding supplier development issues, which again mirrors a similar gap in the international supplier development research. Gathering the perspectives of the buyers and the suppliers, together with other organisations playing a role in supplier development in SA, provides the opportunity to develop a deeper and more balanced understanding of supplier development in the SA motor industry.

Developing a holistic picture of supplier development in the SA motor industry is valuable since the forthcoming SA government support programme for the motor industry, the APDP, as well as other government programmes, such as the Black Business Supplier Development Programme, highlights the SA government's focus on supplier development. Thus, the current status of supplier development in the motor industry needs to be analysed in order to measure the success of such programmes and also to use these findings as a benchmark in future studies. Consequently, this research seeks to investigate the following research questions and objectives.

1.3 Research Questions and Objectives

The **research question** addressed in this dissertation is as follows:

What is the nature and extent of supplier development strategy, policy and practices in the SA motor industry?

In order to effectively answer the above stated question, it is necessary to unpack it into short, researchable sub-questions, which, when answered, will collectively provide answers to the main research question.

The **sub-questions** emerging from the main question are:

- What is the nature and extent of supplier development strategy, policy and practices used by OEMs located in SA with respect to T1 and T2 suppliers, from the perspective of both the OEMs *and* the T1 suppliers?
- What is the nature and extent of supplier development strategy, policy and practices used by T1 motor industry suppliers located in SA with respect to T2 suppliers?
- What role is played by organisations, such as the government, in facilitating supplier development in the SA motor industry?
- How do the above practices compare to the international literature and experience relating to supplier development?

The above research questions give rise to the following **research objectives**:

- To fill a void in the literature by focusing exclusively on *supplier development* in the SA motor industry;

- To add to the international research by providing supplier development *survey* data relating *exclusively* to the motor industry;
- To provide a *dyadic* view of supplier development in SA, by simultaneously obtaining the perspectives of the OEMs and T1 suppliers;
- To provide a holistic picture of the current supplier development status in the motor industry, that can be used as a benchmark for future studies. This will assist in gauging the success of the supplier development objective of the new APDP legislation and Black Business Supplier Development Programme, amongst others. It will also facilitate an investigation into the impact (if any) of the world financial crisis on supplier development strategy.

The rest of the dissertation is organized as follows: Chapter 2 reviews the literature concerning supplier development practices in general, as well as those used in the international and SA motor industry, in particular. Chapter 3 discusses the methodology employed in this dissertation. Chapter 4 presents the results of the fieldwork, together with a discussion of the findings. The dissertation is concluded with a summary in Chapter 5 of the main findings and recommendations of areas for further research.

Chapter 2

Literature Review: Supplier Development Practices

This chapter reviews the general supplier development literature. The trends in the literature are presented, as well as a detailed description of supplier development practices in use. Particular attention is focused on the literature relating to the international and SA motor industry. A brief history of the SA motor industry is presented to provide the background context in which supplier development occurs.

2.1 Supplier Development Literature

Context and Coverage

In the context of the supply chain management literature mentioned previously, the literature focusing on *supplier development* is extensive. It deals with issues such as the types and classifications of supplier development practices (Wagner, 2006a; Krause, 1997; Hartley and Jones, 1997; Sanchez-Rodriguez, Hemsworth and Martinez-Lorente, 2005); the benefits of supplier development practices (Krause, 1997; Watts and Hahn, 1993; Carr, Kaynak, Hartley and Ross, 2008); the impact of the various supplier development practices on buyer competitive advantage and purchasing performance (Li, Humphreys, Yeung and Cheng, 2007; Sanchez-Rodriguez *et al*., 2005); the necessary conditions for supplier development (Krause and Ellram, 1997a; 1997b; Krause and Handfield, 1999); the pitfalls of supplier development practices (Handfield *et al*., 2000); and the differences between Eastern and Western practices (Dyer, 1997; Cousins and Stanwix, 2001).

Further supplier development matters that have been examined include the differences between supplier development in industrial versus service industries (Krause and Scannell, 2002; Ellram and Krause, 1994); factors influencing supplier development (Krause, Handfield and Scannell, 1998; Krause, 1999; Krause and Ellram, 1997a; 1997b); the nature and theories of inter-firm relationships (Shook, Adams and Ketchen, 2009; Terpend, Tyler, Krause and Handfield, 2008; Wagner and Johnson, 2004; Wu and Choi, 2005; Dyer, 1997; Krause *et al*., 2007; Cai and Yang, 2008); supplier development from the minority supplier's perspective (Krause, Ragatz and Hughley, 1999; Edmondson, Suh and Munchus, 2008); and the perspective of the buying firm versus that of the supplier regarding supplier development (Forker, Ruch and Hershauer, 1999; Forker and Stannack, 2000; Wagner, 2006a; Ellram, 1995).

From the various aspects of supplier development highlighted above, it is evident that the term "supplier development" covers a wide range of activities and strategies. On the one extreme, a firm may adopt a strategy involving no, or very limited, supplier development efforts, such as informal supplier evaluation and a request for improved performance (Krause, 1997). At the other extreme, a firm's strategy may involve extensive efforts, such as the training of the supplier's personnel and investment in the supplier's operation (Krause, 1997).

Range of Supplier Development Practices

The literature shows that firms may use a variety of activities to develop a supplier's performance and / or capabilities (Hines, 1994; Krause, 1997; 1999). These activities include: introducing competition into the supply base (Guinipero, 1990; Dyer and Ouchi,

1993; Krause 1997); evaluating a supplier's performance (Guinipero, 1990; Hahn *et al.*, 1990; Watts and Hahn, 1993) and raising performance expectations (Krause, 1997). Further supplier development activities encompass: recognition and awards for good supplier performance (Lascelles and Dale, 1989); promises of increased present and future benefits if the supplier's performance improves (Guinipero, 1990); training and educating the supplier's personnel (Krause, 1997); exchanging personnel between the buying firm and the supplier (Hartley and Choi, 1996); and direct investment in the supplier (Krause, 1997).

Krause's 1997 survey relating to the supplier development practices of 527 manufacturing and service firms in the US made a significant contribution to supplier development research (Wagner, 2006a). Krause (1997) found that the firms in his study were similar in the practices they preferred to use, and those practices that they rarely used. For example, he found that training / education of supplier personnel and investment in supplier operations were rarely used in comparison with other activities, such as site visits to suppliers' premises, or the use of supplier certification programs.

A single firm may engage in different degrees of supplier development activity with its various suppliers (Krause, 1997). For example, intensive supplier development may be used for certain key suppliers, while other suppliers are kept at arm's length. There are many factors which influence the cost versus benefit decisions of a firm's choice as to the extent of their supplier development efforts. Influencing factors include the type of industry, the buying firm's environment, the importance of the procured item to the buyer, the characteristics of the supply base, and the buying firm's top management's attitude towards suppliers (Krause *et al*., 1998; Krause, 1999).

Industrial firms have been found to make more use of supplier development than service firms (Krause and Scannell, 2002; Wagner, 2006a). The buying firm's perspective of the supplier's commitment to the relationship has been found to affect the buying firm's inclination to engage in supplier development activities (Krause, 1999). The appropriate supplier development strategy is thus industry, buying firm and supplier specific.

Buyer Versus Supplier Perspectives of Supplier Development

The literature highlights the inherent potential for the perception of the intentions behind supplier development efforts, the successes of various supplier development practices, and the sharing of the benefits of supplier development, to differ between buyers and suppliers. Forker *et al*. (1999) found substantial differences between the perceptions of the buyer and suppliers concerning the buyer's supplier development practices. They conclude that the success of a supplier development programme requires that it is well communicated and understood by the suppliers. Forker and Stannack (2000) found that buyers and suppliers had larger differences in their perceptions about their relationships in cooperative relationships compared with arm's length relationships. This literature highlights the need for *dyadic* studies of supplier development, to obtain a balanced perspective.

Alternatives to Supplier Development

The literature has shown that firms often find suppliers' performance and / or capabilities deficient in areas such as quality, delivery, cost reduction, adoption of new technologies, and handling of design changes (Krause, 1997). While supplier development is one strategic response to deficient suppliers, it is noted that there are other strategic options which may be available to the buyer. These are: (i) vertical integration, where the outsourced item is

brought in-house and produced internally and (ii) supplier switching, where the buyer switches to a more capable supplier (Krause *et al.*, 1998; Krause *et al.*, 2000; Handfield *et al*., 2000).

The decision between the above alternatives often depends on the price, volume, and the strategic nature of the product or service. When a supplier provides an innovative product or process technology, but is performing poorly, the buyer may wish to protect this potential advantage by bringing it in-house through acquiring the supplier via vertical integration (Handfield *et al*., 2000). However, vertical integration may need large investment and can potentially take the buying firm's focus away from their core competencies (Wagner, 2006a). Further disadvantages of vertical integration include the acquisition premium and a tendency toward increased wages in the acquired firm, transferred from the higher wages from the (usually) larger acquiring company (Dyer and Ouchi, 1993).

Supplier switching may not be feasible due to a lack of alternative suppliers, or prohibitively high switching costs (Wagner, 2006a). Switching may be appropriate for low-value-added, non-strategic commodities, where the cost of changing to a new supplier is low (Handfield *et al*., 2000). Supplier development may be the preferred strategy when, for example, there are no alternative suppliers to switch to, or where cost versus benefit analysis suggests that the product should remain outsourced rather than being brought in-house. Thus, a firm's choice of supplier development strategy is inextricably linked to their choice of more overarching strategies, such as whether to outsource or vertically integrate.

Risks and Rewards of Supplier Development

According to Krause and Handfield (1999), the outcome of a successful supplier development strategy is a self-reliant supplier that can initiate their own improvement projects based on performance feedback from the buying firm. Supplier development should not be viewed as a one-way activity; often it requires financial and human capital commitment from *both* the supplier and the buying firm (Handfield *et al.*, 2000). Wagner (2006a) suggests that recent empirical studies have confirmed that supplier development can have a positive impact on product, supplier and buyer performance, which has been the research question of many studies (see De Toni and Nassimbeni, 2000; Krause *et al*., 2000; Prahinski and Benton 2004). Given the benefits of supplier development, it is somewhat surprising that Wagner's overall perception, from his 2006 survey of 173 large industrial firms in Germany, Switzerland and Austria, is that firms are reluctant to develop suppliers. He suggests that "with suppliers making a significant contribution to a company's competitive position, it would be a fatal mistake if companies were to neglect the potential of supplier development practices" (Wagner, 2006a, p.566).

While improving the effectiveness of supply chain management via supplier development promises many advantages, there are risks and challenges in its implementation (Wagner and Bode, 2006). One risk is increased dependency, which can result in negative events up- or down-stream, having more significant repercussions for other supply chain members (Kajuter, 2003). Another risk is opportunistic behaviour by firms, which may result from a lack of goal congruence between the buyer and supplier, or an unfair distribution of the benefits of collaboration (Spekman *et al.*, 1998). Thus, there are circumstances where arm's length transactions are more appropriate than collaborative trading relationships (Spekman *et*

al., 1998). It follows that intense supplier development may not be the appropriate response for all firms (Handfield *et al*., 2000) and all situations. It is understandable why companies may be reluctant to form co-operative buyer-supplier relationships, through embedded supplier development practices, given the potential risks involved. It is therefore important to gain some insights into the theoretical foundations that explain the formation of buyer-supplier relationships and collaboration, which may include supplier development.

Theories Underlying Intercompany Relationships and Collaboration

Many authors have grappled with the formulation and adaptation of theories to explain the nature and formation of intercompany relationships, including supply chain management relationships, collaborative relationships, and strategic sourcing. However, no single, overarching theory has emerged. Some of the theories offer rival explanations of the same phenomena, while some complement each others' explanative power (Grant, 1996). There is scarce literature exploring the theory behind "supplier development", *per se*. However, the more general theories behind supply chain management (SCM) and collaboration are relevant to the understanding of supplier development. Krause *et al*. (2007) reiterate this by considering supplier development as a tangible form of inter-organisational exchange that falls under the auspices of SCM research.

Cai and Yang (2008) found that there are two key governance theories for buyer-supplier relationships: Transaction Cost Economics (TCE) and Resource Dependence Theory (RDT). The basic TCE model by Williamson in 1985 maintains that a transaction will occur either in an open market or within a hierarchy that allows it to be conducted most efficiently (Cai and Yang, 2008). A central premise of TCE theory is that transaction costs increase as

transactors make greater asset-specific investments, since transactors must safeguard against the hazards of opportunism such as lying, cheating or violation of agreements (Dyer, 1997). Asset-specific or transaction-specific investments are those human and physical assets dedicated by a company to a particular relationship, which involve sunk costs that are unrecoverable if the relationship is terminated prematurely (Cai and Yang, 2008). Dyer (1997) explains that transaction costs consist of search costs (such as the costs of gathering information to identify and evaluate potential trading partners), contracting costs (associated with negotiating and writing an agreement), monitoring costs (associated with monitoring the agreement to ensure that each party fulfils the predetermined set of obligations), and enforcement costs (associated with ex post bargaining and sanctioning a trading partner that does not perform according to the agreement).

To protect transaction-specific investments, the basic TCE model maintains that hierarchies such as vertical integration could serve as a safeguard through adequate monitoring and surveillance capabilities, more sensitive reward structures and reduction of the opportunistic party's ability to profit from such behaviours (Cai and Yang, 2008). The basic TCE model has been extended to include alternative safeguards and governance structures to vertical integration, such as informal, relation-oriented governance forms; 'self-enforcing' agreements; private ordering; and trust. The self-enforcing agreements include informal safeguards such as: relational or goodwill trust and reputation, as well as formal safeguards such as financial hostages and specialised investment hostages (Dyer, 1997). Supplier development could be regarded as an ingredient which allows for an alternative governance structure to vertical integration.

Dyer (1997) found that Japanese OEMs have lower transaction costs than their US counterparts due to: repeated transactions with a small supply base, economies of scale and scope in transacting with that small supplier group, extensive inter-firm information sharing which reduces asymmetric information, the use of non-contractual, self-enforcing safeguards (that is, goodwill trust) which are effective for an indefinite time horizon, as opposed to contracts which are effective for a finite time horizon, and investment in co-specialised assets. He argues that transaction costs do not necessarily increase with an increase in relation-specific investments, as demonstrated by the Japanese OEMs and suppliers. It can be argued that intense supplier development may play a role in safeguarding transaction-specific investments by building trust and information sharing channels, as demonstrated successfully by Japanese firms.

Resource-dependence theory (RDT) views organisations as coalitions which alter their structures and patterns of behaviours to acquire and maintain needed external resources (Cai and Yang, 2008). The main premise of RDT is that organisations will seek to reduce uncertainty and manage dependence by purposely structuring their exchange relationships by means of formal or informal linkages with other organisations. Informal linkages include negotiated environments and inter-organisational arrangements that allow companies to handle environmental uncertainty and inter-organisational dependence. Companies may only agree to enter such informal linkages when they expect that support and cooperation from each other are available (Cai and Yang, 2008).

Cai and Yang (2008) suggest that cooperation between buyers and suppliers is considered a critical determinant of successful SCM. Supplier development requires supply chain members to work closely with each other. They found that forming cooperative norms is an

essential step in guiding this cooperation-oriented supply chain practice. Cooperative norms are the shared belief and expectation of two parties that they must work together to achieve mutual goals. They found that such norms have been advocated as a major governance mechanism in a buyer-supplier relationship and can exert considerable impact on relationship outcomes. Supplier development may thus be seen as a vehicle to enhance cooperative norms which may lead to more successful SCM.

Ahuja (2000) provides a dual perspective on the formation of inter-firm linkages or alliances. He uses resource-based and social network theory to argue that the ability of firms to collaborate depends on their inducements to form linkages, as well as the opportunities available to them to form linkages. Other theories concerning inter-firm relationships include that of Wagner and Johnson (2004) who put forward the notion of strategic supplier portfolio management, meaning the management of an array of supplier relationships, each having various characteristics and each serving the firm in different ways. The firm manages its supplier relationships not only individually, but also as a set, developing a portfolio of supplier relationships that leads to an optimised supplier base for the firm. Wu and Choi (2005) explore the buyer-supplier-supplier relationship triad which includes how the buying firm manages relationships between suppliers, since this has an impact on the buying firm. Gulati, Nohria and Zaheer (2000) explore the notion of strategic networks to explain firm behaviour and performance. Terpend *et al*. (2008) provide a review of two decades of articles on buyer-supplier relationships in four prominent US based academic journals.

Krause *et al*. (2007) use a social capital lens to better understand the value created by US firms willing to commit to long-term relationships to develop social capital with key suppliers through supplier development. They contend that the relationship between value

creation and inter-organisational relationships has been explored using resource dependence theory, marketing channel theory, transaction cost economics, transactional value analysis, resource-based theory, social capital theory, and information processing theory. "A central proposition of these theories is that when organisations invest in relation-specific assets, engage in knowledge exchange, and combine resources through governance mechanisms, a supernormal profit can be derived on the part of both exchange parties (Krause *et al*., 2007; p.529). This research again highlights the benefits of intense supplier development practices.

A model that has been used by authors to analyse competitive advantage is *value chain analysis* which arose out of the work of Michael Porter in the mid 1980s (see Kaplinsky and Morris, 2001; Lee and Yang, 2000; Dekker, 2003; Chivaka, 2007; Vonderembse, Uppal, Huang and Dismukes, 2006). In value chain analysis the firm is modelled as a chain of value-creating activities. The *value chain* "describes the full range of activities which are required to bring a product or services from conception, through the different phases of production,...., delivery to final consumers, and final disposal after use" (Kaplinsky and Morris, 2001, p.4). A firm's value chain needs to be considered in the context of their suppliers' and customers' value chains forming what Porter called a *value system*.

In a value chain, different types of relationships or "linkages" can be distinguished, including relationships between activities and between buyers and suppliers (Dekker, 2003). A "linkage" exists in a value chain when the costs and performance of one activity impacts on another activity. Such interdependence or linkages between activities needs to be managed by coordination mechanisms (Dekker, 2003). Value chain analysis is a mechanism that facilitates the optimization and coordination of interdependent activities in the value chain, which may cross organizational boundaries so as to bring about competitive advantage

(Dekker, 2003). The management of linkages in a value chain is thus closely linked to *supply chain management*. When trying to perform joint value chain analysis between buyers and suppliers in the supply chain, the firms need to share cost and performance information (Dekker, 2003). Supplier development may form part of a possible coordination mechanism and support the sharing of such information to optimise the value chain.

Lamming (1993) focuses his attention on the various theories of collaboration as it relates to the motor industry. He discusses Contractor and Lorange's (1998) list of reasons for collaboration, being: risk reduction, economies of scale and / or rationalisation, technology exchanges, co-opting or blocking competition, overcoming government-mandated trade or investment barriers, facilitating initial international expansion of inexperienced firms, and vertical quasi-integration advantages of linking the complementary contributions of the partners in the value chain. Dodgson (1991), cited in Lamming (1993), adds technological complexity and technological uncertainty to the list of reasons for collaboration. Dodgson concludes that while no clear theory of collaboration has emerged, the following are dominant in the theory: new institutional economics, strategic competitive analysis, technological primacy / innovations networks, lifecycles, industrial districts / restructuring, resource-based perspective, dynamic capabilities, and organisational learning.

Lamming discusses the relevance of the above theories to the motor industry and goes on to propose a four phase model of OEM-Supplier relationships developed from interviews with 129 companies in twelve countries. The four phases are: traditional (before 1975), stress (1972 to 1985), resolved (1982 onwards) and partnership / Japanese (1990 onwards). The partnership model represents "best practice" with much collaboration, including supplier development. The purpose of the model was to provide a target, not to describe the existing

situation. From this model, the post-Japanese model was formulated from which the lean supply model emerged, based on equality between collaborators, extending beyond supplier development. "Lean supply cannot be achieved by one company alone – it is intrinsically the combination of the strategies of the supplier and the customer together – true interaction" (Lamming, 1993, p204). Lamming (1993) argues that lean supply requires collaboration and may itself in turn lead to further collaboration.

Shook *et al*. (2009) discuss a "theoretical toolbox" for strategic sourcing and supply management by drawing from ten well-established organizational theories (institutional theory, resource dependence theory, network theory, systems theory, resource / knowledge based views of the firm, transaction cost economics, agency theory, strategic choice theory, sociocognitive theory, and critical theory). They provide insights into many interrelated strategic sourcing questions, such as when to make, buy or ally; how many and which suppliers; and how to manage sourcing relationships to understand strategic sourcing. They offer this foundation for future theory-building activities in sourcing and supply management research.

In conclusion, the literature concerning the theory underlying intercompany relationships and collaboration borrows from many theoretical views and looks at these relationships through many different lenses. However, a comprehensive analysis of the theories underlying *supplier development*, specifically, was not found in the literature.

Firms can choose to deploy supplier development practices in a number of different ways. The literature has classified the supplier development practices in accordance with the nature

of these deployment methods. The various deployment methods are discussed in the following section.

2.2 Deployment of Supplier Development Practices

There are many supplier development practices available to firms. These practices may be used in isolation or in combination with any number of other supplier development practices (Krause, 1997). Wagner (2006a; 2006b) highlights the classification found in the literature between "direct" and "indirect" supplier development practices. "Direct" or "internalised" supplier development refers to the situation where a buying firm plays an active role and dedicates human and / or capital resources to the supplier. Direct supplier development includes: formal evaluation, certification programmes, site-visits to the supplier's premises, supplier achievement recognition, education and training programmes, temporary personnel transfer, inviting the supplier's personnel to the buyer's premises, and the provision of equipment or capital (Krause, 1997; Krause *et al.*, 2000; Wagner, 2006a). Direct supplier development may involve asset specificity by the buying firm (Krause *et al.*, 2000). In such a situation, these investments are non-transferable and the benefits from supplier development are unrecoverable for the buying firm if the relationship with the supplier ceases prematurely. Direct supplier development poses increased potential for opportunistic behaviour by suppliers, as highlighted in the TCE theory.

"Indirect" or "externalized" supplier development refers to the case where a buying firm commits no, or limited, resources to a specific supplier (Wagner, 2006a). For example, firms may use the external market to bring about supplier performance improvements (Krause *et al.*, 2000). Indirect supplier development practices include supplier assessment,

communicating supplier evaluation results and performance goals, increasing a supplier's performance goals, instilling competition among suppliers, supplier incentives, and promises of increased present and future business if supplier performance improves (Krause *et al.*, 2000; Wagner, 2006a).

Wagner, in his survey of 173 large industrial firms in Germany, Switzerland and Austria, found that the overall Likert scale mean for direct supplier development activities is well below the scale average, suggesting that the firms in the sample were generally very hesitant to commit resources to direct supplier development (Wagner, 2006a). According to Wagner, the overall mean of the indirect supplier development activities was significantly higher than that of direct supplier development. He found that a high level of indirect supplier development was usually associated with a high level of direct supplier development, and *vice versa*. He suggests that these two categories of practices are conducted consecutively in corporate practice, such that direct supplier development follows the basis laid by indirect supplier development. He found that this supports work by Guinipero (1990) and Krause *et al.* (1998), which found that direct supplier development is usually preceded by indirect supplier development.

Another categorisation of supplier development practices was suggested by Sanchez-Rodriguez *et al*. (2005). They classified supplier development practices into: (i) basic, (ii) moderate and (iii) advanced practices, based on the level of a buyer's involvement and the implementation complexity. For example, basic practices would include evaluating supplier performance and providing feedback of the evaluation, as well as sourcing from a limited number of suppliers. Moderate supplier development practices would include site visits, rewards and recognition of supplier achievements in quality improvements, and supplier

certification. Advanced practices would include training, involving suppliers in the buyer's new product design, and intensive information exchanges, such as sharing of accounting, cost and quality information.

Krause *et al.* (1998) differentiated between "reactive" versus "strategic" approaches to supplier development. A reactive approach to supplier development occurs when action is only taken when problems have already occurred, whereas a strategic approach involves instituting measures before problems occur. Firms can use both approaches, but tend to favour one or the other. Krause *et al*. (1998) found that often supplier development is first used as a reactive tool and then later, as the supplier's performance and capability levels improve, as a strategic tool.

The literature differentiates between "results-oriented" and "process-oriented" supplier development practices (Hartley and Jones, 1997). While results-oriented supplier development may solve specific production problems for suppliers, this achievement may be short-lived and end with the particular result. In contrast, process-oriented supplier development assists suppliers in achieving current and future results by focusing on the supplier's *capability* for improvement. An example of process-oriented supplier development is Toyota's supplier support centre, which has a long-term commitment to assist firms with the Toyota Production System (Hartley and Jones, 1997). Another example provided is Honda of America, where a nine step process is used to help suppliers adopt continuous improvement practices. One of the key findings of Watts and Hahn's 1993 cross-industry survey in the US, was that the focus of supplier development activities was mostly short-term in nature, concentrating on improving a supplier's product or service *performance* rather than their *capabilities* (Krause, 1997).

The literature highlights the differences in the supplier development practices of the East compared to the West (Giannakis, 2008). The Eastern cultures have a long history of supplier development practices (Langfield-Smith and Greenwood, 1998). The Western countries have traditionally employed arm's length and even adversarial relationships with their suppliers (Krause, 1999). Western relationships have often involved the use of multiple suppliers, competitive bidding, comprehensive bidding specifications and short-term contracts to achieve a low purchase price. While certain Western firms have more recently modified their approach to suppliers by emulating certain Japanese practices (Langfield-Smith and Greenwood, 1998), there is still a vast distinction. The East versus West contrast is a significant theme in the supplier development literature and is discussed further in the context of the international motor industry in Section 2.4. A detailed discussion of the supplier development practices found in the literature follows.

2.3 Detailed Discussion of Supplier Development Practices

There are numerous supplier development practices described in the literature. The various supplier development practices have been categorised into six themes as follows: competition-based practices, performance-evaluation related practices, training-related practices, rewards-based practices, relationship-building practices, and logistics-related practices. Table 2.1 shows a summary of these practices.

Table 2.1: Supplier Development Practices Categorised into Themes

Supplier Development Practice Theme:		Literature Source:
Theme 1: Competition-Based Practices		
1.1	*Introducing Competition into the Supply Base*	(Krause and Handfield, 1999; Guinipero, 1990; Dyer and Ouchi, 1993; Krause *et al.*, 2000; Krause, 1997; 1999)
1.2	*Enforcing Improvement – The Stick*	(Krause and Handfield, 1999)
Theme 2: Performance-Evaluation Related Practices		
2.1	*Supplier Evaluation and Feedback*	(Watts and Hahn, 1993; Hahn *et al.*, 1990; Guinipero, 1990; Krause *et al.*, 2000; 2007; Krause, 1999; Wagner, 2006a; Krause and Ellram, 1997a; Hines, 1994)
2.2	*Raising Performance Expectations*	(Krause, 1997; 1999)
2.3	*Supplier Certification*	(Burt, 1989)
2.4	*Establishing Performance Improvement in Second-Tier Suppliers*	(Krause and Handfield, 1999)
Theme 3:Training-Related Practices		
3.1	*Training and Education of the Supplier's Personnel*	(Krause *et al.*, 1998; Krause, 1997; Langfield-Smith and Greenwood, 1998; Hahn *et al.*, 1990; Handfield *et al.*, 2000)
3.2	*Exchange of Personnel Between the Buying Firm and the Supplier*	(Hartley and Choi, 1996; Handfield *et al*., 2000)
3.3	*Information Sharing*	(Handfield *et al.*, 2000; Krause *et al*., 2007; Chivaka, 2007; Sanchez-Rodriguez *et al*., 2005; Wagner and Krause, 2008; Krause *et al.*, 2007)
3.4	*Supplier Integration in New Product/Process Development*	(Krause and Handfield, 1999; Sanchez-Rodriguez *et al*., 2005; Forker *et al*., 1999)
3.5	*Buying Company Support of Supplier Learning Networks*	(Bessant *et al*., 2003; Morris *et al*., 2006; Hines, 1994; Hines and Rich, 1998; Dyer and Nobeoca, 2000)
Theme 4: Rewards-Based Practices		
4.1	*Recognition and Awards*	(Lascelles and Dale, 1989; Krause *et al.*, 1998; Krause, 1999; Krause and Handfield, 1999)
4.2	*The Promise of Future Benefits - The Carrot*	(Guinipero, 1990; Krause *et al.*, 1998; Handfield *et al.*, 2000)
4.3	*Direct Investment by the Buying Firm*	(Langfield-Smith and Greenwood, 1998; Handfield *et al.*, 2000; Krause, 1997; Krause *et al.*, 2000)
Theme 5: Relationship-Building Practices		
5.1	*Communication with Suppliers*	(Tarn *et al*., 2002)
5.2	*Developing Long-Term Relationships*	(Krause *et al.*, 1998; Wagner and Krause, 2008)
5.3	*Dedicated Supplier Development Team*	(Krause *et al.*, 2007; Krause and Handfield, 1999; Dyer and Ouchi, 1993)
5.4	*Supplier Development Programmes for Special Interest Groups*	(Shah and Ram, 2006; Edmondson *et al*., 2008)
5.5	*Trust Building*	(Svensson, 2001; Handfield and Bechtel, 2002)
5.6	*Supply Base Rationalisation*	(Sanchez-Rodriguez *et al*., 2005; Choi and Krause, 2006; De Toni *et al*., 1994; Krause, 1997; Dyer and Ouchi, 1993)
Theme 6: Logistics-Related Practices		
6.1	*Geographical Location*	(Donnelly *et al.*, 2002; Morris *et al.*, 2004).

2.3.1 Theme 1: Competition-Based Practices

2.3.1 (i) Introducing Competition into the Supply Base

The literature has shown that buying firms may use market forces to try to get better performance from their suppliers (Krause and Handfield, 1999; Guinipero, 1990; Dyer and Ouchi, 1993; Krause *et al.*, 2000; Krause, 1999). This does not necessarily mean that more than one supplier is actually used. The point here is that the suppliers are made aware of the competition. This can be achieved, for example, by requesting competitive bids from multiple suppliers.

2.3.1 (ii) Enforcing Improvement – "The Stick"

Buying firms may try to develop suppliers by the threat (and action if required) of taking away business from poor performers (Krause and Handfield, 1999).

2.3.2 Theme 2: Performance-Evaluation Related Practices

2.3.2 (i) Supplier Evaluation and Feedback

Supplier evaluation and feedback has been used to develop suppliers (see Watts and Hahn, 1993; Hahn *et al.*, 1990; Guinipero, 1990; Krause *et al.*, 2000; 2007; Krause, 1999). There are two types of supplier evaluation: formal and informal. Formal supplier evaluation refers to regular, proactive, planned evaluation, usually with pre-determined evaluation criteria. The frequency and intensity of the evaluations is firm specific. Some firms have standardised international evaluation criteria. In contrast, informal, or *ad hoc*, evaluation is where the buying firm only evaluates occasionally or in response to problems.

An important part of the assessment process is the feedback of evaluation results to the supplier (Krause *et al.*, 2000). The feedback clarifies the buying firm's expectations and provides the supplier with direction for improvement. The feedback may include a comparison of the firm to the market, enabling market pressure to be used to obtain improvement in supplier performance.

Supplier evaluation can help identify where supplier development should be concentrated (Hahn *et al.*, 1990; Krause and Ellram, 1997a). It can provide a benchmark against which the outcomes derived from supplier development activities can be evaluated (Hines, 1994; Krause and Ellram, 1997a). Krause and Ellram (1997a) suggest that supplier evaluation or grading should be a prerequisite for more extensive supplier development activities. Watts and Hahn (1993), in their US survey, found that the most commonly cited standards against which suppliers are gauged are quality, delivery, price and service, as well as financial situation and reliability.

2.3.2 (ii) Raising Performance Expectations

In some cases, a supplier's performance may be improved simply by the buying firm requesting, verbally or in writing, for improved performance (see Krause, 1999).

2.3.2 (iii) Supplier Certification

As part of a quality control system, suppliers may be required to be certified. This certification process can motivate suppliers to meet buyer's quality requirements (Burt, 1989). Certification can reduce inspection time and costs for the buying firm.

2.3.2 (iv) Establishing Performance Improvement in Second-Tier Suppliers

Due to the increased responsibility placed on T1 suppliers, there can be a "domino effect" on the T2 and third-tier (T3) suppliers, with these suppliers also taking on more responsibility. Thus, some buying firms may have supplier development strategies that include T2 suppliers directly or indirectly (Krause and Handfield, 1999). They may choose to develop certain T2 suppliers themselves, or assist T1 suppliers in forming supplier development strategies for their suppliers.

2.3.3 Theme 3: Training-Related Practices

2.3.3 (i) Training and Education of the Supplier's Personnel

Training of suppliers in quality management, new technologies, skills training, and the buying firm's philosophy, is an important aspect of direct supplier development. Buyers may develop supplier-focused total cost management programs to assist in identifying and eliminating non-value-added activities (Krause *et al.*, 1998). Krause, in his large cross-industry survey in the US, found that the training and education supplier development practices mostly concerned quality improvement, including topics such as statistical process control, total quality management, design of experiments, sampling methods, inspection techniques, and ISO 9000 (Krause, 1997). Other subject areas included safety procedures, material requirements planning, and information regarding the use of the supplier's product by the firms.

Langfield-Smith and Greenwood (1998), in conducting a case study of Toyota Australia and two of its key suppliers, found the importance of experiential learning in the development of

cooperative buyer-supplier relationships. This is based on the premise that individuals learn new skills and react to change better if they experience new systems themselves, or are directly involved in the change. Automotive companies have used this in their supplier development programmes, where suppliers have the opportunity to directly experience new production methods (Hahn *et al.*, 1990; Womack and Jones, 1994; Langfield-Smith and Greenwood, 1998).

Some firms have formalised training policies for suppliers, where the supplier is educated about aspects such as the philosophy and quality requirements of the buying company. For example, Toyota Australia teaches the Toyota Production System (TPS) to suppliers (Langfield-Smith and Greenwood, 1998). Some companies use exemplary suppliers, who have already undergone training, to train other suppliers. For example, Toyota Australia has used a model of supplier development teaching called the Showcase Programme. In this programme, suppliers learn about the Toyota production system from showcase suppliers.

Training may include introducing *Kaizen* events at the supplier's premises. Undertaking many small *Kaizen* events often uncovers significant benefits without major resource commitments (Handfield *et al.*, 2000). Another example of supplier training by the buyer relates to Hyundai Corporation, the large South Korean automotive manufacturer. Hyundai realised that smaller suppliers with limited resources could not consistently recruit and retain the most skilled engineers, hence most Hyundai *Kaizen* processes focus on small suppliers (Handfield *et al*., 2000). The company sends its own engineers to supplier facilities to perform time and motion studies and teach layout design, in order to improve the supplier's productivity. It also encourages these suppliers to learn, apply, and eventually teach their own suppliers the knowledge that Hyundai transfers to them.

2.3.3 (ii) Exchange of Personnel between the Buying Firm and the Supplier

In order to increase the learning opportunities, the transfer of skills, philosophy, and quality requirements, many firms use site visits and even prolonged staff exchanges to achieve the benefits of supplier development (Hartley and Choi, 1996). Sending the buying firm's staff to the site of the supplier (and *vice versa*) may be employed on an *ad hoc* basis to assist suppliers when problems have been identified. In some cases, these visits may be conducted proactively, at the beginning of the supplier relationship, or as part of the initial training of a new supplier into the buying firm's philosophy and requirements. Site visits to the supplier may take place on a regular, ongoing basis to assist suppliers in developing processes, quality systems and training. For example, BMW does not provide financial support to suppliers, but provides the services of its employees (Handfield *et al*., 2000). BMW sends maintenance engineers, procurement, logistics and quality personnel to suppliers, sometimes for several weeks at a time, in order to identify problems early to prevent them from worsening.

2.3.3 (iii) Information Sharing

"Information exchange" in the literature has typically been defined as "the degree to which each party discloses information that may facilitate the other party's activities" (Heide and Miner, 1992, p.275). Sharing timely and sensitive information between supplier and buyer can reap the rewards of reduced supply chain costs (Handfield *et al.*, 2000). Shared information may relate to capacity planning, delivery practice, price variations, attitude to quality, and the role of research and development (R&D). Knowledge shared by buying firms includes both the transfer of factual knowledge, such as production schedules, and the transfer of tacit, "sticky" knowledge, such as technology roadmaps and shared values

(Krause *et al*., 2008). Some relationships may lead to "open book accounting" or an "open book policy" (Chivaka, 2007). This is where cooperating firms openly share cost information with the aim of overall supply chain cost reduction (Chivaka, 2007; Sanchez-Rodriguez *et al*., 2005). Wagner and Krause (2008) advocate that a buying firm should set goals and the means to achieve these goals, before setting up a supplier development programme and investing in supplier development activities. By engaging in goal-setting activities, buyers and suppliers can be expected to have a shared understanding of what constitutes improvement and how to accomplish it (Krause *et al.,* 2007).

There are risks involved with sharing sensitive information for both buyer and supplier. For example, the buyer may use cost information, provided by the supplier, against the supplier in price negotiations. To overcome the suppliers' reluctance to share information, Honda has used supplier ombudsmen who deal with the human resource issues that are not associated with cost, quality, or delivery (Handfield *et al*., 2000). Honda has found that suppliers communicate more openly with the ombudsmen because they are not involved in contract negotiations. When there are misunderstandings, which may arise due to poor communication, the ombudsman is able to communicate the supplier's perspective to Honda's personnel, while maintaining confidentiality.

2.3.3 (iv) Supplier Integration in New Product / Process Development

Supplier integration in new product / process development has been well documented in the literature (see Krause and Handfield, 1999; Sanchez-Rodriguez *et al*., 2005; Forker *et al*., 1999; Liker, Kamath and Wasti, 1998; Wagner, 2003). Involvement of suppliers in the buyer's new product development process has been described in the literature as a supplier

development practice (Sanchez-Rodriguez *et al*., 2005; Trent and Monczka, 1999). The increased amount of outsourcing and responsibility assigned to T1 suppliers often necessitates collaboration between the buyer and supplier during this initial phase of the product lifecycle.

2.3.3 (v) Buying Company Support of Clusters and Supplier Learning Networks

Many studies have focused on the extension of supplier development and supply chain management into the inter-firm learning area (Bessant, Kaplinsky and Morris, 2003; Morris *et al*., 2006). Cluster and learning networks are not commonly referred to in the supplier development literature as supplier development activities. They are addressed in the literature as topics in their own right. However, it is submitted that when a buying firm *supports* the notion and aims of such networks, such practice falls within the broader context of supplier development as defined in this dissertation.

Hines (1994) found that the most important factor exhibited by the Japanese in building inter-company relationships and a world-class supplier base, is the *Kyoryoku Kai* (literally meaning "cooperative circle") or Supplier Association. A supplier association may be defined as "a mutually benefiting group of a company's most important suppliers brought together on a regular basis in order to achieve strategic and operational alignment through the development of awareness, education and implementation programmes designed to achieve both radical and incremental improvements" (Hines and Rich, 1998, p.526).

Supplier associations are prevalent in the East, but not the West (Hines, 1994). Supplier associations are widespread in Japanese industry, especially in the automotive, electronics and capital equipment industries (Hines, 1994). Examples of supplier associations include

Toyota Japan (Hines and Rich, 1998; Dyer and Nobeoca, 2000) and Mazda Japan (Hines, 1994). Mazda Japan's supplier associations are largely supplier-led, with the agendas set according to the suppliers' suggestions, with regular and planned meetings. Mazda Japan has also helped their suppliers develop their own supplier associations. Hines (1994, p.70) found that lower tier suppliers were being actively developed through a "cascaded series of supplier associations".

Smitka (1991, cited in Hines, 1994) noted that supplier associations in the motor industry make a contribution to the efficiency of the sub-contracting system, as well as to the maintenance of trust. He found that motor industry supplier associations assist with the implementation of just-in-time (JIT) purchasing, statistical process / quality control and value analysis / value engineering across firm boundaries. He also found that supplier associations assist the OEMs to help suppliers improve their production methods and management capabilities. Supplier associations are thus a key feature of the "Eastern" approach to supplier development.

Dyer and Nobeoka (2000, p.346) found that "Toyota and other leading Japanese automakers (notably Honda) have developed bilateral and multilateral knowledge-sharing routines with suppliers that result in superior inter-organisational or network-level learning". The philosophy is encapsulated in *Kyoson Kyoei*, "co-existence and co-prosperity", of the Toyota Group (Toyota's production network in Japan) (Dyer and Nobeoka, 2000). In SA, supplier learning networks can be seen in ventures such as The South African Auto Benchmarking Club and the Durban Auto Cluster.

2.3.4 Theme 4: Rewards-Based Practices

2.3.4 (i) Recognition and Awards

Recognition and awards for outstanding suppliers can serve as an incentive for improved supplier performance (Lascelles and Dale, 1989; Krause *et al.*, 1998; Krause, 1999). These programmes may vary from recognition in the company newsletter to more formal and public recognition in the form of supplier award banquets and supplier council meetings (Krause *et al.*, 1998). Appropriate incentives for improvement should be developed to ensure that the improvement effort is not limited to a single process (Krause and Handfield, 1999). The supplier must be encouraged to maintain their momentum for improvement and to incorporate continuous improvement into the company philosophy (Krause and Handfield, 1999; Krause *et al.*, 1998).

2.3.4 (ii) The Promise of Future Benefits - The "Carrot"

Supplier development may be achieved by promises of increased present and future business if supplier performance improves (see Guinipero, 1990; Krause *et al.*, 1998; Handfield *et al.*, 2000). For example, Hyundai Motor Company uses financial incentives to motivate suppliers to improve; by paying the best performing suppliers first (Handfield *et al.*, 2000). Another incentive that buying firms may offer is entry to markets, and hence economies of scale, which the supplier could not reach on their own.

2.3.4 (iii) Direct Investment by the Buying Firm

Financial assistance may be provided to the supplier in the form of loans, cash flow assistance, engaging in joint share ownership, and so forth (Langfield-Smith and Greenwood,

1998). Sometimes investment by the buying firm may be used to improve supplier infrastructure (Handfield *et al.*, 2000) or to provide equipment (Krause, 1997; Krause *et al.*, 2000). For example, while Honda does not generally invest directly in a supplier's equipment, in some cases it may own a percentage of a supplier's equipment for capitalisation purposes and allow the supplier to repay the investment over time (Handfield *et al*., 2000).

2.3.5 Theme 5: Relationship-Building Practices

2.3.5 (i) Communication

There are many ways in which firms can communicate, for example, via telephone, fax, face-to-face, industry websites, and via Electronic Data Interchange (EDI). Information technology has been found to be crucial for supply chains because of the significant amount of information exchange and coordination needed. Just-in-time (JIT) production requires increased information exchange and Just-in-sequence (JIS) supply requires fully integrated information technology systems (Mohtashami, Deek and Im, 2003; Tarn, Yen and Beaumont, 2002). Moodley (2002) contends that the internet holds the promise of enhanced access to the global marketplace for the SA motor industry and warns that SA firms may be missing out on the benefits of internet-related communication. General Motors, Ford, (the former) Daimler-Chrysler and Renault-Nissan have recognised the power of information technology through the development of Covisint, the giant Detroit-based global automotive virtual marketplace for obtaining suppliers (Moodley, 2001). Moodley (2001) reports that dealing with suppliers online can reduce the cost of making a vehicle by as much as 14 percent.

Covisint also seeks to offer integrated supply chain management, product development and production planning.

2.3.5 (ii) Developing Long-Term Relationships

Cooperative relationships are characterised by long-term perspectives whereas transactional buyer-supplier relationships are characterised by a short-term view (Krause *et al.,* 1998). Based on their 2008 empirical study, Wagner and Krause (2008) suggest that the relationship between the goal to improve a supplier's capabilities and the knowledge transfer from the buyer to the supplier, is influenced positively by the degree of human interaction between the buyer and the supplier.

2.3.5 (iii) Dedicated Supplier Development Team

Many supplier development initiatives require dedicated supplier development teams (Krause *et al.,* 2007). For example, a team may be required to implement *Kaizen* breakthroughs, process mapping, inventory reductions, training, total preventive maintenance, and other joint projects (Krause and Handfield, 1999). An example is the "Best Practice, Best Process, and Best Performance" (BP) supplier development programme of Honda of America (Wagner, 2006b). This programme is implemented by a dedicated supplier development team that supports suppliers in adopting the *Kaizen* philosophy for continuous improvement and organisational change. In Japan, Toyota and Nissan also have large supplier-assistance management-consulting groups that work full-time with suppliers to help them improve key performance indicators and capacity (Dyer and Ouchi, 1993).

2.3.5 (iv) Supplier Development Programmes for Special Interest Group Suppliers

There are supplier development practices specially tailored to particular suppliers, for example, minorities in the US (Shah and Ram, 2006; Edmondson *et al*., 2008) and the previously disadvantaged in SA. Adobor and McMullen (2007) found that due to the US government's efforts over a sustained period, most Fortune 500 companies today use minority supplier initiatives to increase their sourcing from minority business enterprises (MBEs).

While the choice of supplier is usually the decision of the buyer, the mandated affirmative action programmes of US federal, state and city governments have forced some firms to choose minority suppliers in order to compete for government contracts (Adobor and McMullen, 2007). Ford's supplier development initiatives include: T2 programmes in which Ford's largest 600 suppliers report their minority purchases; one-day networking seminars to facilitate both corporate-to-MBE, as well as MBE-to-MBE purchases; classified advertisements to advertise opportunity; and entrepreneurial seminars to urge minorities to go into business, create jobs and so forth[1] (Adobor and McMullen, 2007). The SA political landscape lends itself to similar special interest group supplier development policies.

2.3.5 (v) Trust Building

Trust has been recognised in the literature as important in supply chain relationships (Svensson, 2001; Handfield and Bechtel, 2002). Its importance arises because "it is seen as a phenomenon which contributes to the strength of interpersonal relationships, intra-organisational relationships and inter-organisational relationships in supply chains"

[1] see www.fordmsd.com

(Svensson, 2001, p.647). Handfield and Bechtel (2002) found that trust is positively associated with improved supply chain responsiveness. Practices which build trust and perceived trust contribute to overall supplier development. High levels of perceived trust by buyers towards suppliers have been found in the motor industry in Sweden (Svensson, 2001).

2.3.5 (vi) Supply Base Rationalisation

Sanchez-Rodriguez *et al*. (2005) describes buying from a limited number of suppliers per purchased item as a supplier development practice. Since the 1980s, many companies have reduced the number of suppliers in their supply base (Choi and Krause, 2006; De Toni, Nassimbeni and Tonchia, 1994). Parts standardisation is a further supplier development practice that may complement sourcing from a limited number of suppliers (Sanchez-Rodriguez *et al*., 2005; Handfield *et al*., 2000). Rationalisation by OEMs has been observed in the motor industry (Krause, 1997; Choi and Krause, 2006; Von Corswant and Fredriksson, 2002). Many buying firms now favour single or dual sourcing strategies, as opposed to multiple sourcing, for a given item (Choi and Krause, 2006).

Using multiple suppliers for a single part or component increases the level of coordination needed to improve the efficiency of operations (Choi and Krause, 2006). Having fewer suppliers can enable the buying company to implement a more efficient buyer-supplier interface through saving on inventory management and order control costs. Using fewer suppliers can provide economies of scale and experience curve benefits that can lower transaction and production costs (Dyer and Ouchi, 1993). The focus of this effort is reduction of administrative and transaction costs, and cost savings from concentrating greater purchase volumes with fewer suppliers (Choi and Krause, 2006). However, Choi and Krause

(2006, p.649) warn that "blindly lowering the complexity of a supply base may not always be desirable".

2.3.6 Theme 6: Logistics-Related Practices

2.3.6 (i) Geographical Location

There has been a growing tendency to encourage key suppliers to locate themselves close to assembly plants (Donnelly, Mellahi and Morris, 2002). If suppliers locate in close proximity to OEMs, supplier development can be facilitated by, for example, enabling OEM engineers to assist with problems at the supplier's plant. "Supplier parks" have become a feature in many countries such as Latin America (Morris *et al.*, 2004), Germany (Pfohl and Gareis, 2005) and SA (Morris *et al.*, 2004). Supplier parks are often owned by the OEMs and invariably make switching costs very high (Morris *et al.*, 2004). Supplier parks assist in the creation of supplier associations through which knowledge can be disseminated from the OEMs to their preferred suppliers, as is prevalent in the East.

Morris *et al*. (2004) explain that the geographical spread of production in the motor industry has largely been achieved by using the same basic design in several countries and the supply of parts, particularly sub-assemblies, by the same companies in different locations. Such strategies can be called "follow design / follow sourcing" (Humphrey, 2000; Morris *et al.*, 2004). Follow design and follow sourcing means that when an OEM introduces a European, US or Japanese design into another country, for example China, India, Brazil or Eastern Europe, both the design and suppliers would be the same (Morris *et al.*, 2004).

Concluding Remarks arising from the General Supplier Development Literature

The above discussion highlights the wide variety of supplier development practices available, as summarised in Table 2.1. There may be alternatives to adopting a strategy of supplier development, such as vertical integration or supplier switching. If supplier development is the chosen strategy, there is a range of intensity of usage and combinations of supplier development practices that can be adopted. Supplier development practices can be categorised in a number of different ways relating to the nature of their deployment. The choice of supplier development strategy differs from industry to industry, culture to culture and from firm to firm. The literature highlights the contrast between the supplier development history and practices of the East compared to the West.

The international motor industry has been identified as a leader in the adoption of supplier development practices (Wagner, 2006a). Wagner's 2006 cross-industry survey analysis shows the motor industry to be the industry that invests the most human resources into supplier development and is second only to the construction industry as far as capital resource investment is concerned (Wagner, 2006a). The nature of the construction industry, where suppliers may suffer cash flow problems, explains the high use of financial supplier development activity in that industry (Wagner, 2006a). Supplier development in the international motor industry is discussed in the following section.

2.4 Supplier Development Practices in the International Motor Industry

A review of the supplier development literature relating to the international motor industry again highlights the distinction between "Eastern" and "Western" practices, just as was the case in the cross-industry literature. Womack, Jones and Roos (1990) discuss the differences

in manufacturing philosophies between the Japanese OEMs and their Western equivalents in their book "The Machine That Changed The World". Particularly up until the 1990s, the Japanese motor industry followed a very different approach to the buyer-supplier relationship compared to the West (Dyer and Ouchi, 1993; Pavlinek and Janak, 2007). The Toyota philosophy of doing business, which transcends even an East / West distinction, has also fascinated businessmen and academics alike (see Magee, 2007).

In the Japanese system, suppliers are involved early in the product lifecycle, are given significant responsibility and communicate extensively with the OEM (Dyer and Ouchi, 1993). Buyer-supplier relationships are long-term, with supply contracts typically awarded for the lifetime of a particular model (Pavlinek and Janak, 2007). Eastern OEMs, such as Toyota and Nissan, have been found to provide extensive assistance to suppliers to improve their capabilities (Dyer and Ouchi, 1993). There are generally two suppliers for each item procured and by providing assistance to both suppliers, the OEM ensures competition, while still enjoying the benefits of a rationalised supply base.

In return, suppliers in the East meet exacting standards of product development, quality, delivery, pre-arranged price-reductions over the lifetime of components, and a worldwide presence, to enable OEMs to source components on a worldwide basis (Pavlinek and Janak, 2007). The Japanese suppliers often invest in customised equipment at the supplier's premises that would be rendered useless if the buyer no longer used the supplier (Dyer and Ouchi, 1993). The goal of Japanese partnerships is "to create a 'see-through' value chain where both parties' costs and problems are visible. Then both parties can work jointly to solve the problems and expand rather than split the pie" (Dyer and Ouchi, 1993, p.53).

Hines (1994, p.67) found that the supplier networks in Japan are characterised by: "a many tiered system with high bought-in content at each level; a close and flexible long-term relationship between buyer and seller; a small number of direct suppliers; a reliance on small sub-contractors; price determination through target costing; a high degree of strategic and operational assistance given to suppliers; a high degree of devolved design and supplier driven innovation". Supplier associations play an important role in the Eastern buyer-supplier relationships.

The Japanese tend to use a "multi-pronged approach" to supplier development, using a combination of supplier development practices (Krause, 1997, p.15). For example, competition is used to ensure supplier competitiveness, by sourcing from a small number of suppliers for each input, instead of a single source (Dyer and Ouchi, 1993; Krause, 1997), while at the same time, extensive supplier development is used on these few suppliers (Krause, 1997). In contrast, the traditional US motor industry buyer-supplier relationship tends to be based on arm's length, short-term contracts, where the OEMs conduct the majority of design and product development (Dyer and Ouchi, 1993; Pavlinek and Janak, 2007).

The literature suggests that the different practices between the East and West may at times be a necessity because of differing business and cultural environments. Langfield-Smith and Greenwood (1998) found that there are several reasons why many Western companies may not see it as possible, or even desirable, to copy the entire Japanese framework in their motor industry. For example, motor industries in many Western countries have a horizontal supplier structure, where OEMs share the same suppliers, whereas Japanese OEMs mostly have a dedicated group of suppliers. The Japanese structure results in a high level of

dependency between the buyer and suppliers, enabling greater technological diffusion, tighter communication and co-operation, and the development of compatible information systems.

Another difference reported in the environments faced by the East and West is the higher levels of buyer-supplier trust found in the East compared to their Western counterparts. For example, in Japan, life-long employment, face-to-face contact in negotiations, majority share ownership between buyers and suppliers, and the sharing of career paths between firms, is common practice (Dyer and Ouchi, 1993; Langfield-Smith and Greenwood, 1998). Such cultural and business norms lend themselves to higher buyer-supplier trust. When introducing the Japanese manufacturing systems into the West (such as the Toyota Production System) a problem experienced was that Western employees considered the fast pace of work, strict work rules and high stress associated with Japanese manufacturing systems as excessive, particularly when first introduced, and when it was a vast change from existing methods (Langfield-Smith and Greenwood, 1998).

As mentioned previously, the review of the literature shows a lack of surveys of supplier development practices relating *exclusively* to the motor industry. However, the motor industry is well represented in the cross-industry supplier development surveys (Krause, 1997; Wagner, 2006a). The supplier development practices in the SA motor industry are discussed in the next section.

2.5 Supplier Development Practices in the SA Motor Industry

Before looking at the supplier development literature in the SA motor industry, a brief historical background of the industry is presented, together with a synopsis of the current

situation. This provides the background context in which supplier development occurs in the SA motor industry.

2.5.1 Brief History of the SA Motor Industry

The national incentives and legislative landscape affecting the SA motor industry has had a significant influence on decision-making in the industry. This is reiterated by Flatters (2002, p.2) who states: "One thing that distinguishes the motor industry from other industrial sectors in South Africa is the importance of government policies in steering its development. The policies that have driven the auto sector are central to understanding the sector's history and its recent accomplishments".

The first SA motor assembly plants were established in the 1920s and from the outset, the industry was characterised by a high level of protection; initially achieved by high import tariffs (Black and Mitchell, 2002). The industry grew as an assembly industry catering for the domestic market, consisting of many small-scale plants, often producing many different models and even different makes. These practices resulted in high unit costs and low domestic content (Flatters, 2002). A policy of classic import substitution was followed up to 1961.

From 1961 to 1989, Phases I to V of the local content programmes (local content as measured by weight) were introduced as a policy response to very low local content (Damoense and Simon, 2004). This quickly led to the emergence of a domestic components industry, characterised once again by small-scale plants operating at high unit costs (Black and Mitchell, 2002). As a way of trying to minimise the impact of the local content requirement, OEMs generally chose to source heavier components, such as a car's frame,

locally. This demonstrates how decisions of industry participants are influenced by government incentives.

During the 1980s the international campaign against the Apartheid regime intensified as political instability in SA increased (Lamprecht, 2006). The imposition of sanctions and the resultant disinvestment by a number of foreign OEMs had an important impact on the development of the SA motor industry; one consequence being very little foreign presence in the industry through to the early 1990s. The various local content programmes and the sanctions era created an artificially diverse domestically-owned automotive components industry in SA. The government's various policy mechanisms forced OEMs into purchasing from domestic component firms, thus giving the components industry a level of political economic leverage. In the early 1990s the majority of SA based OEMs were SA owned, operating under license to multinational corporations and manufacturing exclusively for the domestic and small sub-Saharan African market (Lamprecht, 2006). Until the mid-1990s, the industry was almost entirely inwardly-focused (Kojima and Kaplinsky, 2004). The OEMs were initially encouraged into "partnership" with domestic component firms through significant levels of protection from their global competitors (Lamprecht, 2006). Later, OEMs were forced to purchase much of their inputs from uncompetitive domestic component manufacturers in order to meet the government's local content requirements, or else pay severe excise penalties.

Phase VI of the local content programme, introduced in 1989, was a move away from import substitution to export promotion, with local content now based on value, rather than weight (Black and Mitchell, 2002). Exports of components or vehicles counted as local content and enabled assemblers to reduce actual local content in domestically produced vehicles. Rising

exports gave the OEMs greater flexibility in their sourcing arrangements (Black, 1998; Lamprecht, 2006). This meant greater competition for the local components industry.

The development of the SA motor industry has been significantly influenced by the MIDP, which was implemented in 1995. The MIDP "effectively secured the survival of the South African automotive industry, preserving employment in the automotive sector and generating significant linkages into other sectors such as leather and plastics" (NIPF, 2007). However, Flatters (2002, p.2) warns that "subsidies and protection, whether explicit or hidden, and whether they assist producers in domestic or foreign markets, can have serious economic costs. Their unintended effects are not always obvious, but more often than not they impede rather than promote economic development". The MIDP's key features included reduced tariffs on light vehicles and components, removal of local content requirements, and three duty reduction mechanisms: the Duty Free Allowance, the Import-Export Complementation Scheme, and the Productive Asset Allowance (Black and Mitchell, 2002).

The Duty Free Allowance provides a reduction of duty valuations on imported OEM components, or completely-built-up vehicles, equal to 27 percent of the value of vehicles produced for sale in the domestic market (Flatters, 2002). The Import-Export Complementation Scheme allows vehicle and component exporters to earn tradable "import rebate credit certificates" to offset duties on imported vehicles and components in proportion to the value of the local content of goods exported (Flatters, 2002). Barnes and Morris (2000) found that one of the unforeseen consequences of the MIDP was the abuse of the Import-Export Complementation Scheme due to raw material counting as local content. Domestic OEMs and completely-built-up importers can export low value-added automotive products with high levels of local raw material, in order to import high value-added

components or completely-built-up vehicles. The component manufacturers appear to be protected by the MIDP. However, "this protection for the components' sector is illusory", according to Barnes and Kaplinsky (2000, p.800). The long-term consequence of this lack of protection is technology displacement and the long-term deterioration of the SA automotive components industry (Barnes and Morris, 2000). The Productive Asset Allowance, introduced with the announcement of the mid-term review of the MIDP, grants import duty credits totalling 20 percent of the qualifying new capital investments in the sector, with the duty relief spread over a period of five years from the date of the investment (Flatters, 2002).

2.5.2 Current SA Motor Industry

As mentioned previously, the SA motor industry, together with the international motor industry, is currently in a state of crisis. The SA motor industry comprises (based on 2007 figures): seven OEMs, around 300 vehicle component manufacturers, with a further 150 suppliers supplying the industry on a non-exclusive basis (AIEC, 2008). Eight of the top ten global automotive component companies are represented in SA as subsidiaries or joint ventures with SA based companies (AIEC, 2008). SA and the sub-region remain a relatively small market in global terms (Venter, 2008). The region has a geographical disadvantage, being isolated from larger markets and shipping routes (Lamprecht, 2006). However, government support and other factors have managed to attract the foreign OEMs to the country. The vehicle assembly industry is concentrated in three of SA's nine provinces (Gauteng, Kwa-Zulu Natal and the Eastern Cape), with suppliers in close proximity.

The SA domestic market is generally not large enough to generate sufficient economies of scale for world-class production (Barnes, 1999; Lamprecht, 2006). Barnes (2000b) found

that international buyers in his study sample believe that the SA automotive component suppliers are not meeting their key performance requirements. The local component industry has been found lacking in quality, cost, and delivery requirements (Barnes and Kaplinsky, 2000). OEMs involved in major export projects have found it difficult to encourage multi-national suppliers to invest in SA (Black, 2007b). Many of the T1 suppliers, who have established themselves in SA, use little local content because of the weakness of the T2 suppliers.

Black and Bhanisi (2007) found that local content levels have been very low over the last decade, with less than 30 percent of components fitted being locally sourced. In addition, the locally sourced components comprised mainly of peripheral components, such as wheels, glass, exhausts and batteries. Barnes and Kaplinsky (2000) contend that the primary reason for the erosion of domestic supply is the lack of effective protection for the components sector. Another factor is the updating of models - the newer the model the less likely it is to incorporate SA specific modifications, offering potentially fewer opportunities for local component manufacturers to be awarded contracts for the modified components. There also appears to be a growing reluctance of OEMs to source from locally controlled firms as they prefer to source from wholly-owned subsidiaries, or joint ventures which use foreign technology (Barnes and Kaplinsky, 2000).

Capital investment in the motor industry has increased annually, but increases in R&D have been low (Lamprecht, 2006). While there has been investment, mainly by foreign firms (or joint ventures) in high technology T1 component manufacturers, to supply large volume vehicle contracts, these firms often "operate as just-in-time sub-assemblers of imported components using technologically advanced assembly jigs and testing equipment" (Black and

Bhanisi, 2007, p.146). They are not involved in the substantial value-adding processes and cannot be considered to be true manufacturers. The true manufacturing processes tend to take place outside SA. Also, capital intensive components are mostly imported (Lamprecht, 2006).

While the range of automotive components exported from SA is vast, the bulk consists of only a few products, notably catalytic converters and stitched leather seats. Although SA has a number of the required primary resources, import parity pricing has been found to stifle what could be a source of competitive advantage for the SA motor industry (Lamprecht, 2006).

The SA motor industry is well organized, with the various stakeholders represented by organizations. For example, The Motor Industry Development Council (MIDC), established in 1996 as a joint industry-government-labour body (Lamprecht, 2006); the National Union of Metalworkers of South Africa (NUMSA) representing labour; The National Association of Automobile Manufacturers of South Africa (NAAMSA), representing the OEMs; and the National Association of Automotive Components and Allied Manufacturers (NAACAM), representing the component suppliers.

There have been innovative projects undertaken by various institutions, such as government, academics, OEMs and suppliers, to assist the development of the motor industry. Examples include The Industrial Restructuring Project, The South African Auto Benchmarking Club, and the Durban Auto Cluster. These projects are discussed below.

The Industrial Restructuring Project (IRP)

The IRP, based at the School of Development Studies, University of Natal, Durban, was initiated at the beginning of 1996 (Barnes, 2000a). The project, which aims to support industrial policy in SA at the national, provincial and local levels, has played a role in promoting the competitiveness of the SA automotive components industry.

The South African Auto Benchmarking Club

A SA example of an automotive learning network is the "KwaZulu-Natal Benchmarking Club", which was established in January 1998 with the assistance of the government (Morris *et al.*, 2006). It was designed as a learning network to facilitate rapid development of world class manufacturing capability. The network's aim was to provide confidential performance measurement and feedback; benchmarking to other similar club members; workshops discussing findings and solutions; and to encourage the sharing of experience and information through, for example, inter-plant visits. Initially there was a lack of trust and unwillingness to share information within this network (Morris *et al.*, 2006). This was overcome over time as trust developed and the KwaZulu-Natal Benchmarking Club's success led to the formation of four similar networks in Port Elizabeth, Gauteng, East London and Cape Town, collectively named "The South African Auto Benchmarking Club" since 2004.

The South African Auto Benchmarking Club pursues continuous improvement and operational performance enhancement to enable the SA motor components sector to become more internationally competitive (Morris and Barnes, 2006). Benchmarking is used to compare firms to their local and international competition. The data obtained from this project shows improvements in operational performance of SA firms and suggests that the

learning is still predominantly at the T1 supplier level and has not yet extended further up the supply chain.

The Durban Auto Cluster (DAC)

The DAC, formally launched in January 2002, was initially established to promote regional development (Morris and Barnes, 2006). Supplier development is one of the main aspects of this project. The project assists participants in improving their purchasing skills, by focusing on the identification of training needs, knowledge exchange and a number of workshops on the theme of "best practice" in purchasing and supply management. The project seeks to align purchasing functions, by finding ways of developing a common approach to supplier management by OEMs and T1 suppliers. These include a standard template for supplier development, a supplier evaluation form, a checklist for monitoring supplier performance and a common costing tool. A number of pilot supplier development activities have been launched.

The DAC project has developed a supplier awareness database by creating a comprehensive directory of all suppliers. This assists in improving supplier selection and facilitating comparisons. Information sharing is an important part of the project and involves creating greater awareness of the dynamics of supply chains and the needs of OEMs and major T1 suppliers. The participants are encouraged to improve overall logistics, (for example, the cluster was encouraged to collaborate to reduce sea, land and air costs, since logistics accounts for between 5 and 15 percent of selling costs (Morris and Barnes, 2006)). Human resource development is also a key focus by assisting firms in obtaining grants for training, developing basic adult education schemes, and involving workers in learnership programmes.

2.5.3 Supplier Development Literature in the SA Motor Industry

Much of the research concerning the SA motor industry has been policy-related, particularly concerning the SA government's MIDP (see Black, 2001; 2002; 2007a; Black and Bhanisi, 2007; Black and Mitchell, 2002; Barnes *et al*., 2004; Barnes and Morris, 2000; 2008; Damoense and Simon, 2004; Flatters, 2002; 2004; 2005). There have been Masters dissertations concerning the MIDP (see Lamprecht, 2006; Franse, 2006) and a PHD focusing on automotive policy and the restructuring of the SA motor industry (Black, 2007a).

There has been literature focusing on the competitiveness of the SA automotive components industry since trade liberalisation in 1994 (see Barnes, 1999; 2000a-d; 2001; 2002; Barnes and Kaplinsky, 2000). The effect of learning networks and clusters in the SA motor industry has received much attention in the literature (see Morris *et al*., 2004; 2006; Morris and Barnes, 2006; Lorentzen, 2005). The roles of the IRP (Barnes, 2000a), The South African Auto Benchmarking Club (Morris *et al.*, 2006; Morris and Barnes, 2006), and the DAC (Morris and Barnes, 2006), have been documented in the literature.

The Automotive Industry Development Centre (AIDC) has a supplier development department that has been part of supplier development initiatives in the SA motor industry. There is also literature covering aspects of supply chain management and value chains in the SA automotive industry (see Supply Chain Intelligence Report, 2009; Barnes, 2000c; Barnes and Morris, 2000; 2008; Moodley, 2001).

The literature addresses supplier development issues, but supplier development is not the primary focus of the research. The SA literature covering aspects of supplier development in the SA motor industry describes a modest overall level of supplier development by the

OEMs. Barnes and Kaplinsky (2000) found that SA OEMs were aware of supply chain development, but their attempts had been modest, and the scale of the activities was actually found to have declined in some OEMs in recent years. They found that in one OEM the replacement of local by foreign management has seen the closure of the supplier development team and a fall in the purchasing department from 97 to 48 people. Also, in some instances OEMs either practise no supply chain development, were about to begin such activities, or were engaged in relatively modest efforts.

Barnes and Kaplinsky (2000) suggest that the decreasing supply chain development activities in the SA motor industry may be due to factors such as the OEMs scaling down purchases of local components, rendering less need for supplier development. They also attribute the decline in supplier development practices to an increasing proportion of component suppliers being subsidiaries of global component firms, where supplier development can be left up to the global head-offices of the suppliers.

Black (2007a) presents a case study of Toyota South Africa Motors (Pty) Ltd's (TSAM's) upgrading of their supply network. He discusses their supplier development approach in the mid-1990s and then again in early 2007, based on follow-up interviews. By the mid-1990s, cooperative relationships between the OEMs and suppliers "had not yet emerged to any significant extent in South Africa except insofar as the industry was small and personal contacts played an important role" (2007a, p.204). Black's study identified Toyota, the largest OEM in the mid-1990s, to be the leader in supplier development in SA with respect to local suppliers, but reports the level of intensive involvement with suppliers to be at an early stage.

By 2007, follow-up interviews present progress in supplier development by TSAM. A poll of suppliers found TSAM as the OEM regarded as "most supportive of building the supply network" in SA (Black, 2007a, p.209). However, the number of local suppliers had reduced and by 2007 the local suppliers were mainly "global" firms, meaning either foreign owned subsidiaries, joint ventures operating in SA, or domestically owned firms with technical agreements with foreign suppliers. Black (2007a) found TSAM to have a preference for foreign owned suppliers or joint ventures, rather than firms with foreign technical agreements, since they regard licence payments as cost raising. The case study shows that the SA T2 suppliers are regarded as weak with limited skill levels. Although TSAM encouraged T1 suppliers to increase local content, the T1 suppliers were importing much content themselves, contributing to low overall local content levels. The level of supplier development was found to depend on the cycle of new model introductions.

Concluding Remarks for the Section

SA motor industry supplier development literature is scarce concerning supplier development of OEMs with respect to T1 and T2 suppliers, T1 suppliers with respect to T2 suppliers, and the supplier development of B-BBEE suppliers. Black (2007a) provides a case study of TSAM and its suppliers where TSAM is identified as the leader in supplier development in SA. Supplier development issues are addressed in passing, in literature dealing with other issues as their main focus. The overall impression is that the supplier development practised by the SA OEMs is modest. The comments made about supplier development in the SA motor industry are based predominantly on case studies. The review of the SA literature highlights the need for research focusing on *supplier development* in the SA motor industry. Moreover, it emphasizes the need for *empirical* research to provide a measure of the nature

and extent of supplier development practices in the SA motor industry as a whole. Further, the review shows the necessity for the supplier development research to be conducted from a *dyadic* point of view, which takes into account the perspectives of both the OEMs and the T1 suppliers, to gain a balanced perception.

2.6 Chapter Summary

The literature review has located the supplier development literature in the context of the broader supply chain management literature. The review shows the voluminous bank of international supplier development literature spanning many countries and industries. The vast array of supplier development practices and deployment methods are well documented in the literature and have been summarised into six themes of supplier development practices for the purposes of this dissertation (see Table 2.1). The researchers agree on the benefits of intensive supplier development practices, while acknowledging that the extent of supplier development is dependent on a number of factors, such as the characteristics of the buyer, supplier, and product. The supplier development literature is predominantly case study based, with only a few cross-industry surveys concerning supplier development. The research is often based on the perspective of the buyer, with a scarcity of dyadic studies.

Researchers have grappled with theories underlying buyer-supplier, SCM and collaborative relationships, but have yet to reach consensus regarding any overarching theories. Moreover, there is a lack of literature investigating the theories behind supplier development, *per se*. A popular theme emerging from the literature is the contrast between the Eastern and Western history and approaches to supplier development. The general supplier development literature identifies the motor industry as a leader in the adoption of supplier development practices.

Thus, much supplier development research has been conducted in the international motor industry. The motor industry literature mirrors the general literature with its extensive use of the case study methodology, focus on the buyer's perspective and emphasis of the East versus West distinction.

There is a general lack of research focusing specifically on *supplier development* in the SA motor industry. The literature that has touched on aspects of supplier development in the SA motor industry suggests that the overall level of supplier development is not intense. TSAM has been identified as a leader in the development of the local supply base. However, since the prior research is mostly case study based, the overall status of supplier development in the SA motor industry has yet to be determined.

Supplier development in the SA motor industry has not been explored holistically, nor on a dyadic basis, where the perspectives of the OEMs and T1 suppliers are investigated simultaneously. The supplier development of OEMs and T1 suppliers with respect to T2 suppliers has not been explored, nor has supplier development in the B-BBEE context been addressed at an industry-wide level.

The role of government and certain innovative projects such as the IRP, The South African Auto Benchmarking Club and the DAC on supplier development in the SA motor industry is well documented. It is surprising that, despite having supplier development as a key deliverable of the MIDP, plus the efforts of the innovative projects in the SA motor industry, supplier development in the SA automotive industry to date appears to be taking place at a modest level. This again highlights the need for a focused study to determine the nature and

extent of supplier development in the SA motor industry *as a whole*, from the perspectives of both the buyer and the supplier, and between multiple tiers in the supply chain.

Chapter 3

Methodology

This chapter discusses the research methodology employed in the dissertation. A multi-method approach was used, which involved the survey method, semi-structured interviews and site visits. Quantitative as well as qualitative data was collected from multiple sources, namely OEMs, T1 suppliers and related organisations, in order to facilitate the triangulation of data, so as to gain a balanced perspective of supplier development in the SA motor industry. The SA supplier development practices are compared to the international literature and experience documented in the literature review. The rest of the chapter gives more detail concerning the methodologies employed.

3.1 The Survey Method

The survey method was used to gather information about the OEMs' supplier development policies and strategies, as well as the nature and extent of their supplier development practices with T1 and T2 suppliers. The survey method used in the dissertation falls into the *quantitative* research methodology category (Saunders, Lewis and Thornhill, 2007). Within the quantitative research methodology, the survey method in this dissertation can be classified as *descriptive* research. *Descriptive quantitative* research "involves either identifying the characteristics of an observed phenomenon, or exploring possible correlations among two or more phenomena. In every case, descriptive research examines a situation *as it is*. It does not involve changing or modifying the situation under investigation, nor does it intend to determine cause-and-effect relationships" (Leedy and Ormrod, 2005, p.179).

Descriptive survey research is one approach to *descriptive quantitative* research described above. Descriptive survey research "involves acquiring information about one or more groups of people – perhaps about their characteristics, opinions, or previous experiences – by asking them questions and tabulating their answers" (Leedy and Ormrod, 2005, p.183). This method is seen as appropriate to gather the initial data concerning the overall nature and extent of supplier development practices used by OEMs in the SA motor industry. The survey method was chosen to get a broader understanding of the supplier development practices in the SA motor industry as a whole.

Survey research plays an important role in the field of logistics and supply chain management research (Kotzab, 2005). To date, the existing literature relating to the SA motor industry is based predominantly on case study data, which falls into the *qualitative* research methodology category. In qualitative research, phenomena is studied in natural settings "in all their complexity" (Leedy and Ormrod, 2005, p.133). The use of the case study method in isolation would not allow inferences to be made regarding the overall status of supplier development in the SA motor industry. Due to the likely bias inherent in obtaining a one-sided perspective of the OEMs, it was necessary to discuss the survey results, by means of semi-structured interviews, with OEMs, suppliers and related organisations, to get a balanced perspective and reconcile differences of opinions.

3.2 Interviews

Semi-structured follow-up interviews were conducted in late 2009 and early 2010 with OEM respondents to gain a deeper understanding of the issues. The OEM interviews were used to clarify certain inconsistencies in the individual OEM survey responses, to understand the

deeper challenges and realities of supplier development and to understand the sourcing policies. The influence of foreign head-offices and global sourcing policies was explored further, as well as B-BBEE issues. The supplier perspective was ascertained by conducting semi-structured interviews with a representative sample of T1 suppliers regarded as "key" by the OEMs. Further interviews were conducted with other related organisations which deal directly or indirectly with supplier development in the SA motor industry, such as the AIDC and the DAC. The first choice of interview type was face-to-face, since this allows for nuanced discussion. However, there were some instances where logistical considerations necessitated the use of prearranged telephonic interviews instead.

The interviews were semi-structured to keep the interviewer and interviewee on track. The interviewees were sent the aggregated OEM survey results as a starting point for further discussion. The supplier interviewees were asked which OEMs they supply, whether they export, whether they are multinationals, have technical licence agreements, and / or joint venture partners. They were also asked to comment on their perspective of the survey results. They were given the opportunity to report any other aspects about supplier development which had not been addressed in the survey. The suppliers were then questioned about the nature and extent of supplier development that they practise with T2 and T3 suppliers. The interviews with related organisations sought to understand the role played by these organisations in supplier development in SA, as well as their perspective of the role played by various OEMs and suppliers in supplier development, based on their experience in the SA motor industry.

3.3 Site Visits

Site visits were conducted at OEM and supplier premises to gain a better understanding of the nature of the industry, as well as to witness certain supplier development initiatives first hand.

3.4 Triangulation of Data

"Triangulation" refers to the collection of multiple sources of data with the hope that they will all converge on consistent conclusions, with any contradictions in the data reconciled (Leedy and Ormrod, 2005). The use of triangulation was necessary since there is an intrinsic risk that the OEMs and T1 suppliers may overstate the extent of their supplier development practised in relation to T1 and T2 suppliers, respectively. There is also a possibility of suppliers understating the amount of supplier development received. The literature review shows that buyers and suppliers often have differing perspectives as to the extent and effectiveness of supplier development efforts. Thus, to get a balanced picture of the supplier development taking place in the SA motor industry, it was important to use triangulation to gain the perspectives of both OEMs and suppliers, and to reconcile the perspectives. The views of other organisations related to the motor industry also assisted with balance, since some of these organisations can be regarded as non-partisan.

3.5 Target Population and Sample

The OEM perspective was obtained by focusing on the full population of seven light vehicle OEMs located in SA. Given the small population size, it was logistically possible to target the whole population for the survey and semi-structured interviews. Thus, the following

companies formed the study population: Ford Motor Company of Southern Africa (Pty) Ltd, Volkswagen of SA (Pty) Ltd, Mercedes-Benz South Africa (Pty) Ltd, General Motors South Africa, BMW (South Africa) (Pty) Ltd, Toyota South Africa Motors (Pty) Ltd and Nissan SA (Pty) Ltd.

The targeted supplier population were those suppliers regarded as "key" by each of the OEMs. The overall supplier population in 2007 was 300 suppliers supplying the motor industry on an exclusive basis, with a further 150 non-exclusive suppliers (AIEC, 2008). This number has decreased due to the financial crisis. The population of "key" suppliers is a further subset of these suppliers. The intention was to interview suppliers regarded as "key" by the OEMs, to allow for direct comparison of what the OEMs say they do for "key" suppliers and what the "key" suppliers say the OEMs do for them.

To identify these "key" suppliers, the OEMs were each requested to name three "key" suppliers. NAACAM's opinion was also sought regarding which suppliers to interview, so as to obtain a representative sample of T1 suppliers. NAACAM was asked to recommend suppliers representing various sectors of the T1 supply base, for example, some that are multinational, some that are national champions, suppliers representing different regions and so forth, to try to get a representative sample of "key" suppliers. The choice of related organisations to be interviewed was based on the literature review, as well as on organisations that emerged as role players in the interviews with OEMs and T1 suppliers. Site visits were requested at certain OEM and supplier premises.

3.6 The Respondents

The targeted respondents at the various OEMs were the most senior purchasing, logistics or supply chain management executives of the OEMs. The targeted respondents at the suppliers were the most senior sales / marketing managers or general manager. The respondents at the related organisations were the project managers and managers involved with supplier development.

3.7 Survey Questionnaire

A structured survey questionnaire was developed to gather information about supplier development practices and strategy in the SA motor industry from the OEMs (see Appendix A). The survey questions were based on the literature review, as well as on discussions with leading academics and practitioners in the industry. The questions drew heavily on three cross-industry supplier development surveys (Wagner, 2006a; Krause, 1997; Watts and Hahn, 1993). Other questions, relating more particularly to the motor industry and to the SA context, emanated from the literature review.

The questionnaire consisted of guidance notes and four sections. The guidance notes explained the purpose and structure of the survey. A confidentiality clause was included, pledging that data would only be disclosed in aggregate for the industry as a whole. Section 1 of the questionnaire related to supplier development practices. A five-point Likert scale was used which asked respondents to indicate the extent to which their firm engaged in the various supplier development practices listed. The supplier development practices in the survey were categorised into the six themes emanating from the literature review. The Likert

scale grades were as follows: 1 = never, 2 = seldom, 3 = sometimes, 4 = often, 5 = always. The five-point Likert scale was chosen above the seven-point scale, to allow comparison to the significant supplier development surveys found in the literature.

Supplier development was defined at the beginning of the questionnaire, as in Section 1.1 of the dissertation. When answering the questions, respondents were asked to base their responses on their interactions with "key" suppliers. "Key" suppliers were defined in the questionnaire as "suppliers that are important to your business". This was a loose definition, since suppliers may be regarded as "key" for a number of reasons, such as Rand sales value, limited alternative suppliers, and criticality of the procured item.

Section 2 of the questionnaire related to the firm's overall supplier development strategy. "Yes / No" responses were required, plus opinions about the OEM's supplier development strategy, based on a five-point Likert scale (where 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree and 5 = strongly agree). Section 3 of the questionnaire requested information regarding supplier characteristics. The last section related to company information.

The questionnaire was structured so as to ask the core questions about supplier development practices and supplier development strategy first, with more mundane supplier information and company information being covered last. The intention was for the respondent to be fresh of mind when answering the most important questions, rather than perhaps being pressed for time as may be the case with the last few sections of a questionnaire. The questionnaire was designed to be as quick and easy to fill in as possible. Tick boxes were predominantly used, with ample room for additional comments and responses. The survey

was designed to take no more than thirty minutes of the respondent's time, given the time constraints of the targeted respondents. The questionnaire was critiqued by three academics, who were asked to review the survey for ambiguity and clarity. The survey questions were also sanctioned by the University of Cape Town's Ethics in Research Committee. Several minor changes were made to the survey instrument based on the pre-test results.

3.8 Time Period Covered by the Questionnaire and Interviews

A crucial element of the methodology was the choice of time period which respondents should consider when answering the survey questions. Given the world financial crisis hitting the SA markets in the latter part of 2008, it was realised that the survey was being undertaken at a tumultuous time, fraught with economic uncertainty. The time period that respondents were asked to consider was the three years ended June 2008. This period was chosen so as to measure the status of supplier development in the SA motor industry prior to the full impact of the world financial crisis. It is understood that the world crisis may have a significant impact on the OEMs' future choice of supplier development strategy; this was discussed in follow-up interviews. The questionnaire included a preliminary question concerning the effect of the world financial crisis on the OEMs' supplier development strategy. The semi-structured interviews, conducted in late 2009 and early 2010, discussed supplier development over a much longer period of time and were not limited to any time period.

3.9 Administration of the Survey Questionnaire

The targeted OEM respondents were contacted by telephone in order to explain the purpose of the study being conducted. The respondents asked that the explanation and request for participation rather be made by e-mail. In the e-mails, the study was explained and permission sought to e-mail the survey questionnaire. With permission granted, the questionnaire was sent by e-mail. After two weeks a polite reminder e-mail was sent to any respondents who had not responded. Only one further reminder e-mail was needed two weeks later in order to collect the data from the whole OEM population.

3.10 Problems / Criticisms of the Methodology and Mitigating Factors

Self-Report Data

The survey research relies on self-report data. "People are telling us what they believe to be true or, perhaps, what they think we want to hear" (Leedy and Ormrod, 2005, p.184). This was mitigated by conducting follow-up discussions with OEMs, as well as interviews with key suppliers and other organisations related to the motor industry. Site visits were also used to corroborate certain supplier development initiatives.

Potentially Low Response Rate

There was a fear that a *written* survey questionnaire (as opposed to face-to-face or telephonic interview) would not elicit a high response rate. The potentially low response rate was mitigated by making the survey questionnaire as short and easy to fill in as possible, with extensive use of tick-boxes. This resulted in a one hundred percent response rate.

Respondent Fatigue

Another fear was that the extensive reviews of the MIDP may have resulted in respondent fatigue. This was again mitigated by trying to keep the survey short and easy to fill in.

3.11 Data Analysis

Type of Data

The five-point Likert scales used in the survey questionnaire represent ranked data. With such data one cannot assume that the difference between a "1" and "2" response on the Likert scale is the same as the difference between a "4" and "5", say [2]. The data is measured on an *ordinal* scale. This is "a scale that "measures" in terms of such values as "more" or "less", "larger" or "smaller", but without specifying the size of the intervals" (Leedy and Ormrod, 2005, p.28). Statistics appropriate for this scale of measurement are the mode, the percentile values, the chi-square, the median, percentile rank and rank correlation (Leedy and Ormrod, 2005). That is, *non-parametric* statistics are appropriate for analysing such data (as opposed to parametric statistics) (Leedy and Ormrod, 2005). Parametric measures such as the mean and standard deviation should therefore generally *not* be used on such data. Further, the small population size (7 OEMs), rendered many statistical tests inappropriate on the survey data.

Data Presentation

The survey results are presented using tables in order to assist the reader in comprehending the overall trends. The data analysis is both quantitative and qualitative. To assist with the

[2] see http://www.statsoft.com/textbook/stnonpar.html

understanding and clarity of the Likert scale data for supplier development practice usage (where 1 = never and 5 = always), OEMs that fall into the "4" or "5" range are grouped together and described as using the practice "regularly" or "on a regular basis". OEMs whose responses fall into the "1" or "2" range are described as "rarely" using the practice. Similarly, for the Likert scale data relating to the supplier development strategies (where 1 = strongly disagree and 5 = strongly agree), responses of "1" and "2" are grouped together and interpreted to show "disagreement", while responses of "4" and "5" together represent "agreement".

Comparative Analysis

The SA survey results and SA literature was compared to the general trends and supplier development practices found in the international supplier development literature review. The SA results are also compared to the findings of the large cross-industry surveys (Watts and Hahn, 1993; Krause, 1997; Wagner, 2006a). The shortcomings of such comparison to previous survey data is understood and considered in the analysis. For example, it is understood that the SA data relates to the motor industry, while the comparative international survey data is cross-industry. The SA survey data relates to the three years ended June 2008, while the comparative studies were conducted in 1993 (Watts and Hahn), 1997 (Krause), and 2006 (Wagner), respectively. Krause (1997) and Wagner (2006a) present their data using the mean (average) usage of each supplier development practice on a five-point Likert scale. As noted above, Likert scale data should *not* theoretically be described using *parametric* statistics, such as the mean. It is assumed by the author that the comparative studies used parametric statistics because of the large sample sizes and by making assumptions about the underlying populations.

3.12 Further Considerations in the Data Analysis and Interpretation

From the outset of the analysis and interpretation of the results, it should be noted that the nature and extent of supplier development practices is a function of a number of factors, such as the quality and efficiency of suppliers, and the amount of development the suppliers receive from their own head-offices (which tend to be global in the motor industry). Thus, a high usage of supplier development practices could be the result of significantly different situations. For example, on the positive side, high usage could reflect dedicated supply chain management strategies on the part of the OEM; whereas, on the negative side, it could be a sign of suppliers in dire need of development. The results of the study are presented and discussed in Chapter 4.

Chapter 4

Results and Discussion

This chapter presents and discusses the results of the multi-method fieldwork. The OEM survey results are shown, together with insights gained from follow-up interviews conducted with OEMs, T1 suppliers and other organisations playing a role in the SA motor industry. Corroborative evidence from site visits at OEM and supplier premises is provided. The results are discussed in detail under the six main themes of supplier development practices identified by the author in the literature review. General trends and interactions in the SA data are discussed with reference to the literature review. The SA data is compared to the cross-industry survey data so as to corroborate (or not) insights emanating from the literature. The overriding objective of the analysis is to present a balanced perspective of the overall status of supplier development in the SA motor industry, using triangulation of data.

4.1 Respondents

The fieldwork activities and respondent characteristics are summarised in Tables 4.1 to 4.3.

OEMs

Table 4.1 provides details of the OEM respondents and fieldwork activity.

Table 4.1: OEM Fieldwork Activity and Respondent Summary

	OEM	Region	Site Visit	Survey Completed	Face-To-Face Follow-Up Interview at OEM Premises	Telephonic Follow-Up Interview
1	BMW (South Africa) (Pty) Ltd	Rosslyn		Yes, by Mr Frank Davis (Supplier Development Manager)		Yes, with Mr Frank Davis
2	Ford Motor Company of Southern Africa (Pty) Ltd	Rosslyn		Yes, by Mr Dennis Rozario (General Manager Purchasing)		Yes, with Mr Dennis Rozario
3	General Motors South Africa	Port Elizabeth		Yes, by Mr Evan Dold (Vice President, Global Purchasing & Supply Chain)	Yes, with Mr Evan Dold	
4	Mercedes-Benz South Africa (Pty) Ltd	East London	✔	Yes, by Mr Owen Smith (Manager, Purchasing) and Mr Vic Matriotti (Manager, Purchasing)	Yes, with Mr Vic Matriotti	
5	Nissan SA (Pty) Ltd	Rosslyn		Yes, by Mr Dave Cameron (Senior General Manager - Purchasing)	Yes, with Mr Stefan Haasbroek (Purchasing General Manager)	
6	Toyota South Africa Motors (Pty) Ltd	Durban	✔	Yes, by Mr Henry Pretorius (Senior Vice President Manufacturing Support Group)	Yes, with Mr Nigel Ward (Vice President, Purchasing & Engineering) and Mr Sarv Pillay (Manager, Supplier Development, Purchasing), Mr Umesh Harripersad (Technical Specialist, Supplier Technical Support, Purchasing)	
7	Volkswagen of SA (Pty) Ltd	Uitenhage		Yes, by Mr Charl Buys (Manager, Interior & Exterior, Purchasing)	Yes, with Mr Charl Buys	

As shown in Table 4.1, OEM survey responses were obtained from all seven SA OEMs, representing the whole population of light passenger vehicle manufacturers in SA at the time of conducting the survey. The respondents were: Ford Motor Company of Southern Africa (Pty) Ltd, Volkswagen of SA (Pty) Ltd (VW), Mercedes-Benz South Africa (Pty) Ltd, General Motors South Africa, BMW (South Africa) (Pty) Ltd, Toyota South Africa Motors (Pty) Ltd (TSAM) and Nissan SA (Pty) Ltd. TSAM gave permission for their supplier development approach and practices to be disclosed individually, rather than only in aggregated form. All OEM respondents are wholly owned subsidiaries of global companies.

TSAM and VW are the largest OEMs in SA in terms of manufacturing volumes. They are also the current leaders in local content. The OEMs all showed extensive influence from their foreign head-offices, where chief design and sourcing decisions are made. All OEMs are part of NAAMSA. Over the last year, the OEMs have decided to meet monthly in the form of the OEM Purchasing Council, in order to improve local content and explore logistical synergies.

The 100 percent response rate from the full OEM population makes the survey results comprehensive and likely to provide a good indication of the OEMs' perspective of the status of supplier development in the SA motor industry. The OEM respondents were composed of mainly purchasing managers, but also managers with supply chain responsibilities (see Table 4.1). The average experience of the respondents in their current position was nine and a half years, with a range from seven months to 33 years. Follow-up interviews were conducted with representatives of all seven OEMs. Five OEM interviews were face-to-face (the preferred method), while two were telephonic interviews employed because of logistical problems.

Suppliers

Table 4.2A provides a summary of the fieldwork conducted relating to suppliers.

Table 4.2A: Supplier Fieldwork Summary

	Supplier Name	Site Visit	Face-To-Face Interviews at Suppliers' Premises
1	Donaldson Filtration Systems (Pty) Ltd		Yes, with Mr Barry Cassisa (Supply Manager)
2	Dorbyl Automotive Technologies		Yes, with Mr Patrick Lavery (Chief of Operations)
3	East Cape Wiring (Pty) Ltd		Yes, with Mr Carlos Dos Santos (Director, Sales & Marketing), Mr Jacques Bosman (Sales & Marketing Manager)
4	Feltex Automotive Trim		Yes, with Mr Leon van Rooyen (Business Development Manager)
5	Foxtec-Ikhwezi (Pty) Ltd		Yes, with Mr Antony Funston (General Manager)
6	Johnston Controls Automotive SA (Pty) Ltd		Yes, with Mr Jacques Minnie (Commercial & Purchasing Director)
7	L&J Tool & Engineering Works (Pty) Ltd	✔	Yes, with Mr Michael du Plooy (E-coat Manager)
8	Lumotech (Pty) Ltd		Yes, with Mr Ropertz (Managing Director)
9	MC Syncro SA		Yes, with Mr Gavin Tiger (Plant Manager)
10	SEWS South Africa (Pty) Ltd	✔	Yes, with Mr Inus de Wet (General Manager)
11	Shatterprufe – a division of PG Group (Pty) Ltd	✔	Yes, with Mr Lino Pucillo (General Manager)
12	Shatterprufe – a division of PG Group (Pty) Ltd	✔	Yes, with Mr Bob Jamieson (Supply Chain Director)
13	Smiths Manufacturing (Pty) Ltd	✔	Yes, with Mr Jean Esterhuizen (Director – Manufacturing Operations), Mr Anand Naidoo (General Manager, Manufacturing Division), Mr Gerald Naidoo (Manufacturing Manager – D-Tech), Mr Paul Kenny (General Manager: IBMS/SHEQ)
14	Smiths Plastics (Pty) Ltd	✔	Yes, with Mr William Hilditch (Managing Director), Mr Peter Shadwell (General Manager – Manufacturing), Mr Devon Farrell (Process Engineering & Production Control Manager)
15	Takata Petri (South Africa) (Pty) Ltd	✔	Yes, with Mr Karm Saliba (Quality Manager)
16	TI Group Automotive Systems (South Africa) (Pty) Ltd	✔	Yes, with Mr Malcolm James (Plant Manager), Mr Sanjay (Quality Engineer)
17	Venture South Africa (Pty) Ltd	✔	Yes, with Mr Raymond Green (Plant Manager)
18	Visteon SA (Pty) Ltd		Yes, with Mr Andrew Dealtry (Managing Director)
19	ZF Lemforder SA (Pty) Ltd		Yes, with Mr Zorgman (Purchasing & Sales Manager)
			Telephonic Interview
20	Tenneco		Yes, with Mr Colin Schroder (Business Development & Supply Chain Manager)

The demographics of the suppliers sampled are shown in Table 4.2B.

Table 4.2B: Supplier Demographics

	Supplier Name	Region	Components Supplied*	OEMs supplied
1	Donaldson Filtration Systems (Pty) Ltd	Cape Town	Engine filtration products, associated design and development of the above products and technical support of the product in the field, covering air, fuel, lube, hydraulics, coolant.	All SA OEMs.
2	Dorbyl Automotive Technologies	Port Elizabeth	Steel wheels (passenger/commercial), seats, seat sides and recliners, forgings and castings, CV joints, propshafts, steering gears, other steering components, suspension modules.	Have supplied all SA OEMs.
3	East Cape Wiring (Pty) Ltd	Port Elizabeth	Manufacturers of wiring harnesses and battery cables to OEMs and T1 suppliers locally and abroad.	VW, GM.
4	Feltex Automotive Trim	Rosslyn	Moulded floor carpets, boot packages, sound insulation, parcel shelves, exterior wheel arch liners.	All SA OEMs.
5	Foxtec-Ikhwezi (Pty) Ltd	East London	Manufacturers of forged non-ferrous components for the automotive industry, aluminium suspension struts.	Merc.
6	Johnston Controls Automotive SA (Pty) Ltd	Uitenhage	Manufacture leather car seat covers, JIT cockpit, seat assembly.	All SA OEMs except Toyota and BMW.
7	L&J Tool & Engineering Works (Pty) Ltd	Durban	Tool and die making, E-coating, metal pressings, sub-assemblies.	VW, Toyota.
8	Lumotech (Pty) Ltd	Uitenhage	Automotive lighting: headlights, taillights, reflectors, sundry and signal lights, glass lens spotlights, energy saving street lights. Plastic mouldings: fan cowls, front end boisters, CFCM.	Toyota, VW, Ford.
9	MC Syncro SA	East London	Assembly of tyres to wheels.	Merc in SA.
10	SEWS South Africa (Pty) Ltd	Durban	Wiring harnesses.	Toyota.
11	Shatterprufe – a division of PG Group (Pty) Ltd	Durban	Laminate windscreens, toughened door and rear light glasses and cab sliders.	All SA OEMs.
12	Shatterprufe – a division of PG Group (Pty) Ltd	Port Elizabeth	Please see above.	Please see above.
13	Smiths Manufacturing (Pty) Ltd	Durban	Automotive air-conditioning systems, heaters, blowers, evaporators, multiflow/serpentine & F/T condensers, radiators, engine cooling fan assemblies, receiver driers, refrigerant pipes and hoses, Dunair aftermarket air conditioners and vehicle cooling modules.	All SA OEMs.

Table 4.2B: Supplier Demographics (cont.)

	Supplier Name	Region	Components Supplied*	OEMs supplied
14	Smiths Plastics (Pty) Ltd	Durban	Plastic injection mouldings, high frequency plastics welding, gas injection moulding, colour and soft touch paint facility, interior and exterior trim components, engine compartment components and chromed plastic injection moulded parts.	All SA OEMs.
15	Takata Petri (South Africa) (Pty) Ltd	Atlantis	Steering wheels, seat belts, airbags.	All SA OEMs except Nissan.
16	Tenneco	Port Elizabeth	Catalytic converters, exhaust systems, shock absorbers, struts.	Mostly exports, VW, GM, Ford and Merc in SA.
17	TI Group Automotive Systems (South Africa) (Pty) Ltd	Durban	Electron Tube Manufacturing, Engineering Services, Fabricated Structural Metal Manufacturing .	Toyota, BMW.
18	Venture South Africa (Pty) Ltd	Durban	Mould and paint interior and exterior plastic automotive components e.g. bumpers, exterior trim parts (mirrors, door protection strips, rocker panels, grilles, wheel trims) and interior trim parts (instrument panels, door panels, consoles, pillar trims) as well as non automotive, assembly and JIT supply. Program management and tooling manufacture. Technical blow moulded, injection moulded and vacuum formed components, dunnage systems and pallets.	All SA OEMs.
19	Visteon SA (Pty) Ltd	Port Elizabeth	Full design/ development/ production capability in many product areas within the range of interiors, climate control, powertrain and electronic systems. Engine fuel and air intake systems and associated parts.	VW, Ford, Toyota.
20	ZF Lemforder SA (Pty) Ltd	Rosslyn	Assembly of complete axles and front struts.	Mostly BMW and Merc in SA. Export to Ford, Merc, GM, Holden.

*available @http://naacamdirectory.webhouse.co.za, accessed 5 August 2010

As shown in Tables 4.2A and B, the supplier sample consisted of 20 T1 suppliers located in SA. Nineteen interviews were conducted face-to-face and one by prearranged telephonic interview. The supplier sample covers all the main motor industry regions of SA, and represents a wide range of products.

The sample was chosen based on suppliers regarded as "key" by the seven OEMs, as well as recommendations by NAACAM and related organisations. The OEM survey results show that the OEMs have on average 90 SA component suppliers each. They differ with regard to the percentage of suppliers they regard as "key" to their business. Four of the OEMs regard all suppliers as key; while others regard only 20 percent as key. On average, 50 percent of the OEMs' suppliers are located in SA, with only around 20 percent of these suppliers being SA owned. Thus, 10 percent (20%x50%) of components are sourced from SA *owned* suppliers. This corresponds with the literature review that shows that many T1 motor industry suppliers are large global companies, with international ownership.

Table 4.2B shows that 17 of the 20 suppliers supply multiple OEMs, with nine of these suppliers supplying all SA OEMs. Three of the suppliers sampled supply only one OEM. The views of the suppliers of multiple OEMs were used to compare the supplier development approaches and practices of the various OEMs. There was general consensus among the suppliers of common OEMs in their perception of the OEM's supplier development strategy and practices. There was greater alignment of the perceptions of the buyer supplier dyads for Toyota and its suppliers compared to the other OEMs.

Approximately 70 percent of T1 suppliers are members of NAACAM. Suppliers who may choose not to join NAACAM include global suppliers that have come to SA to be dedicated to one OEM, and suppliers who are OEM subsidiaries, who supply only their parent OEM. The catalytic converter suppliers have their own special interest group (Catalytic Converter Special Interest Group) and thus may choose not to be members of NAACAM; although about 50 percent of these suppliers are reported to be members of both organisations. The tyre companies also have their own special interest group and thus may also choose not to join NAACAM.

Interviews confirmed that most T1 suppliers in SA have a "foreign connection", such as being a multinational company, having a foreign joint venture partner or having technical agreement partners abroad. These companies were referred to as "global firms" in the literature (Black, 2007a). There are very few remaining "national champions" with no foreign influence. Some supplier sources believe that the OEMs are more comfortable working with multi-nationals. The OEMs concurred that most of the suppliers that they work with are global firms. The prevalence of global suppliers is a function of the global purchasing decisions taking place in the motor industry worldwide and the stringent quality and cost requirements. An industry expert explained that the benefits to the OEM of working with multinational suppliers are manifold. Multinationals facilitate their SA subsidiary access to technology, support in the export market, access to parts, and access to best practices. These factors can enable the supplier to upgrade themselves, resulting in less input required from the OEMs.

Related Organisations

Table 4.3 lists the other organisations playing a role in the SA motor industry who were interviewed to provide a balanced insight into supplier development in the SA motor industry**.**

Table 4.3: Related Organisation Fieldwork Summary

	Organisation	Face-To-Face Interview	Telephonic Interview
1	Automotive Industry Development Centre (AIDC)		Mr Barlow Manilal (CEO AIDC), Mr Ncunbuzi Ben Mazwi (Manager)
2	B&M Analysts	Mr Douglas Comrie (Managing Director) Dr Justin Barnes (Chairman)	
3	Durban Auto Cluster (DAC)	Mr Douglas Comrie (Non-voting Chief Facilitator) Dr Justin Barnes (Non-voting facilitator)	
4	NAACAM	Mr Roger Pitot (Executive Director)	
5	NAAMSA BEE Task Team		Dr Jurgen Fegbeutel (Chairperson of NAAMSA BEE Task Team)
6	University of Cape Town	Prof Anthony Black (Leading Academic)	

4.2 Supplier Development Policy

The nature of the supplier development policies employed by SA OEMs is presented in Table 4.4.

Table 4.4: OEM Supplier Development Policies	
	Number of OEMs in Agreement:
We have a global supplier development policy.	7
We have a separate South African supplier development policy.	3
We have a separate Black Economic Empowerment (BEE) supplier development policy.	6
Source: SA OEM supplier development survey 2008	

All seven OEMs have a global supplier development policy. These policies can be scrutinised on their international websites[3]. Given the global sourcing and follow-sourcing practices of OEMs and their T1 suppliers, it is not surprising that supplier development policies are viewed at an international level in these firms. While only three OEMs have separate SA supplier development policies, six of the seven OEMs see the necessity of having a separate B-BBEE supplier development policy. The international websites showed that many OEM head-offices also have supplier diversity development programmes[4]. The supplier development policies are significantly affected by the sourcing policies of the OEMs, as discussed below.

Sourcing

Interviews made it apparent that the SA motor industry often inherits global sourcing relationships chosen at international head-office level. The intense partnering and development of new parts takes place at the international head-offices of OEMs and T1

[3] See for example: www.ford.com; www.nissan-global.com; www.bmw.com; www.toyota.com; www.daimlerchrysler.co.za; www.gm.com; www.volkswagen.com; www.mazda.com.

[4] For example: www.ford.com; www.toyota.com.

suppliers. The SA OEMs import much component value, often up to 50 percent or more of components. The reasons for importing include the lack of local capability and internationally centralised purchasing decisions. There is a tendency to import the more technically advanced components, bar a few exceptions to this rule where the global T1 supplier has set up shop in SA.

There is a renewed drive among some OEMs, such as VW and TSAM, to maintain and increase local content. "Local content" in this context means components sourced from firms located in SA (without necessarily being SA owned). The monthly meetings of the OEM Purchasing Council centre on how to improve local content. Current ideas in this regard include OEMs sourcing from common suppliers to allow suppliers to have economies of scale. The new APDP is expected to incentivise an increase in local value added and hence local content.

VW SA is targeting 70 percent (and more) local content in the forthcoming models. They are achieving this by getting multinationals with specialised technology to locate in SA. Some suppliers bemoan the presence of these "transplants" from overseas, suggesting that they are taking work away from capable SA suppliers. However, certain OEMs argue that the technologies required are not available in SA in the absence of such "transplant" companies, and that these companies create opportunities for SA companies to become T2 suppliers to the "transplants".

The characteristics of some components favour local manufacture, such as components that are easily damaged in transit, and components that are bulky and expensive to transport (for example bumpers). There are also some components so specific to the sequence of the

particular production run, such as wiring harnesses, that they are best sourced from companies located in SA, to allow for very short reaction and lead times.

The OEM head-offices dictate much of the T2 sourcing. The T1 suppliers interviewed import a high percentage of raw material and component value. Both T1 suppliers and OEMs have complaints about the competitiveness of local T2 suppliers, explaining that this contributes to the high percentage of imported raw materials.

The OEMs all concur that they do not generally practise any supplier development with respect to their foreign suppliers. Supplier development of foreign suppliers is performed by the OEM firm in the corresponding foreign country. Similarly, the T1 suppliers leave the development of foreign T2 suppliers to their foreign partners. Thus, the supplier development practices discussed in this dissertation relate to the suppliers located in SA. A sourcing and supplier development policy decision unique to the SA motor industry is the OEMs' response to the B-BBEE framework, as discussed below.

B-BBEE Supplier Development Policy

Interviews indicate that the SA motor industry does not have a separate B-BBEE charter, but falls under the general charter. The NAAMSA BEE Task Team was set up to represent the OEMs' views during the formulation of the general charter, to ensure its relevance to the motor industry. Even with B-BBEE policies in place, the level of B-BBEE sourcing of component parts by OEMs is at a low level. In contrast, the sourcing of non-component supplies (such as cleaning equipment, catering, and protective clothing) has strong B-BBEE compliance, according to discussions with OEMs.

Interviews revealed that the OEMs are under tremendous pressure from government, as well as from companies who are in the market for fleets of vehicles, such as car rental companies, to improve their B-BBEE scorecards. Many suppliers feel that this onus is being transferred to them, with OEMs expecting them to be verified and improve their scorecards. Many suppliers complained that there was very little value added for them in improving their B-BBEE status, since the OEMs do not place much emphasis on B-BBEE status in their ultimate sourcing decisions. The OEMs explained that many foreign partners and head-offices do not have a deep understanding of the B-BBEE process in SA. This is because the only comparable situation is the minority sourcing programme in the US. However, there is renewed emphasis on this issue and it is being taken seriously by all the OEMs and suppliers interviewed.

Most T1 suppliers interviewed have been rated by the BEE verification agencies. The scorecard rating scale is from one (indicating full compliance) to eight (representing minimal compliance) (Hlophe, 2010). The suppliers indicated that they are currently averaging six on the rating scale. Their target is to improve to a four rating, which is becoming a stipulation in many supply contracts. One of the problems suppliers face when trying to improve their B-BBEE scorecards, is the prescription by the OEM head-offices of which T2 suppliers the T1 suppliers may use. The prescribed T2 suppliers are often foreign firms. Also, the number of SA T2 suppliers is limited by barriers to entry, such as the motor industry requirement to have an International Material Data System (IMDS) number. This is a stumbling block for small and medium-sized enterprises (SMEs) and for small companies not exclusively supplying the motor industry, since the cost versus benefit of obtaining these numbers is

prohibitive. Another onerous administrative burden is the requirement for T2 suppliers to fill out DM190 forms which documents local versus imported content.

There have been attempts by organisations, such as the United Nations Industrial Development Organisation (UNIDO) and the AIDC, to put programmes in place to try to improve the competitiveness of T2 suppliers, particularly of previously disadvantaged companies (see Section 4.5.5). Although successes have been reported by these organisations, as well as by some OEMs and T1 suppliers, the level of component sourcing from B-BBEE companies remains low.

4.3 Supplier Development Strategy

Table 4.5 presents the OEM survey results concerning the nature and reasons for OEM supplier development strategy.

Table 4.5: OEM Supplier Development Strategy

	Number of OEM responses for each category:				
	Strongly disagree	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
We engage in intense supplier development strategy.	0	0	2	3	2
We have a proactive strategic supplier development strategy.	0	0	3	1	3
We have a reactive supplier development strategy.	1	4	2	0	0
Supplier development is important to our overall strategy.	0	0	0	3	4
Our supplier development strategy is understood by key personnel.	0	0	0	5	2
My firm's motives for their supplier development strategy includes:					
• Global competition.	0	0	0	2	5
• MIDP and other government incentives.	0	1	1	3	2
• To facilitate BEE compliance.	0	0	1	5	1

Source: SA OEM supplier development survey 2008

The OEMs' strategic purposes for being in SA are varied, manifesting in various supplier development strategies. An industry expert remarked that the seven OEMs have different philosophies and strategies in general, as well as specifically relating to the importance placed on developing local supply bases.

Most OEMs consider their supplier development strategy to be intense. They regard their supplier development policies to be proactive and strategic, rather than reactive. All seven OEMs concur that supplier development strategy is an important part of their overall strategy and that their supplier development strategy is understood by key personnel at their firms. In contrast, most suppliers interviewed do not describe the OEMs' supplier development strategy (with the exception of TSAM) as intense. Many T1 suppliers believe that much of the OEM supplier development is reactive, rather than proactive.

Many suppliers find the level of supplier development to be cyclical, corresponding with the lifecycle of the vehicles. Supplier development activities peak when a new supplier is being screened, or during the introduction of a new part or model. This level of intensity diminishes once the production process is up and running. After this initial phase of intense supplier development, the supplier development then becomes more reactionary, as and when problems occur. Some suppliers feel that the supplier development strategies formulated by top management of OEMs often get lost in implementation by the lower ranks within the OEM organisations. This implies that the strategy is not well understood by key OEM personnel, contradicting the OEMs' survey results.

An overwhelming majority of suppliers working with multiple OEMs regard TSAM to be "in a league of its own" as far as intense, hands-on, and proactive supplier development strategy is concerned. One supplier described TSAM as "nine out of ten for supplier development, BMW a five, and other suppliers a one". Some suppliers suggested that often other OEMs benefit from the supplier development work performed by TSAM. VW was another OEM rated by some suppliers and supplier organisations as conducting relatively more supplier development than most SA OEMs. BMW and Ford were also complimented by certain suppliers for their supplier development initiatives.

4.3.1 Drivers of Supplier Development Strategy

An interesting question is what factors influence the OEMs' choice of supplier development strategy. Some suppliers interviewed question the motives behind the OEMs' supplier development strategies, often regarding the fruits of supplier development activities to be reaped by the OEMs and not shared with the supplier. Survey results presented in Table 4.5 cite global competition, BEE compliance and the MIDP to be key drivers of SA OEMs' supplier development strategies.

Global Competition

Both OEMs and T1 suppliers agree that global competition is a key driver of the OEMs' supplier development strategy. OEMs and suppliers are continuously mindful of global competition and the global index price (base cost) for component parts. One supplier source believes that the motives of TSAM and VW to enter into supplier development practices in SA are inextricably linked to their strategy to improve local content. To source locally, the local suppliers need to be internationally competitive, which requires the OEMs' assistance

in the form of supplier development. Thus increased localisation implies increased supplier development practices.

Interviews emphasised the intense global competition faced by all links in the motor industry supply chain. With spare capacity in plants around the world, the competition for the OEMs in SA is not so much against other SA OEMs, but against their sister manufacturing operations abroad. The T1 suppliers are continuously competing with global index costs of components and hence face the threat of losing contracts to imports, as well as to SA competitors. The SA OEMs expressed their dire need for globally competitive T1 suppliers to enable their supply chains to compete against rival supply chains. "Cost" is at the forefront of discussions between OEMs and suppliers. The lack of competitiveness of local T2 suppliers was bemoaned by OEMs and T1 suppliers alike since it renders their supply chains less competitive. Thus, increased global competition may necessitate increased supplier development, depending on strategy and the sourcing options available.

B-BBEE Compliance

As discussed in Section 4.2, the B-BBEE framework is increasingly important in the SA motor industry, with OEMs and suppliers working hard to improve their scorecards. The need to improve their scorecards may necessitate increased supplier development initiatives by OEMs and T1 suppliers.

MIDP

The influence of government incentives on supplier development policies and strategy was acknowledged by the OEMs in the survey. The significance of the MIDP (and future APDP)

in attracting and keeping OEMs in SA cannot be overemphasised. The OEMs and suppliers face competitors in other countries who often enjoy greater benefits from government programmes. Without these government incentives, the OEMs would not locate in SA (Lamprecht, 2006). The MIDP plays the most significant role in attracting foreign direct investment by OEMs. Some industry players believe that foreign direct investment is more important to SA than supplier development of the local supply base. The MIDP motivates OEMs to develop SA suppliers so as to obtain import rebate credit certificates (IRCCs).

Many suppliers believe that the government programmes unfairly favour the OEMs, at the component suppliers' expense. However, many suppliers remain hopeful that the new APDP will have more benefits for SA suppliers than the previous programme. Some suppliers interviewed have been proactive in finding ways to export and enjoy some of the fruits of the IRCCs. Certain suppliers spoke of the mutual benefits of OEMs helping them to obtain export contracts. The benefits to the OEM are not only IRCCs, but also lower component prices, due to greater economies of scale at the supplier level.

Effect of the Global Economic Crisis

Another factor that is likely to have an impact on supplier development strategy is the global economic crisis. The fieldwork for this dissertation was carried out in the midst of this crisis. The impact of the crisis on all aspects of business was unanimously emphasised by OEM and supplier interviewees. The economic crisis has resulted in business failures worldwide, with many SA supplier casualties. Survey results show that four of the seven OEMs believe that their supplier development strategy will be affected by the crisis. One OEM's reason for this is as follows: "Suppliers will invest less in new facilities and equipment and focus more on

reducing capital expenditure and [on] survival". Another reason given was that "volume losses are impacting on the viability and cost-competitiveness of some of our suppliers. One way of dealing with this is to rationalise suppliers of some component groups, thereby increasing the competitiveness of the remaining suppliers".

On the other hand, three OEMs did not predict that the crisis would lead to a change in their supplier development strategy. A reason cited was that: "we will continue to invest in the development and sustainability of our suppliers, as they are critical partners in our future success". However, follow-up interviews clearly showed that all OEMs have had to adjust their supplier development strategy due to the influence of the crisis. The majority of OEMs are demanding that the SA T1 suppliers become internationally competitive.

A problem for OEMs arising from the crisis is how to manage suppliers in financial distress. In the past OEMs often decided which suppliers to exit and which to develop based on the supplier's quality, cost, and delivery performance. Now, they also need to consider the viability of a supplier and the potential impact of supplier financial distress on their supply chain. For example, financial distress may lead to a supplier running at such low buffer stock levels that they have more frequent stock-outs, which halts their production line and potentially the OEM's production line as well.

The global crisis has forced SA OEMs and suppliers to explore survival strategies. For example, the German OEMs used to meet regularly to explore potential synergies. Since the financial crisis, all seven SA OEMs now meet as the OEM Purchasing Council to promote their survival. The financial crisis has led to the OEMs placing significant price pressure on T1 suppliers, who in turn place increased price pressure on suppliers further along the supply

chain. This has resulted in increased strain on the relationships between OEMs and suppliers in some cases. The use of reactive strategies is prevalent in the current economic climate where all parties lack resources and are struggling to survive. Many suppliers and OEMs believe that the level of supplier development has gone down during the financial crisis. A possible exception is TSAM, who have adapted their supplier development strategy to the crisis, but are still perceived by suppliers to be providing a high level of direct supplier development which involves significant human and capital resources.

Nature of Product and Manufacturing Process

Another driver of supplier development strategy is the very nature of the product and production process. Site visits at OEM and T1 manufacturing plants, as well as interviews, highlight the complexity of product and manufacturing process in the motor industry. Each car requires around 8 000 parts. If any of these parts are late or defective, it can halt the whole production line, at great cost. The SA OEMs and suppliers practise, in varying degrees, the principles of lean production methods, Just-in-time (JIT), Just-in-sequence (JIS), continuous improvement, *kanban* systems, *Kaizen* improvements, as well as modular production. Some OEMs and suppliers have implemented the aforementioned production methods more extensively and successfully than others. Wheels and seats are prime examples of stock that is received JIS.

The risks and characteristics of the SA economy have an influence on the implementation of JIT and JIS production systems. For example, the SA manufacturers cannot employ pure JIT or JIS production (where virtually no inventory is kept on hand for any period) because of the stock-out risks posed by taxi strikes, COSATU strikes, electricity shortages, and logistical

problems exemplified by Transnet inefficiencies, delays at ports *et cetera*. These risks necessitate a certain level of buffer stock for most components to prevent stoppages in the production line.

The importance of quality, especially with safety critical parts, was emphasised by interviewees. Traceability of safety critical parts is also of particular importance in this industry. While the motor industry has very high quality standards required for all components, the safety critical components need to adhere to even stricter quality standards. An example is the successful deployment and functioning of airbags. Fragments of debris from the ignition of the airbag can kill a car occupant. Thus, stringent testing and quality procedures are required.

It can be argued that the very nature of the products and the competitive industry described above necessitates a high level of interaction and cooperation between buyer and suppliers, as found in the global motor industry supplier development literature. Whether this interaction is predominantly between international OEM and supplier head-offices, and / or between OEM and supplier subsidiaries in SA, will be discussed further in Section 4.5.3.

4.3.2 Which Suppliers are Developed?

Another strategic issue is how OEMs choose *which* suppliers to develop. All OEMs and T1 suppliers admit that supplier development costs are high in terms of human and capital resources. As mentioned previously, the SA OEMs do not often engage in supplier development activities with foreign suppliers, who supply a large proportion of overall component parts. When deciding which suppliers to develop *within SA*, the OEMs firstly focus on key components (such as safety critical parts and aesthetically sensitive parts).

They further narrow in on suppliers not meeting the required key performance indicators (kpi's). They thus give less ongoing assistance to suppliers who are self sufficient and meeting performance expectations. With limited resources, it is a case of "the squeaky wheel gets the most oil".

OEMs often rely on the suppliers' head-offices, global joint venture partners, or technical agreement partners, to develop the SA suppliers. However, OEMs indicated that not all global suppliers get the necessary development from their head-offices and hence require OEM development assistance. Further, during the financial crisis, some OEMs have preferred to focus their supplier development programmes on underperforming suppliers in closer proximity to the OEM, to save on travel costs. However, that being said, the OEMs did indicate that if there is a necessity they would certainly travel in SA, or even abroad, to sort out problems at a supplier's premises.

4.3.3 East Versus West

The literature draws a significant distinction between the Eastern and Western approach to supplier development. The SA suppliers interviewed did not indicate a distinction in supplier development strategy by the OEMs purely along East versus West lines. A key finding is that the majority of suppliers interviewed regard TSAM to be in a league of their own as far as supplier development is concerned, compared to the rest of the OEMs. This supports the findings of Black (2007a). Since Nissan is also of Eastern origin, a pure East versus West distinction would have associated TSAM and Nissan (Eastern origins) as a group against all the other OEMs in SA (Western origins). However, the suppliers did speak a lot about the "Japanese way" of doing things and their philosophies. Thus, the East versus West

distinction from the literature is certainly apparent in TSAM's case, and to a lesser degree in Nissan's case. Literature has suggested that the Toyota philosophy and way of doing business ("The Toyota Way") transcends the East versus West argument and is particular to this company (Magee, 2007).

A group with similar characteristics, identified by suppliers interviewed, was the "German" group of OEMs in SA (BMW, Mercedes and VW). Some suppliers regard these companies as similar in their way of doing business owing to the cultural influence of their German head-offices. The senior purchasing officers are often from abroad and in SA on three year contracts. Dealing with the German companies is perceived as different to dealing with the other OEMs. The OEMs with German head-offices themselves have strengthened this categorisation by historically having regular meetings among themselves (before the establishment of the inclusive OEM Purchasing Council).

Thus, discussions with suppliers as well as OEMs do not support a pure East versus West distinction in supplier development practices in the SA motor industry. Rather, the appropriate division relating to SA is TSAM versus the other OEMs, with respect to supplier development.

4.4 Deployment of Supplier Development Practices

The literature review showed that firms deploy their supplier development practices in a number of different ways. The survey results show that SA OEMs use a wide variety of supplier development practices. The OEMs tend to be similar as to the extent of their usage of certain practices. For example, all the OEMs use intense competition-based practices and all the OEMs refrain from investing directly in suppliers. In contrast, the OEMs are

polarised in their usage of some supplier development practices, such as their support of supplier learning networks; some clearly favouring the practice, while others plainly do not.

SA OEMs engage in both direct and indirect supplier development practices. However, discussions with OEMs and suppliers suggest that most OEMs use direct supplier development practices only intermittently, such as with the introduction of a new model or part. In the main, they try to rely on indirect practices. In this way the SA results do somewhat support Wagner's (2006a) finding that firms are generally very hesitant to engage in *direct* supplier development practices. An exception to this is TSAM's approach, which involves a high usage of direct supplier development practices, such as sending TSAM engineers to suppliers' sites for weeks, or even months, on end to help sort out problems.

The range of supplier development practices reported by OEMs in their survey responses includes basic, moderate and advanced supplier development practices as described in the literature. However, discussion with OEMs and T1 suppliers suggests that many OEMs use advanced supplier development practices, such as intense training, only sporadically. The mainstay of the majority of OEMs is basic and moderate supplier development practices, again with the exception of TSAM.

SA OEMs regard their approach to supplier development as proactive and strategic, as opposed to reactive. Suppliers felt that the OEMs' approach was often reactive, with the exception of TSAM. The OEM survey suggests that they use both results-oriented and process-oriented supplier development practices. Interviews with OEMs and suppliers clarified that while results-oriented practices are more common, process-oriented practices are indeed used, but again only sporadically. TSAM's philosophy of continuous

improvement and hands-on help at the suppliers' premises is an exception in that the process-oriented practices are ongoing. The SA data, with the exception of TSAM, appears to concur with literature that finds that firms tend to focus on improving a supplier's *performance*, rather than their *capability* (Watts and Hahn, 1993).

OEM survey results report that a combination of "Eastern" and "Western" practices are used. However, interviews point to many OEMs adopting a more "Western" approach of employing a hands-off, arm's length relationship with suppliers, with the extensive use of indirect competition-based and performance-evaluation based practices. TSAM is again an exception, with strong "Eastern" characteristics in their supplier development practices which are intense, hands-on and ongoing.

The detailed survey results of supplier development practices are now presented and discussed under the six themes identified in the literature review, that is: competition-based practices; performance-evaluation related practices; training-related practices; rewards-based practices; relationship-building practices; and logistics-related practices.

4.5 Detailed Discussion of Supplier Development Practices

This section presents the usage of specific supplier developments practices by the SA OEMs, as reported by the OEMs, as well as by the T1 suppliers. The use of the practices by T1 suppliers with respect to T2 suppliers is also discussed, based on interviews.

4.5.1 Theme 1: Competition-Based Practices

Table 4.6 presents the survey results concerning competition-based practices employed by the SA OEMs.

Table 4.6: Competition-Based Practices

	Number of OEM responses for each category:				
	Never	**Seldom**	**Sometimes**	**Often**	**Always**
1.1 Introducing competition into the supply base.					
We use 2 or 3 suppliers for a purchased item to create competition among suppliers.	1	2	2	2	0
We use 4 or more suppliers for a purchased item to create competition among suppliers.	4	1	2	0	0
1.2 Enforcing improvement – the stick.					
We threaten to switch suppliers if suppliers do not perform up to expectations.	0	3	3	1	0
We reduce business with suppliers if they do not perform up to expectations.	0	1	4	2	0

Source: SA OEM supplier development survey 2008

Introducing Competition into the Supply Base

Survey results and interviews with OEMs and T1 suppliers revealed that OEMs constantly use competition to motivate improved supplier performance. Suppliers not only face local competitors, but are also under the constant threat of the components being imported. The threat of imports is less for suppliers of components that are easily damaged in transit, or are bulky and thus costly to transport. T1 suppliers' prices are continuously compared to world base costs (indexed costs) of the component as determined by the OEM.

OEMs differ in the countries chosen (such as Thailand, Western Europe, China, Brazil) in the determination of the base cost, owing to the differing geographical spread of their production locations globally. For example, TSAM often uses Thai suppliers to determine their base

cost of components, ascribing the Thai cost 100 basis points. Then, after taking other cost, benefit and risk factors into consideration, an acceptable SA price of the component is determined, say at 120 percent of base cost. Thus, the same component produced in SA is allowed to be 20 percent more expensive than the base cost. The 20 percent premium may arise because the OEM is saving on shipping charges, costs of damage during transport, and so forth. These worldwide base costs are broken down into categories, such as labour, material, and overhead costs. OEMs have been known to use these breakdowns of base cost to a significant extent during price negotiations. Some suppliers complained that these component costs are often abused during negotiations and that the base costs are not always an accurate or fair comparison.

The survey results in Table 4.6 indicate that the OEMs use a single source, or a small number of local suppliers, per component. This is necessitated by the small SA volumes and the need for local suppliers to get as much economies of scale as possible. One respondent explained that certain components are only available from one source in SA, hence the use of a single source. Another respondent added that although a single source is used in SA, they have a backup supply from overseas should the local supplier fail. Discussions with OEMs and T1 suppliers revealed that often a single local source is used, although competition is created by asking a few local and international suppliers to tender for a contract. T1 suppliers admit that they employ similar competition-based strategies with the T2 suppliers, constantly putting the T2 suppliers under price pressure.

Enforcing Improvement – The "Stick"

The use of the "stick" method, where underperforming suppliers are threatened with the OEMs switching suppliers, or reducing business if they do not improve, does not come across as a popular supplier development practice by the OEMs (refer Table 4.6). The reduction of business with problematic suppliers appears to be marginally favoured above switching suppliers. This can be understood in terms of the high switching costs involved in many cases, such as the human capital investment in training suppliers and the capital investment by OEMs in tooling (OEM-specific tooling is bought by the OEM, while the generic machines are owned by the suppliers; often imported). However, the message about competition is very clear to suppliers. Unless SA suppliers can come up to globally competitive standards, they risk losing their supply contracts. One supplier described certain OEMs as "the hand that feeds and slaps".

Suppliers report that OEMs are reluctant to switch suppliers during the life of a model. Suppliers believe that once they are chosen as the preferred supplier for a model, OEMs will not switch to other suppliers unless there are major unexpected supply problems. OEMs perform intensive process and product audits to test the ability of the supplier prior to the introduction of a new model or part. Thus, once a supplier is granted the contract, the OEMs usually choose to develop rather than switch suppliers if problems arise. T1 suppliers appear to use "the stick" method with respect to T2 suppliers more often than the OEMs do with them. Interviews suggest that this may be the result of less onerous switching costs inherent in the T1-T2 relationships, when compared to the OEM-T1 relationships.

4.5.2 Theme 2: Performance-Evaluation Related Practices

The OEM survey results (shown in Table 4.7) show extensive use of performance-evaluation related practices. T1 suppliers are in complete agreement about the regular use of these practices by OEMs.

Table 4.7: Performance-Evaluation Related Practices

	Number of OEM responses for each category:				
	Never	**Seldom**	**Sometimes**	**Often**	**Always**
2.1 Supplier evaluation and feedback.					
We assess suppliers' performance through informal evaluation, which takes place on an *ad hoc* basis with no set procedures.	2	3	1	1	0
We assess suppliers' performance regularly through formal evaluation, using established guidelines and procedures.	0	0	0	3	4
We provide suppliers with feedback about the results of their evaluation.	0	0	0	5	2
We use a supplier evaluation system tailored to our firm's peculiarities.	0	0	0	3	4
We use a highly detailed supplier evaluation system.	0	0	1	3	3
We use standardized international evaluation criteria.	0	1	0	4	2
We evaluate the influence of supplier performance shortcomings on our firm's performance.	0	0	0	4	3
2.2 Raising performance expectations.					
We use verbal or written requests that suppliers improve their performance.	0	0	1	3	3
We expect that suppliers cut costs and take responsibility for cost reduction.	0	0	0	1	6
We regard increasing quality to be the suppliers' responsibility.	1	0	0	2	4
2.3 Supplier certification.					
We use a supplier certification programme to certify suppliers' quality, thus making incoming inspection unnecessary.	0	1	1	2	3
2.4 Establishing performance improvement in second-tier suppliers.					
We develop certain 2nd tier suppliers.	0	2	3	2	0
We assist first-tier suppliers to implement supplier development strategies.	0	2	1	4	0

Source: SA OEM supplier development survey 2008

Supplier Evaluation and Feedback

Site visits at both OEM and supplier plants emphasised the extent of measurement that goes on in their manufacturing processes. There are charts relating to numerous quality checks, absenteeism rates, productivity *et cetera*. on the shop-floor, which gets fed into higher level graphs for the management of processes as a whole. The OEMs are constantly evaluating and monitoring the performance of suppliers with respect to kpi's, such as cost, quality, and delivery. All OEMs subject their suppliers to product and process audits. This is done intensively with new suppliers and when new models or parts are introduced. Performance evaluation is also done on an ongoing monthly and sometimes daily basis. Suppliers report that OEMs respect the privacy of other OEMs during their product and process audits of suppliers who also supply other OEMs.

The OEM survey results show that performance measurement is mostly done on a formal basis, using established guidelines and procedures, as opposed to informal (*ad hoc*) evaluation. The OEMs all give suppliers continuous feedback of evaluations and kpi's. The feedback of results is important and suppliers say that it assists them in managing their businesses. Some OEMs give daily or weekly online feedback of results. TSAM has monthly supplier meetings where good and poor performing suppliers are identified and feedback given.

A complaint from suppliers is that all the OEMs have slightly different measures of essentially the same kpi's. Some suppliers find it inefficient to prepare data in the particular formats required by the various OEMs they supply. However, other suppliers say that they can adapt their information systems fairly easily to prepare the data in various formats. The

T1 suppliers subject their local T2 suppliers to similar product and process audits. However, they generally have fewer resources to devote to supplier evaluation and feedback compared to the OEMs. As such, they tend to perform the comprehensive evaluations less regularly, often annually. However, less onerous quality checks and kpi measurement do take place regularly, together with the feedback of results.

All the OEMs indicated in the survey that they are very aware of the influence of supplier performance shortcomings on their own performance. Suppliers agreed with this, saying that they are constantly made aware of the effect of their component prices on the OEMs' performance and supply chain. T1 suppliers indicate that they also continuously make local T2 suppliers aware of the impact of their performance on the supply chain.

Raising Performance Expectations

The use of written or verbal requests stating that suppliers should improve their performance is regularly used by the OEMs. The responsibility placed on suppliers for continuous cost reduction was highlighted during interviews by both OEMs and suppliers. Suppliers are also held accountable by OEMs for quality improvements. T1 suppliers indicate that they use similar practices with local T2 suppliers.

Supplier Certification

Supplier certification programmes are widely used by the SA OEMs, with five using supplier certification programmes on a regular basis. These certification programmes are often performed in addition to the OEMs' own product and process checks. Certification programmes include quality (TS 16949), environmental (ISO 14001) and safety. Most

suppliers interviewed have the basic quality certifications. TSAM insists on environmental and safety certification for their suppliers. T1 suppliers also encourage and rely on accreditations of the local T2 suppliers, which is particularly useful since T1 suppliers have fewer resources with which to carry out extensive and regular audits of T2 performance.

Establishing Performance Improvement in T2 Suppliers

The OEMs seldom get involved in the development of T2 suppliers. An exception would be made where the T2 is the strategic supplier, performing poorly and the T1 is not able to achieve supplier development. In some cases the T1 supplier may just be a go-between between an OEM and large T2, thus lacking power. In such cases the OEM may get involved. The OEMs encourage supplier development programmes at the T1 supplier's site to develop their T2 suppliers, but most often leave it up to the T1 supplier to implement.

4.5.3 Theme 3: Training-Related Practices

Table 4.8 shows the OEM survey results pertaining to training-related activities.

Table 4.8: Training-Related Practices

	Number of OEM responses for each category:				
	Never	**Seldom**	**Sometimes**	**Often**	**Always**
3.1 Training and education of the supplier's personnel.					
We train/ educate our key suppliers' personnel.	0	0	2	2	3
We do site visits to suppliers' premises to help improve their performance.	0	0	1	4	2
Suppliers' personnel come to our premises on site visits to increase their awareness of how their product is used.	0	0	2	5	0
We use formalised training policies for suppliers.	0	1	2	3	1
We use "showcase suppliers" where one supplier teaches another supplier.	1	3	1	2	0
We provide technical support to suppliers.	0	1	1	3	2
We provide project management support to suppliers.	0	2	3	1	1

Table 4.8: Training-Related Practices (cont.)					
	Never	**Seldom**	**Sometimes**	**Often**	**Always**
3.2 Exchange of personnel between the buying firm and the supplier.					
Our staff may work at suppliers' premises for extended periods (more than a month).	1	3	3	0	0
Supplier staff may work on our premises for extended periods (more than a month).	1	3	3	0	0
We provide training and 'hands-on' assistance within supplier's workplace.	0	1	3	2	1
We provide training for our supplier regarding our firm's production system.	0	1	3	1	2
We have shared career paths between our firm and suppliers i.e. employees and management frequently move from our firm to a supplier firm (or *vice versa*) in their career.	3	4	0	0	0
3.3 Information sharing.					
We give process-oriented, operative advice to suppliers.	0	1	1	5	0
We transfer know-how relating to procurement	0	1	3	2	1
We transfer know-how relating to production planning	0	0	3	4	0
We transfer know-how relating to production scheduling	0	0	3	3	1
We transfer know-how relating to production administrative processes	0	0	3	4	0
We transfer know-how relating to stock management and control	0	0	5	2	0
We give strategic advice to suppliers.	0	1	4	2	0
Our firm's strategic targets are communicated to key suppliers.	0	0	2	2	3
Information about capacity planning is shared with suppliers and *vice versa*.	0	0	1	4	2
Information about costs is shared with suppliers and *vice versa*.	0	0	1	4	2
Information about quality control is shared with suppliers and *vice versa*.	0	0	0	5	2
Information is shared timeously with suppliers and *vice versa*.	0	0	0	5	2
Sensitive information is shared with suppliers and *vice versa*.	0	1	4	2	0
3.4 Supplier integration in new product/process development.					
We assist suppliers to integrate in new product/process development.	0	0	3	2	2
3.5 Buying company support of supplier learning networks.					
We are a member of a supplier learning network.	2	2	0	1	2
We encourage supplier learning network activity	2	1	1	1	2
We encourage our suppliers to participate in supplier learning networks.	2	0	2	1	2
Source: SA OEM supplier development survey 2008					

Training and Education of the Supplier's Personnel

Most OEMs indicate that they engage in regular training-related practices, while two OEMs report that they use these practices only "sometimes". Interviews indicate that all OEMs train suppliers regarding their firm's philosophies, what they expect from suppliers, their production systems, and so forth. For example, BMW has an online training system that offers training to suppliers relating to BMW's production system, *et cetera*. The suppliers agree that intensive training is received at certain times, such as with a new supplier and when a new model or part is introduced. However, suppliers find that training from most OEMs is not ongoing, with the exception of TSAM, whose key strength is ongoing, hands-on training.

OEMs and suppliers agree that site visits are common between OEMs and suppliers. If there is a problem with a supplier part, it is common practice for the supplier to go to the OEM's site or for the OEM engineers to go to the supplier's site. This practice is facilitated by close proximity of the supplier to the OEM. Where distances are prohibitive, suppliers sometimes set up small engineering units at the OEM's premises, to react to problems at the OEM site. Many suppliers feel that visits from OEM representatives are good for the morale of their workers. However, some suppliers find that certain OEMs are too critical on the site visits and have a "finger-pointing attitude". TSAM's attitude is seen to be helpful and non-blaming. Some suppliers have an "open door policy" with certain OEMs, where the OEM can visit their premises anytime and *vice versa.* Few of the OEMs indicated that they regularly make use of "showcase" suppliers, where one supplier learns from improvements implemented at another supplier's premises. Interviews showed that only TSAM uses this practice extensively (see Section 4.6).

The OEM survey indicates that most OEMs provide technical support to suppliers. The suppliers agreed that OEMs provide this support at times of new model and part introduction. However, a high proportion of suppliers believe that they receive more extensive and continuous training and technical support from their own head-offices, their foreign joint venture partners or technical agreement partners. TSAM is very hands-on in dispensing their technical support, according to suppliers. The level of project management support by OEMs is reported as low in the OEM survey, with only two OEMs regularly engaging in this activity. This corroborates the finding reported in Section 4.4 that most OEMs do not offer ongoing direct supplier development. The T1 suppliers generally engage in less extensive training and educating of T2 supplier personnel. However, a handful of the T1 suppliers interviewed do use this practice extensively. Site visits are regularly used between T1 and T2 suppliers in SA.

Exchange of Personnel Between the Buying Firm and the Supplier

Exchange of personnel, where supplier staff works at the OEM's premises (or *vice versa*) for extended periods, is not common practice in SA, in contrast to the regular use found in the Japanese motor industry literature. However, interviews and site visits showed that TSAM engages extensively in this practice. The survey results show that shared career paths between OEMs and suppliers (as is commonly cited in the Japanese literature) are not planned in SA. However, interviews revealed that staff do indeed move between suppliers and OEMs of their own accord (and sometimes back again!). The author met many executives at suppliers' premises, who formerly worked for OEMs and *vice versa*. The T1 suppliers indicated that they lack the resources to deploy staff members to T2 suppliers for extended periods.

Information Sharing

The OEM survey results suggest that much information is shared between OEMs and suppliers and that the information is shared timeously. Suppliers generally agreed with this view. Discussion with suppliers suggests that they report any potential problems timeously to all OEMs. The suppliers feel comfortable contacting all OEMs regarding problems being experienced. They also understand the severe consequences of not reporting production problems in time, which may cause production run stoppages. Both OEMs and suppliers reported the embarrassment and cost of being the cause of a stoppage of the production line.

Some suppliers find that although the OEMs expect open book accounting, the OEMs do not reciprocate by sharing the detailed breakdown of the global prices that they use in negotiations. The OEM survey results show that most OEMs do not regularly give strategic advice to suppliers. This points to a lack of deeper ties and partnering relationships between SA OEMs and suppliers. The survey also indicates that most OEMs do not regularly share sensitive information with suppliers and *vice versa*. However, most suppliers reported that sensitive information regarding common issues *are* shared with OEMs and *vice versa*. Even new model information is shared by OEMs with approved suppliers. Due to the international connections of many suppliers, some suppliers may receive information about new model specifications from international partners before the SA OEM is made aware of them. Some suppliers feel that the sensitive information that they are expected to share with OEMs, such as cost structures, is later used against them. Thus, while information appears to be flowing between OEMs and T1 suppliers, there is a level of mistrust concerning the usage of the information. The T1 suppliers believe that the sharing of information, such as production schedules and costs, between themselves and the T2 suppliers is open and timeous.

Supplier Integration in New Product / Process Development

The survey results show that all OEMs assist key suppliers to integrate in new product / process development. The introduction of a new model or part requires a hive of supplier development activity with the locally chosen suppliers. There are close working relationships to ensure that the supplier will be able to meet the OEM's expectations when production is in full swing. This requires significant upfront training and hands-on assistance at the supplier's premises which may take weeks or months. For example, a supplier reported that BMW engineers and quality experts engaged in intense activities over an eight week period to ensure that the introduction of a new part would run smoothly. There is no local design of new parts in SA, but there are modifications to parts design, especially concerning vehicles not exported to first world countries. Suppliers do play a role in this localisation of design that takes place in SA.

The T1 suppliers indicate good partnering relationships during the introduction of a new product or process with T2 suppliers. This intense level of supplier development decreases once the full production is in progress, once again highlighting the cyclical nature of supplier development in the SA motor industry. However, it needs to be emphasised that very little product or process design occurs in SA, which means that this supplier development practice, which is very well researched in the international literature, is more applicable at the *head-office level* of OEMs and T1 suppliers, and T1 and T2 suppliers, respectively, than at their SA counterparts.

Buying Company Support of Supplier Learning Networks

The OEMs are polarised in their strategy regarding supplier learning networks. The supplier learning network activity in SA relies on the activities of the DAC and The South African Auto Benchmarking Club. Three OEMs encourage and support supplier learning network activity, while the other OEMs "sometimes" or "never" engage in such activities. The OEMs and suppliers in the Durban area report much benefit gained from the DAC activities. Some T1 suppliers said that they have invested much time and effort into the DAC activities, as part of their own supplier development of their T2 suppliers, who are also members of the DAC. Many suppliers felt that The South African Auto Benchmarking Club activities are very useful in the first instance, but not worth repeating annually. Some suppliers prefer to do it once every few years to avoid "paying for the same information more than once". One supplier commented that they prefer to benchmark themselves against their sister companies globally.

Interview results revealed that T1 suppliers do not actively encourage T2 suppliers to be part of supplier learning networks. Learning networks and cluster activities for T2 suppliers have been encouraged by the AIDC and UNIDO in the form of the Tirisano project (see Section 4.5.5). Some T1 suppliers encourage the Tirisano project, but do not participate directly.

4.5.4 Theme 4: Rewards-Based Practices

The OEM survey responses regarding rewards-based practices are shown in Table 4.9.

Table 4.9: Rewards-Based Practices

	Number of OEM responses for each category:				
	Never	**Seldom**	**Sometimes**	**Often**	**Always**
4.1 Recognition and awards					
We recognise suppliers' achievements/ performance in the form of supplier awards.	2	0	0	1	4
4.2 The promise of future benefits - the carrot.					
We promise current benefits, such as a higher volume order of the present item, in return for improved performance.	1	0	2	3	1
We promise future benefits, such as consideration for future business in return for improved performance.	1	0	1	3	2
We support suppliers in their market entry efforts if they meet performance expectations.	0	0	2	3	2
4.3 Direct investment by the buying firm.					
We provide financial support to suppliers.	0	5	2	0	0
We invest in the suppliers' operations.	4	2	1	0	0

Source: SA OEM supplier development survey 2008

Recognition and Awards

All OEMs have historically had supplier award schemes to motivate supplier performance. Two OEMs indicated that they have stopped giving supplier awards. Suppliers view these awards as motivating, especially for shopfloor workers. Suppliers indicate that the supplier awards often count with peers, and are useful when looking for more contracts. Other suppliers believe that the supplier award category structure underweighs complex and critical processes and often makes unfair comparisons. The T1 suppliers indicated that they do not use supplier awards to motivate T2 suppliers.

The Promise of Future Benefits – The "Carrot"

Most OEMs report that they use the "carrot" method of enticing supplier improvements by promising more current or future work. Some suppliers feel that OEMs keep their promises as long as suppliers uphold their side of cost, quality and delivery specifications. Other suppliers are more critical of OEM promises, finding that promises are sometimes not upheld. For example, a case was related where promises were made by a purchasing manager, who subsequently left the country to work elsewhere, which were not upheld by his successor. This would imply that such OEMs do not have a properly structured and integrated incentive scheme, since the scheme is based on the individual making the commitment, rather than the firm's commitment to the supplier. Promises that are not upheld also suggest a lack of focus on trust-building supplier development practices by such OEMs. The T1 suppliers indicated that they make regular use of the "carrot" method of encouraging T2 supplier improvement.

Direct Investment by the Buying Firm

Corresponding to the empirical results in the literature review, Table 4.9 shows that direct investment in suppliers is a very unpopular practice among the SA OEMs. Five of the OEMs rarely provide financial support to suppliers, and six of the OEMs rarely invest in suppliers' operations. While none of the OEMs regularly engage in these practices, the remaining OEMs use them "sometimes". One respondent explained that they support cash flow problems with early payment if necessary. The T1 suppliers confirmed the lack of direct investment in their firms by the OEMs. The T1 suppliers similarly have an aversion to direct investment in T2 suppliers.

4.5.5 Theme 5: Relationship-Building Practices

Table 4.10 presents the OEM survey results concerning relationship-building practices.

Table 4.10: Relationship-Building Practices

	Number of OEM responses for each category:				
	Never	**Seldom**	**Sometimes**	**Often**	**Always**
5.1 Communication with suppliers.					
We facilitate supplier networking days.	0	2	3	1	1
We regularly have one-on-one direct contact with suppliers.	0	0	0	4	3
We communicate with suppliers via telephone, fax, e-mail.	0	0	0	2	5
We communicate with suppliers via electronic data interchange, enterprise resource planning etc.	0	0	0	0	7
We communicate with suppliers via industry websites.	1	2	1	2	1
We have fully integrated systems with suppliers.	0	0	2	1	4
5.2 Developing long-term relationships.					
We have arm's length relationships with key suppliers.	2	2	1	1	1
We view relationships with suppliers as long-term.	0	0	1	1	5
We have long-term contracts with suppliers e.g. life-time of a model.	1	1	2	1	2
There is continuous contact between our firm and our suppliers.	0	0	1	1	5
Supplier's personnel are included in our product design team.	0	1	5	0	1
Our personnel are included in our key suppliers' product design teams.	0	1	3	2	1
5.3 Dedicated supplier development team.					
We have a dedicated supplier development team.	0	1	1	2	3
5.4 Supplier development programmes for special interest groups.					
We develop our BEE suppliers.	0	0	3	3	1
Our suppliers use the government's Black Business Supplier Development Programme.	0	1	4	1	0
5.5 Trust building.					
We try to maintain high standards of honesty and uphold our side of agreements to develop the trust of our suppliers.	0	0	0	1	6
We are committed to our suppliers.	0	0	0	2	5
We take care to treat sensitive supplier information confidentially.	0	0	0	0	7
We place importance on our reputation with suppliers.	0	0	0	0	7
5.6 Supply base rationalisation					
We have reduced the number of suppliers per item bought.	0	0	3	2	2

Source: SA OEM supplier development survey 2008

Communication with Suppliers

The level of communication between OEMs and suppliers is reflected as high in the OEM survey. Interviews with OEMs and suppliers confirm that there is good communication between them concerning production schedules, kpi feedback and production problems. OEMs regularly use direct contact, telephone, fax, and e-mail communication. Further, they have fully integrated systems with suppliers regarding production schedules.

The AIDC plays a role in facilitating communication between OEMs and suppliers. The AIDC holds an Automotive Industry Conference each year which assists networking and communication between stakeholders in the SA motor industry. The mandate of the AIDC is to support and develop the motor industry in SA. The AIDC introduced "The Motor Industry Supply Chain Competitiveness Improvement Programme" (MISCCIP). This is a programme to improve supply chain visibility and traceability in the SA motor industry. MISCCIP "allows true B2B[5] and C2C[6] interface thereby enhancing transactional visibility. The web based portal, which is widely used, also caters for smaller enterprises"[7]. The MISCCIP system translates the OEM production forecasts into the production schedules for suppliers further along the supply chain. Interviews showed that the MISCCIP currently has 300 active users and is expected to be rolled out to further T1 and T2 suppliers in the future.

Many OEMs and suppliers believe that while MISCCIP is a good concept, there have been problems experienced. Some believe that it is most appropriate for smaller companies. Certain OEMs do not use MISCCIP to communicate production planning any longer. These

[5] Business-to-Business
[6] Customer-to-Customer
[7] (www.aidc.co.za/index.php?nlid=199ect=1edc=3)

OEMs use their own systems which translate the OEMs' production plans into the daily amount of parts sourced from each supplier in their supplier networks. This is especially important when using JIT and JIS production methods.

Industry websites are not popular in SA, whereas they are more popular in the overseas literature. Three OEMs use industry websites regularly, whereas three use them rarely. These findings corroborate the findings of Moodley (2002), who found that the SA motor industry may not be taking full advantage of internet-related opportunities. Only two OEMs regularly have supplier networking days to facilitate interaction between suppliers. TSAM has monthly supplier meetings to communicate with their suppliers. T1 suppliers also indicated good communication channels between themselves and the T2 suppliers, but on a more informal and low-tech basis, without elaborate computer integration systems.

Developing Long-Term Relationships

The OEM survey results indicate that most OEMs regard their relationships with suppliers as long-term, often implying the lifetime of a model. Interviews revealed that both OEMs and suppliers recognise the dominance of OEMs in the motor industry supply chain relationships. The suppliers are often dependent on the OEMs and the imbalance of power in the relationship is apparent. The dominance of the OEM in the supply chain is also shown by their prescription of T2 suppliers that may be used by T1 suppliers. Suppliers' descriptions of their relationships with OEMs cover a wide range, from "enemy", "parent-child", "Big Brother" to "partners". Very few suppliers regard OEMs as the "the enemy". Most regard their relationship with OEMs as long-term with mutual trust of a reasonable level. However, many suppliers find their relationship with some OEMs constrained by a continuous focus on

cost, the abuse of open book accounting information in negotiations, and broken promises. The broken promises refer to instances where certain OEMs do not honour verbal promises and incentives agreed by purchasing managers, who have subsequently left the employ of the SA OEM. Many suppliers interviewed regard their relationship with TSAM as the closest to "partnering", although there is still the inherent imbalance of power. Many suppliers said that their relationship with OEMs was dependent to a large extent on the current purchasing executive, as well as the current directives from the OEM head-office. That being said, most suppliers believe that if they keep to cost, quality and delivery promises made, then the relationships are generally long-term. T1 suppliers indicate that they consider their relationships with T2 suppliers as long-term, but once again dominated by cost considerations.

There is very little local design, which explains why OEMs were neutral in their survey responses about the inclusion of suppliers in their design team. However, more OEMs stated that they were included in the suppliers' design teams. The "design" of the parts in SA refers to the localisation of a part. The suppliers report much interaction and working together between themselves and OEMs with the localisation of parts. Global suppliers indicated that their overseas head-offices are highly involved in design teams between OEMs and T1 suppliers, as discussed in the literature.

Interviews indicated a fair level of cooperation and coordination between motor industry suppliers in SA. The amount of *supplier-supplier* interaction appears to differ by region. The Durban region appears to have the most intense supplier-supplier collaboration, according to suppliers interviewed. One supplier source who has worked in both the Eastern Cape region and Durban region reported much higher supplier-supplier cooperation in the

Durban region. This is largely facilitated by the work of the DAC. The facilitating role of TSAM in stimulating supplier-supplier relationships is felt in the Durban region through involvement of suppliers in TSAM "Projects" (see Section 4.6) and other training sessions. NAACAM meetings in the various regions are regarded as useful in enabling supplier networking opportunities. Suppliers indicated that they share information where possible with other suppliers, even local competitors, since often SA suppliers are competing as a country against other countries' suppliers, rather than between themselves in SA. Suppliers reported assisting competitor suppliers by selling them raw material stock to assist them in emergency stock-outs.

Dedicated Supplier Development Team

The OEM survey shows that most OEMs have a dedicated supplier development team. Further discussions with OEMs and suppliers indicate that many OEMs do not have static, dedicated supplier development teams, but rather teams that form as required, predominantly with the introduction of new models and parts. TSAM has the most consistent cohort of supplier development team members. The suppliers regard the work of some supplier development teams as critical and finger-pointing, compared with TSAM's hands-on, practical approach. The T1 suppliers do not have formal supplier development teams, although a few do have comprehensive supplier development programmes for T2 suppliers.

Supplier Development Programmes For Special Interest Groups

The OEM survey results suggest that four OEMs regularly develop BEE suppliers. However, as discussed in Section 4.2, the level of sourcing from B-BBEE compliant component suppliers is low. Interviews revealed that many OEMs and suppliers were not

aware of the government's Black Business Supplier Development Programme. The T1 suppliers indicate that they employ limited development practices aimed at B-BBEE T2 suppliers.

The AIDC has been involved in a number of initiatives to improve the prospects of SME manufacturers and B-BBEE firms in the motor industry. Interviews indicated that the supplier development department of the AIDC currently employs 25 staff members, made up of industrial engineers, two mechanical engineers and four quality management specialists. They assist suppliers with shopfloor programmes, implementation of systems and standards. NAACAM and the AIDC launched a local supplier development programme to identify issues that are better handled at local and regional level, rather than at a national level. The idea was to "think globally" but "act locally". The AIDC implemented the Quality Management Systems Programme and assisted 30 companies to obtain ISO 9000 and TS 16949 accreditations.

The AIDC and the UNIDO launched a joint supplier development programme, called the Tirisano Cluster Programme (where Tirisano means "working together") in 2003 to facilitate international market access for SMEs in the SA automotive components industry. This programme was piloted with Ford and five small suppliers in 2004. The programme is hands-on and teaches the principles and practicalities of continuous improvement, quality, and lean manufacturing. The idea was to raise local content and improve processes along the motor industry value chain. This programme has reached 45 companies thus far, with T1 and T2 SME and BEE suppliers among the beneficiaries.

However, the programme has often struggled to get OEMs and suppliers to participate even though OEMs only pay R70 000 for the intervention that is reported to cost R1.2m to R1.3m. The OEM is asked to name their 10 worst suppliers and the programme will try to rehabilitate them. The future plan is to extend the Tirisano programme to T2 and T3 suppliers, since they are the companies that need the most assistance in the motor industry. The OEMs and T1 suppliers interviewed have mixed views regarding the success of this programme, some reported improvements, while others did not believe that the programme has had a significant impact on the overall B-BBEE status in the SA motor industry. There are still no major inroads as far as sourcing component parts from SME and B-BBEE manufacturers is concerned.

Trust Building

OEM survey results show that the OEMs believe that they engage in intense trust-building activities by upholding their side of agreements, being committed to suppliers and treating sensitive information confidentially. The suppliers are more cynical about the level of trust between themselves and the OEMs, treating their interactions with OEMs with reasonable caution. Issues such as broken promises, the requirement for continuous cost reductions, and the impact of the global economic crisis have placed strain on the relationships. The fact that the buyer-supplier relationship is very dependent on the individual purchasing manager and that some OEMs have not always upheld previous promises made, raises questions about certain OEMs' commitment to trust-building activities. The abuse of open book accounting cost information provided by the suppliers in negotiations, and lack of reciprocity in sharing detailed cost breakdowns of base costs, suggests a further lack of commitment by some OEMs.

Supply Base Rationalisation

The OEM survey shows that there has been supply base rationalisation over the years in the SA motor industry, just as in other countries. This makes sense in terms of the small SA volumes and the need for economies of scale. This allows OEMs to focus supplier development efforts on a smaller base of suppliers. T1 suppliers also report that they have rationalised their supply bases.

4.5.6 Theme 6: Logistics-Related Practices

The OEM survey results regarding logistics-related practices are presented in Table 4.11.

Table 4.11: Logistics-Related Practices

	Number of OEM responses for each category:				
	Never	**Seldom**	**Sometimes**	**Often**	**Always**
6.1 Geographical location.					
We require that suppliers locate close to our premises to facilitate supplier development.	0	0	2	3	2

Source: SA OEM supplier development survey 2008

Geographical Location

Survey results and interviews indicate that all OEMs desire suppliers to locate in close proximity to themselves in supplier parks. There are many practical benefits arising from close proximity, such as quick reaction times if problems arise on the OEM or T1 production lines. Close proximity facilitates less costly training and other supplier development costs. Suppliers in supplier parks offer logistical benefits, such as the use of a “milk run” by the

OEM, where a truck regularly collects components from a circuit of suppliers. The use of JIT and JIS also strengthens the need for suppliers to locate close to OEMs.

However, the OEMs are located in many regions of SA, thus suppliers supplying multiple OEMs would have to give up economies of scale to have multiple branches in close proximity to the relevant OEMs. The small SA manufacturing volumes also makes it economically unviable for many suppliers to set up multiple branches near the various OEMs. Some suppliers have made compromises, such as setting up warehousing facilities with resident engineers near OEMs, to enable quick response times to problems on OEM production lines. But this is the exception rather than the rule. The type of suppliers whose product makes multiple production sites sensible are those that manufacture products that are easily damaged in transit and those that are bulky and hence expensive to transport, such as bumpers.

Supplier parks are fashionable overseas. They are likely to be more viable in larger markets for component parts. The SA government has invested a significant amount of money into the infrastructural development of supplier parks in certain regions. An example is the Industrial Development Zone (IDZ) in East London and the Koega project in Port Elizabeth. The IDZ is supposed to be a duty free area, with cheap rent to enable clustering of suppliers. The author visited the IDZ in East London in which a number of T1 auto suppliers already reside. There are also supplier parks in Uitenhage and Durban. The SA OEMs have accepted the economic constraints on suppliers in pursuing the supplier park model, but do revisit the idea from time to time in discussions with suppliers.

4.5.7 Concluding Remarks for Section 4.5

The discussion of the results of the survey and interviews provides an overall understanding of the nature and extent of supplier development practices in the SA motor industry. The views of the OEMs, T1 suppliers and organisations related to the SA motor industry have been presented and analysed for similarities and divergences in viewpoint. The OEMs generally regard their level of supplier development as higher than that perceived by the T1 suppliers. The SA supplier development landscape is divided into TSAM versus the other OEMs, rather than between OEMs of Eastern versus Western origin. Cross industry specialists suggest that although T1 suppliers may regard the level of supplier development as low, the level is nevertheless higher than that enjoyed in most other SA industries.

While the above analysis provides an overview of supplier development in the SA motor industry, it is useful to investigate the supplier development practices and issues of a SA OEM in more depth. Since TSAM has been identified by the T1 suppliers as a leader in supplier development in SA, and they have allowed for their survey results to be presented individually, a mini case study follows. This in-depth study of the leader in supplier development can provide some important benchmarking insights that are useful for both theory and practice.

4.6 "The Toyota Way" – a Mini Case Study

A key finding emerging from the fieldwork is that the overwhelming majority of T1 suppliers regard TSAM as the leader in supplier development in SA. Suppliers dealing with TSAM describe them as "tough but fair", "in a league of their own" and "hands-on" in their

interactions with suppliers. This corroborates the extensive usage of supplier development practices reflected in their survey responses, shown individually in Tables 4.12 to 4.18. TSAM currently operates two platforms in their Durban plant, producing the Toyota Corolla and the Hilux bakkie.

4.6.1 Supplier Development Policy

Survey results show that TSAM has a global, SA and B-BBEE supplier development policy. TSAM's supplier development policy needs to be understood in the context of their overall business philosophy. The "Toyota Way" and business philosophy permeates their entire operation and their dealings with suppliers. The Toyota philosophy is significantly influenced by their Japanese roots. One staff member commented that although anyone may embrace the Toyota philosophy, you are only likely to have a complete understanding if you are Japanese. The influence of their philosophy was observed at certain suppliers' premises during site visits. *Kaizen* improvement principles, continuous improvement, the Toyota Production System (TPS), visualisation techniques, JIT, JIS and lean manufacturing processes are key components of their overall strategy implementation. Their business philosophy relies on mutual respect for fellow workers. The suppliers find that TSAM does not shout or point fingers when problems arise. Rather, they are seen as willing to help to find the source of the problem, using a "go look and see for yourself" approach.

For the last three years, Toyota worldwide has embraced the philosophy of safety first, followed by quality. This was observed throughout their SA plant in their strict adherence to demarcated walkways which prevent employees getting in the way of forklifts *et cetera*. Also, safety curtains are used at the entrances of areas using robotic equipment. These are

invisible fields that sound alarms and switch off the machine should someone pass through the safety curtain. Their safety focus is also demonstrated by their insistence on regular safety audits at their suppliers' plants. Toyota head-office does not think it is sufficient for Toyota plants throughout the world to have a safety focus for employees, if the same is not true for their suppliers. Many SA suppliers welcome this intervention at their plants.

TSAM is a leader in both production volumes and local content in SA. The general Toyota philosophy is to develop local supply bases in their global production locations. TSAM sees their survival as dependent on increased local content since localisation offers benefits such as logistical flexibility and minimisation of foreign exchange risk associated with importing. TSAM has the attitude that if an OEM is going to import all the parts, why assemble in SA? Before the financial crisis TSAM imported 65 percent of component parts. A significant amount of technologically complex components are imported, such as gear boxes and engines. Currently, fifty percent of their suppliers are located in SA, consisting of 82 local component suppliers. Many of the SA suppliers are in the Durban region, but TSAM have suppliers all around the country. They regard all suppliers as "key". Of their suppliers located in SA, about 18 percent are locally owned. Most of the TSAM SA suppliers are global firms, as described earlier. However, they are not averse to using competitive national champions.

TSAM indicate that they are under much pressure to improve their B-BBEE scorecard. Their aim is to have a level four rating by 2012. Their suppliers feel that they are being put under pressure to assist in this regard. TSAM has good B-BBEE sourcing as far as non-component parts and dealerships are concerned. Their annual spend on these non-component parts is large and sixty to seventy percent of their consumables are sourced from B-BBEE firms.

However, the sourcing of *component parts* from companies with high B-BBEE compliance remains low.

4.6.2 Supplier Development Strategy

The details of TSAM's supplier development strategy are shown in Table 4.12.

Table 4.12: TSAM's Supplier Development Strategy

	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
We engage in intense supplier development strategy.					X
We have a proactive strategic supplier development strategy.					X
We have a reactive supplier development strategy.		X			
Supplier development is important to our overall strategy.					X
Our supplier development strategy is understood by key personnel.				X	
My firm's motives for their supplier development strategy includes:					
• Global competition.					X
• MIDP and other government incentives.					X
• To facilitate BEE compliance.				X	

Source: OEM Supplier Development Survey 2008

TSAM rarely practises supplier development on foreign suppliers. They leave this to their sister companies located in the foreign countries. However, if required, TSAM executives will visit a foreign supplier to sort out problems. As seen in Table 4.12, survey results indicate that TSAM's supplier development strategy with local SA suppliers is intense and proactive. The supplier development team aims to have a structured approach in assisting

suppliers with *Kaizen* and continuous improvements, rather than simply a "fire fighting", reactionary approach. This was corroborated by supplier interviews.

TSAM employs many direct supplier development practices, requiring significant human and capital resources, which corroborates their survey response that supplier development is an important part of their overall strategy. This is further reflected by the fact that suppliers regard their supplier development efforts to be on-going, as opposed to sporadic, which is the suppliers' description of other OEM supplier development initiatives. Discussions with shopfloor workers and management, at both TSAM and suppliers' sites, showed the influence of the TSAM supplier development initiatives, confirming that their supplier development philosophy is understood by key TSAM and supplier personnel. TSAM cite global competition, the MIDP and B-BBEE to be key drivers of their supplier development strategy. Supplier interviews support these assertions.

The TSAM purchasing department is divided into three areas: materials and facility, OE[8] parts and supplier technical support (STS). The STS team is multifunctional including industrial engineers and quality specialists. The STS division is further split into the "Production Preparation" and "Supplier Development" subdivisions. Production Preparation deals with the preparation required for the introduction of a new model or part, including any localisation, compatibility and capacity aspects. The Supplier Development subdivision focuses on supplier infrastructure, maintenance, safety, training and quality at the suppliers' plants. The composition of the STS division changes in response to the lifecycle of the models. For example, during the preparation phase of a new model introduction, more staff members are used in the Production Preparation subdivision. After the model introduction

[8] Original Equipment

phase, some of these staff members will shift across to the Supplier Development subdivision.

The STS division embraces the concepts of continuous improvement and reflection and adapts their approach to various business climates and product lifecycles. During the period 1999-2002 (before the introduction of the Corolla in 2002), supplier development activities were more broad-based, with all local key suppliers being visited on a regular basis. During 2002 to 2007, the Hilux localisation content increased, which means that staff from the Supplier Development team were needed on the Production Preparation side. Thus, in 2005-2006 TSAM was operating a relatively small Supplier Development team, which focused their attention on a small group of suppliers. At this stage, retired supplier development and quality experts were used to assist suppliers, referred to as the "Grey Brigade". Once the new Corolla was introduced in 2007, much of the staff from Production Preparation rejoined the Supplier Development team. Over the last decade there has been a general move by TSAM from a more broad-based approach to supplier development, where all suppliers are visited on a regular basis, to a more focused approach, where a few suppliers are focused on at a time.

TSAM do not believe that the global financial crisis will change their strategy to develop local suppliers. However, the impact of the crisis is certainly being felt by TSAM and suppliers, with morale levels low due to the slowdown of volumes. TSAM acknowledges that supplier development is costly and has sought to reduce these costs during the crisis by choosing to focus supplier development activity, where possible, on suppliers in close proximity, so as to save on travel costs. A detailed discussion of TSAM's supplier

development practices follows, under the six main themes of supplier development practices identified by the author in the literature review.

4.6.3 Detailed Discussion of TSAM's Supplier Development Practices

4.6.3 (i) Theme 1: Competition-Based Practices

TSAM's competition-based practices are summarised in Table 4.13.

Table 4.13: TSAM's Competition-Based Practices

	Never	Seldom	Sometimes	Often	Always
1.1 Introducing competition into the supply base.					
We use 2 or 3 suppliers for a purchased item to create competition among suppliers.		X			
We use 4 or more suppliers for a purchased item to create competition among suppliers.	X				
1.2 Enforcing improvement – the stick.					
We threaten to switch suppliers if suppliers do not perform up to expectations.		X			
We reduce business with suppliers if they do not perform up to expectations.			X		

Source: SA OEM Supplier Development Survey 2008

Introducing Competition into the Supply Base

Survey results and interviews confirm that TSAM prefers single source supply in SA, owing to the need for economies of scale at their suppliers. They may have backup foreign sources in place, should local suppliers fail. They make strong use of the competitive influence of the world base cost (index cost) to inspire improved performance among SA suppliers. Suppliers are aware that TSAM has the option of importing from Japan or Thailand, or getting Japanese suppliers to set up operations in SA. While cost is not often mentioned, there is an implicit understanding that cost cutting is always on the agenda.

Enforcing Improvement – The "Stick"

TSAM are not proponents of the "stick" method of extracting improvements; they prefer the "helping hand" approach. The reduction of business with underperforming suppliers is marginally favoured over switching suppliers.

4.6.3 (ii) Theme 2: Performance-Evaluation Related Practices

TSAM's performance-evaluation related practices are shown in Table 4.14.

Table 4.14: TSAM's Performance-Evaluation Related Practices

	Never	Seldom	Sometimes	Often	Always
2.1 Supplier evaluation and feedback.					
We assess suppliers' performance through informal evaluation, which takes place on an *ad hoc* basis with no set procedures.		X			
We assess suppliers' performance regularly through formal evaluation, using established guidelines and procedures.				X	
We provide suppliers with feedback about the results of their evaluation.				X	
We use a supplier evaluation system tailored to our firm's peculiarities.					X
We use a highly detailed supplier evaluation system.				X	
We use standardized international evaluation criteria.				X	
We evaluate the influence of supplier performance shortcomings on our firm's performance.					X
2.2 Raising performance expectations.					
We use verbal or written requests that suppliers improve their performance.					X
We expect that suppliers cut costs and take responsibility for cost reduction.					X
We regard increasing quality to be the suppliers' responsibility.					X
2.3 Supplier certification.					
We use a supplier certification programme to certify suppliers' quality, thus making incoming inspection unnecessary.		X			
2.4 Establishing performance improvement in second-tier suppliers.					
We develop certain 2nd tier suppliers.			X		
We assist first-tier suppliers to implement supplier development strategies.				X	

Source: SA OEM Supplier Development Survey 2008

Supplier Evaluation and Feedback

TSAM has formalised, frequent supplier evaluation procedures and feedback. Kpi's are measured daily and communicated to suppliers. Part of TSAM's supplier feedback system can be likened to a soccer game. The feedback of good and bad performance of suppliers is communicated at monthly supplier executive meetings. If a supplier has performed poorly, they are presented with a "yellow card" (a framed picture of a yellow card which states which area needs improvement) at the meeting. The TSAM team then works with the supplier to correct the problem. When the problem has been rectified, the supplier then officially hands back the framed "yellow card" at a subsequent supplier meeting. Should a supplier receive more than three yellow cards which are not rectified within a reasonable period, they will then be presented with a red card. However, there have been no red cards presented to date.

To identify which SA suppliers to focus on, TSAM have recently undertaken an initiative to evaluate all local component suppliers, based on criteria including quality, delivery, safety and shopfloor management. Each supplier was graded, using colours for visualisation, into: being successful in this category, needing some improvement, or needing much improvement. The suppliers' colour-coded performance data is displayed on the wall of TSAM's supplier development team room. Management can thus see, at a glance, which suppliers need interventions and in which areas.

Raising Performance Expectations

TSAM's "helping hand" approach should not be misinterpreted as meaning that they are less stringent on cost and quality standards. Suppliers regard Toyota as "tough but fair". TSAM

have high performance expectations where they expect their suppliers to take responsibility for continuous cost reductions and quality improvements; they do not suffer fools lightly.

Supplier Certification

TSAM expects suppliers to go through the normal certification procedures, but they do not rely exclusively on these certificates. They perform their own checks and audits and perform checks on incoming parts. TSAM is unique in emphasising safety certificates.

Establishing Performance Improvement in T2 Suppliers

While TSAM does not usually get involved in the development of T2 suppliers, they will if the T1 is having trouble with the T2. They also assist T1 suppliers in developing their own supplier development programmes and participate in the DAC activities.

4.6.3 (iii) Theme 3: Training-Related Practices

The training-related practice survey results for TSAM are shown in Table 4.15.

Table 4.15: TSAM's Training-Related Practices

	Never	Seldom	Sometimes	Often	Always
3.1 Training and education of the supplier's personnel.					
We train/ educate our key suppliers' personnel.					X
We do site visits to suppliers' premises to help improve their performance.				X	
Suppliers' personnel come to our premises on site visits to increase their awareness of how their product is used.				X	
We use formalised training policies for suppliers.				X	
We use "showcase suppliers" where one supplier teaches another supplier.				X	
We provide technical support to suppliers.				X	
We provide project management support to suppliers.			X		
3.2 Exchange of personnel between the buying firm and the supplier.					
Our staff may work at suppliers' premises for extended periods (more than a month).			X		

Table 4.15: TSAM's Training-Related Practices (cont.)					
	Never	**Seldom**	**Sometimes**	**Often**	**Always**
Supplier staff may work on our premises for extended periods (more than a month).		X			
We provide training and 'hand-on' assistance within supplier's workplace.				X	
We provide training for our supplier regarding our firm's production system.					X
We have shared career paths between our firm and suppliers i.e. employees and management frequently move from our firm to a supplier firm (or *vice versa*) in their career.		X			
3.3 Information sharing.					
We give process-oriented, operative advice to suppliers.				X	
We transfer know-how relating to procurement					X
We transfer know-how relating to production planning				X	
We transfer know-how relating to production scheduling				X	
We transfer know-how relating to production administrative processes			X		
We transfer know-how relating to stock management and control				X	
We give strategic advice to suppliers.			X		
Our firm's strategic targets are communicated to key suppliers.					X
Information about capacity planning is shared with suppliers and *vice versa*.					X
Information about costs is shared with suppliers and *vice versa*.					X
Information about quality control is shared with suppliers and *vice versa*.					X
Information is shared timeously with suppliers and *vice versa*.					X
Sensitive information is shared with suppliers and *vice versa*.				X	
3.4 Supplier integration in new product/process development.					
We assist suppliers to integrate in new product/process development.					X
3.5 Buying company support of supplier learning networks.					
We are a member of a supplier learning network.					X
We encourage supplier learning network activity					X
We encourage our suppliers to participate in supplier learning networks.					X
Source: SA OEM Supplier Development Survey 2008					

Training and Education of the Supplier's Personnel

A key strength of TSAM's supplier development is training. What sets TSAM apart is their practical, hands-on approach to training and problem solving. Supplier interviews confirm that TSAM employs the "go look and see" and "find the source of the problem" philosophy in solving problems. TSAM continuously runs training workshops for their own employees, which their suppliers' employees are invited to attend. These workshops cover issues such as: quality, the Toyota Production System (TPS) and safety. The extent of TSAM's training has included taking 10 selected supplier executives to Thailand on a learning expedition in 2006. They are currently setting up an executive programme with the University of Stellenbosch. This training is in keeping with Toyota's belief in the philosophy of continuous improvement and *Kaizen* practices.

TSAM management seeks to learn by visiting their Japanese and Thai plants. TSAM executives find that visiting other SA companies' plants, such as SA Breweries, Telkom and Sasol, assists them in their improvement programmes. They recognise a benefit in benchmarking themselves against firms outside their industry and find innovation and inspiration from firms in other industries. Firms from other industries are welcomed to conduct site visits at TSAM's premises, as part of the learning philosophy. TSAM use "visualisation" techniques in their training, where for example safety notices are prominently displayed around the shopfloor. These visualisation techniques were observed first hand at suppliers' premises during site visits, showing the success of TSAM training workshops and Projects at the shopfloor level.

In 2009, TSAM introduced a supplier development initiative referred to as "Projects" for groups of suppliers. Based on the areas identified as weak in their evaluations of suppliers, groups of six suppliers are invited to work on a Project, or learning opportunity, with regular hands-on meetings over a number of months. One supplier needing improvement acts as the host where the other suppliers and TSAM staff members meet. The suppliers in the Project groups are chosen such that they are never in direct competition with each other. Their approach with supplier development Projects is to set targets and to match Projects to the needs of the suppliers. A bit of theory is presented by the TSAM facilitators at the start of the Project meeting. The Project group is then divided into teams who each need to find a solution to a problem identified at the host supplier. The aim of the Projects is to be long-term and capability-building in nature.

A TSAM manager described the Project work as trying to prevent the fire in the first place, as opposed to fire fighting. Since the support of suppliers' top management is deemed imperative to achieve improvements of suppliers, TSAM require supplier executives to sign a document of commitment to see the Project through before being allowed to take part in a Project. An example of a Project was to help a host supplier improve their inefficient workflow such that the distance covered by work-in-progress was reduced from 9 km per day, to 3 km per day. When such an improvement is effected, the supplier is encouraged to show the before and after pictures of the assembly area, to try to motivate and educate shopfloor workers as to the possibilities of such improvements by using visualisation techniques.

Site visits at suppliers' and TSAM's premises are common practise with TSAM and its suppliers. TSAM has an open door policy with suppliers where suppliers are welcome to

come and view their production line at any time. Many TSAM suppliers also have an open door policy with TSAM, where TSAM engineers and quality expert staff are welcome to visit their plant whenever they choose. TSAM has even invited other OEMs to visit their plant; the invitation is not generally reciprocated. TSAM encourages their suppliers to have an open door policy among themselves to create synergies for the SA component supply base.

TSAM employs the use of "showcase" and "model" suppliers to enable suppliers to learn from other suppliers. "Showcase" suppliers are reasonably performing suppliers that can still benefit from further improvement. These suppliers agree to open their doors to other suppliers to come, see, help and learn, under the guidance of TSAM. TSAM also have "model" suppliers which they regard as examples of competence and success, with good continuous improvement programmes in-house, who are willing to show other suppliers the standards to be aimed at.

The notion of "model" supplier was taken to the extreme by TSAM when they took the 10 supplier executives on the trip to Thailand to observe and learn from the successes of "model" suppliers in Thailand. TSAM often looks to Toyota Thailand as a "model" OEM. Thailand is regarded as an important comparison for TSAM and its local suppliers since the Thai motor industry is successful and is a major competitor country. TSAM has found that the most successful cases of supplier development occur with top supplier management support. Initiatives such as the Thailand trip promote this top management support by suppliers of TSAM's supplier development efforts.

Exchange of Personnel Between the Buying Firm and the Supplier

During site visits at suppliers around the country, the results of TSAM's supplier development efforts were observed first hand. The author witnessed TSAM employees assisting at suppliers' premises. Discussions with these TSAM staff members (mostly industrial engineers and quality experts) revealed that these staff members are often deployed to suppliers' premises for weeks and even months on end. The suppliers reported an improvement in their staff morale when TSAM staff are deployed at their premises. One supplier recounted that top Toyota executives from Japan had been stationed at their premises for a number of weeks to assist them with their production and quality systems. The supplier described the huge morale boost when such top executives spend time getting down to the nitty-gritty of the supplier's business. The humility and non-finger pointing style of Toyota was again professed by this supplier.

Information Sharing

One supplier reported that TSAM is the only OEM who truly listens and understands them. Information is shared openly between TSAM and suppliers. TSAM has a philosophy of "bad news first" where production problems are not hidden, but are dealt with as soon as possible. Their helpful, rather than finger-pointing, philosophy encourages suppliers to feel comfortable when sharing information with them. They encourage open-book accounting. However, some suppliers feel that this information is held against them in price negotiations.

In 2010 Toyota has needed to recall over 11 million vehicles worldwide, due to accelerator, floor mat and brake problems (The Sunday Times, 4 April 2010). Toyota, the suppliers of the problem components, and other experts (even NASA) have yet to agree on the exact

cause of the acceleration problems, suggesting that it is a complex issue. Toyota believes the problem with the unintended acceleration resulted from erosion of the pedal mechanism or with floormats that worked loose and jammed the accelerator. However, others think that electronics may be a contributing factor (The Sunday Times, 4 April 2010). Toyota's history and reputation place them in a strong position to find and rectify the sources of these problems. By the end of March 2010 TSAM had already handled 19 695 vehicles as part of its local recall programme to repair potentially faulty acceleration mechanisms on more than 52 000 vehicles; thus set to meet their June deadline (Venter, 2010).

Supplier Integration in New Product / Process Development

There is a peak of activity when new models / parts are introduced in SA, with increased numbers of personnel forming part of the Production Preparation team of the STS division. However, since very limited design takes place in SA, the design element of this practice is much more intense at the Toyota and supplier head-office level, compared with their SA counterparts.

Buying Company Support of Supplier Learning Networks

TSAM are avid supporters of supplier learning networks and encourage the work of the DAC and The South African Auto Benchmarking Club. Their work on Projects and monthly supplier feedback meetings encourages supplier cooperation and networking. The suppliers in the Durban area indicate more close connection and synergies with fellow suppliers than in other areas. This is thought to be assisted by TSAM's influence.

4.6.3 (iv) Theme 4: Rewards-Based Practices

TSAM's usage of rewards-based practices are summarised in Table 4.16.

Table 4.16: TSAM's Rewards-Based Practices

	Never	Seldom	Sometimes	Often	Always
4.1 Recognition and awards					
We recognise suppliers' achievements/ performance in the form of supplier awards.					X
4.2 The promise of future benefits - the carrot.					
We promise current benefits, such as a higher volume order of the present item, in return for improved performance.					X
We promise future benefits, such as consideration for future business in return for improved performance.					X
We support suppliers in their market entry efforts if they meet performance expectations.					X
4.3 Direct investment by the buying firm.					
We provide financial support to suppliers.			X		
We invest in the suppliers' operations.	X				

Source: SA OEM Supplier Development Survey 2008

Recognition and Awards

TSAM give supplier awards to inspire improved performance. Suppliers that have received such awards regard them as useful when bidding for contracts with other OEMs and good for staff morale.

The Promise of Future Benefits - the "Carrot"

TSAM inspires improved performance of suppliers by the promise of more current, as well as future business. Suppliers generally place reliance on TSAM honouring these promises.

Direct Investment by the Buying Firm

Direct financial investment in suppliers is not used by TSAM, as is also true of other SA OEMs and cross-industry supplier development literature.

4.6.3 (v) Theme 5: Relationship-Building Practices

TSAM's relationship-building practices are reflected in Table 4.17.

Table 4.17: TSAM's Relationship-Building Practices

	Never	Seldom	Sometimes	Often	Always
5.1 Communication with suppliers.					
We facilitate supplier networking days.				X	
We regularly have one-on-one direct contact with suppliers.				X	
We communicate with suppliers via telephone, fax, e-mail.				X	
We communicate with suppliers via electronic data interchange (EDI), enterprise resource planning (ERP) etc.					X
We communicate with suppliers via industry websites.		X			
We have fully integrated systems with suppliers.					X
5.2 Developing long-term relationships.					
We have arm's length relationships with key suppliers.	X				
We view relationships with suppliers as long-term.					X
We have long-term contracts with suppliers e.g. life-time of a model.			X		
There is continuous contact between our firm and our suppliers.					X
Supplier's personnel are included in our product design team.			X		
Our personnel are included in our key suppliers' product design teams.				X	
5.3 Dedicated supplier development team.					
We have a dedicated supplier development team.					X
5.4 Supplier development programmes for special interest groups.					
We develop our BEE suppliers.				X	
Our suppliers use the government's Black Business Supplier Development Programme.			X		
5.5 Trust building.					
We try to maintain high standards of honesty and uphold our side of agreements to develop the trust of our suppliers.					X
We are committed to our suppliers.					X
We take care to treat sensitive supplier information confidentially.					X
We place importance on our reputation with suppliers.					X
5.6 Supply base rationalisation					
We have reduced the number of suppliers per item bought.					X

Source: SA OEM Supplier Development Survey 2008

Communication With Suppliers

Interviews and survey results confirmed that communication between TSAM and suppliers is good and timeous, using much face-to-face contact, as well as fully integrated production planning systems. Websites are again not regularly used, as is the case for the SA OEMs as a group.

Developing Long-Term Relationships

TSAM enjoys the closest relationships with its suppliers in SA, based on supplier interviews. Some suppliers call it a "partnership", while others regard TSAM as more of a "Big Brother". However, the dominance of the OEM in the supply chain nevertheless means that the relationship cannot be regarded as equal. Most supplier sources describe their working relationships with TSAM as good. As mentioned previously, there is no product design, only limited parts modification performed in SA. In such cases, TSAM involves the SA suppliers in this process.

Dedicated Supplier Development Team

TSAM has a dedicated supplier development team as described in Section 4.6.2. TSAM shows its commitment to supplier development through the continuity of their supplier development efforts and dedicated team.

Supplier Development Programmes for Special Interest Groups

TSAM has been involved with initiatives to improve the performance and market access of SMEs and BEE companies. However, the success of such programmes has been limited as

far as components are concerned. Much more success is reported regarding the development and sourcing of non-component parts from BEE companies.

Trust Building

TSAM regards their relationship with suppliers to be based on a high level of trust. This was corroborated by most suppliers. However, suppliers are still mindful about the severe competition that they continuously face and thus cannot take the relationship for granted.

Supply Base Rationalisation

TSAM has rationalised their supply base preferring single source component purchasing in SA. This allows them to focus supplier development efforts on a smaller number of suppliers.

4.6.3 (vi) Theme 6: Logistics-Related Practices

The survey results relating to logistical issues are shown in Table 4.18.

Table 4.18: TSAM's Logistics-Related Practices

	Never	Seldom	Sometimes	Often	Always
6.1 Geographical location.					
We require that suppliers locate close to our premises to facilitate supplier development.					X

Source: SA OEM Supplier Development Survey 2008

Geographical Location

TSAM and suppliers concur that TSAM would prefer their suppliers to locate in supplier parks in close proximity to themselves. TSAM's use of JIT and JIS production methods also

strengthens their argument for suppliers to locate in close proximity. Political, social and economic factors mean that a "pure" JIT system, where almost zero inventory is stored, is not viable in SA, as discussed in Section 4.2. TSAM humorously refers to their buffer stock as "JIC" meaning "just in case" (JIK is a SA household detergent!). They require many of their suppliers to carry three days buffer stock for them. TSAM's use of JIT and JIS principles necessitates frequent deliveries to replenish stock.

TSAM component prices generally exclude transport costs. TSAM operates a "milk-run" where inventory is collected daily at set times from certain suppliers. The TSAM transport crates (called donnages) are cleaned, bar-coded and managed by a service provider. The service provider ensures that donnages are returned to suppliers to be restocked timeously for the next milk-run.

JIS requires the suppliers to pack the various parts into the donnages in the order in which the production line is running. For example, the sequence on the production line may be: white left hand drive hilux bakkie, followed by a red right hand drive hilux bakkie. Thus, a door panel supplier will pack a white door, followed by a red door, and so forth. The number of different specifications for each vehicle is extensive (for example left or right hand drive, colour, manual or automatic) creating a logistical challenge for both TSAM and suppliers. Thus, although TSAM would prefer suppliers to locate in close proximity to enable JIT, JIS, short lead times, and quick response times to problems, they understand that economies of scale often outweigh the benefits obtained from close proximity.

Concluding Remarks for the Section

The case study of TSAM shows a proactive, consistent approach to supplier development. This strategy is in keeping with their overarching strategy to use local suppliers in their production locations. They regard their level of supplier development practices as intense and the suppliers concur with this perspective. TSAM are regarded as "tough but fair". Their relationships with local suppliers are the closest to "partnering" in SA. Toyota's history, reputation, philosophies and work practices place them in a strong position to overcome their current challenges.

The next section provides a comparison of the SA motor industry supplier development results to previous large-scale supplier development surveys. Whilst the limitations of such comparisons are highlighted, it nevertheless puts the SA motor industry results in context.

4.7 Comparison of SA Survey Data to other Empirical Research

Comparison to Watts and Hahn's 1993 Survey Results

Watts and Hahn conducted a cross-industry mail survey of 81 purchasing practitioners in the US in 1993. The SA motor industry data concurs to a certain extent with Watts and Hahn's (1993) finding that the focus of supplier development activities in their sample was mostly short-term in nature, concentrating on improving suppliers' *performance* rather than their *capabilities* (Krause, 1997). Although all SA OEMs engage in intense supplier development sporadically, only TSAM appears to conduct on-going, capacity-building practices.

The SA motor industry data differed from Watts and Hahn's (1993) finding concerning the regularity of evaluation procedures. Most of the SA OEMs (five) conduct performance

evaluations monthly, whereas 44.8 percent of Watts and Hahn's sample conducted annual evaluations. Watts and Hahn's 1993 study showed that 46.6 percent of the sample used formal evaluation and 53.4 percent informal evaluation. The SA survey data shows that all seven SA OEMs regularly use formal evaluation, while two also regularly use informal evaluation procedures.

The above comparison also shows that the SA motor industry tends to make more extensive use of certain supplier development activities than the comparative cross-industry US study. One reason for this may be that, as shown in the literature review, the motor industry has always been a forerunner in the usage of supplier development (Wagner, 2006a). Hence, it would be expected that the SA motor industry survey would indicate more extensive supplier development practices than this comparative cross-industry survey. Also, the SA survey was conducted in 2008 while the US survey relates to 1993. The literature review shows that there has been a general trend of increased supplier development being practised in the West over this period (Wagner, 2006a), which may also explain the more extensive supplier development practices in 2008 versus 1993.

Comparison to Krause's 1997 Survey Results

Krause conducted a supplier development survey of 527 manufacturing and service companies in the US in 1997. The 14 questions posed by him were included in the SA questionnaire. The purpose of the comparison of the SA survey data to Krause's data is to get a sense of the differences and similarities between the motor industry and a cross section of industries. It is noted that the countries and time periods differ, which makes it difficult to draw any definitive conclusions.

The Likert scale means presented in Krause's results show a much lower trend in usage of supplier development practices than the comparative results from the SA study. This is expected due to reasons similar to those relating to Watts and Hahn's study above. The SA results concurred with Krause's (1997) finding that firms make use of some supplier development practices more than others. Krause (1997) found that training and education of supplier personnel and investment in supplier operations were rarely used in comparison with other activities, such as site visits to suppliers' premises and the use of supplier certification programs. The SA data differs in that training and education is regularly used by most SA OEMs. The SA data concurs with respect to the rare use of investment in supplier operations by OEMs. In accordance with Krause's results, site visits and supplier certification are also popular supplier development activities with the SA OEMs.

Krause's (1997) survey results presented the following supplier development practices as the most highly ranked: feedback of evaluation results, site visits to both the suppliers' and buyers' premises, and verbal or written requests for improved performance. These practices are used regularly by most of the SA OEMs. On the other hand, the lowest ranked practices in Krause's (1997) survey were: investment in the suppliers' operation, use of four or more suppliers per purchased item, training and education of supplier personnel, and use of supplier awards. The SA results concur with respect to the rare use of investment in the suppliers' operations and the rare use of four or more suppliers per purchased item. However, the SA results show regular use of training and education of suppliers' personnel by most of the SA OEMs, differing from Krause's (1997) results. Also, most SA OEMs regularly use supplier awards, which differs from Krause's results.

Krause's (1997) survey results suggest that the sampled firms were more inclined to use two or three suppliers per purchased item, than using four or more. This concurs with the SA motor industry findings. The cross-industry survey shows the use of both formal and informal evaluation, while the SA study showed more widespread use of formal evaluation.

Comparison to Wagner's 2006 Survey Results

Wagner conducted a supplier development survey in 2006 relating to 173 large industrial firms from a variety of industries in Germany, Switzerland and Austria. The questions posed in Wagner's survey are included in the SA survey questionnaire. The purpose of comparing the SA motor industry data to Wagner's sample of industrial firms is to get a sense of the status of the SA motor industry supplier development when compared to a cross-section of *industrial* companies. Wagner's sample offers a closer comparison than Krause's (1997) study, since Wagner's sample includes only industrial firms, whereas Krause's study also included service firms. Wagner's sample includes seven percent of firms from the motor industry. It is again noted that the countries and time period differ between the two studies, which needs to be considered when making comparisons.

Wagner's results suggest that the evaluation process is an important feature of the respondents' supplier development activities (Wagner, 2006a). The following evaluation-related practices appear to be more widely used than other practices in Wagner's survey: formal evaluation procedures, informal evaluation procedures, having a detailed evaluation system, having an evaluation system tailored to the firm's peculiarities, feedback of evaluation results, and assessment of a supplier's shortcomings on the buying firm's performance. Another practice that appears to be widely used by Wagner's respondents is

giving process-oriented advice. The SA data shows regular use by most SA OEMs of the abovementioned evaluation procedures, with the exception of *ad hoc* evaluations, which are regularly used by only two SA OEMs and rarely used by four OEMs. Giving process-oriented advice is used regularly by five SA OEMs, which corresponds with Wagner's results.

Investment in suppliers and the provision of financial support appear to be unpopular practices among Wagner's respondents. This concurs with both Krause's study, as well as the SA study. Other unpopular practices found in Wagner's study are supplier awards, staff exchanges (transfer of staff), and supplier networking days. SA OEMs differ from Wagner's findings regarding supplier awards. Five OEMs use supplier awards regularly and two rarely. Staff exchanges are not popular among the SA OEMs, which concurs with Wagner's study. The SA OEMs' response to supplier networking days is varied; two use this regularly, three "sometimes" and two rarely, which differs from Wagner's results.

Concluding Remarks for the Section

The SA motor industry data does not fully support Wagner's and Krause's overall perception from their 2006 and 1997 studies, respectively, that firms are reluctant to develop suppliers (Wagner, 2006a). The SA survey results suggest that there is at least a moderate level of supplier development in the motor industry, peaking at times of new model / part introductions and with the vetting of new suppliers. The comparison of SA data to past cross-industry surveys supports the literature which highlights the motor industry as a leading user of supplier development practices. It also highlights the increasing trend over time in the level of supplier development practices in the West. The SA results were similar to the

cross-industry data in the strong preference for rationalisation of suppliers and the use of evaluation procedures. There was also concurrence about the reluctance to use direct investment in suppliers. However, differences were also found, predominantly showing that the motor industry uses more intense and direct supplier development practices than most other industries, as reflected in the comparative cross-industry surveys.

4.8 Chapter Summary

The SA results are based on multi-method fieldwork consisting of a survey of all SA light passenger vehicle OEMs and follow-up interviews with the OEMs and a sample of T1 suppliers, providing a dyadic view of supplier development. Further insight was obtained from interviews with organisations playing a role in the SA motor industry, as well as site visits to OEM and T1 supplier premises.

Very little, if any, supplier development is undertaken by SA OEMs with respect to foreign suppliers; such supplier development is left to the OEM firms in the foreign country. The OEMs have global as well as B-BBEE supplier development policies. Some OEMs consider themselves as engaging in more intense supplier development practices than that reflected by other OEMs. The SA OEMs portray their level of supplier development with T1 suppliers in SA as ranging from moderate to high, as per the survey results and follow-up interviews. The survey results in general suggest a more intense, proactive and direct approach to supplier development, than presented by OEMs in interviews, with the exception of TSAM. The T1 suppliers perceive the amount of development received from most OEMs as low to moderate. The exception is that the overwhelming majority of suppliers view the level of supplier development received from TSAM, with their "hands-on", "practical", and "tough

but fair" approach to suppliers, as far more extensive, proactive and continuous than that offered by the other OEMs. Most suppliers agree that the amount of supplier development depends on the stage of the lifecycle of the model, with more intense supplier development activity before the introduction of a new part or model. Suppliers report that a significant role is played by organisations such as the DAC in facilitating supplier development activities.

Detailed discussion with suppliers established that OEMs and T1 suppliers agree that a high amount of competition-based supplier development practices (Theme 1) takes place. They are also in agreement as to the extensive amount of performance-evaluation based activities practised (Theme 2). The use of rewards-based practices (Theme 4) and logistics-related activities (Theme 6) are also non-contentious. There are discrepancies in perception as to the amount of training-related activities employed (Theme 3). Most T1 suppliers agree that an intense amount of training and supplier development takes place when new parts / models are introduced. However, certain suppliers report a lack of ongoing training-related activities from most OEMs (with the exception of TSAM). The degree to which relationship-building activities (Theme 5) are used is also contentious, with suppliers disagreeing with the level of trust and support reported by the OEMs (once again with the exception of TSAM).

Digging deeper into the cause of the differences in perception of the amount of supplier development taking place, it is submitted that a key factor is the differing perception between the OEMs and suppliers concerning the *motives behind* and *distribution of the benefits* of the supplier development practices taking place. Some suppliers feel that the benefits of supplier development interventions are usurped by the OEMs, without any share for the suppliers. For example, if the OEMs help the supplier to reduce the cost of a component by R2 per unit,

then the OEM may expect a decrease of the full R2 in the component price charged. Also, certain suppliers perceive site visits and performance evaluations by the OEMs to be finger-pointing exercises, rather than mutually beneficial practices, as professed by the OEMs. Many suppliers also feel that the OEMs are obsessed with cost. However, the suppliers did express understanding of the competition faced by the OEMs. Even with criticisms levelled, most suppliers feel that they have a fairly good working relationship with the OEMs, while acknowledging their dependence on them and the imbalance of power in the relationship.

Many OEM and supplier respondents believe that more supplier development is occurring between their respective head-offices, than between their OEM-T1 counterparts in SA. The SA OEMs tend to rely heavily on the supplier head-offices and the foreign partners of global suppliers to perform much of the required developmental support of the SA suppliers. The suppliers confirmed that they often receive more development practices from their own global head-offices, foreign joint venture partners and foreign technical agreement partners, than from the OEMs. Often SA OEMs and T1 suppliers inherit relationships established through foreign head-offices. Sometimes, this translates to little further relationship-building in SA, with respective head-offices simply extending supplier development activities to SA subsidiaries vertically within their own organisations.

However, although the level of supplier development may be found to be lacking from the perspective of the T1 suppliers, interviews with cross-industry specialists and comparisons to international cross-industry surveys suggest that the level of supplier development in the SA motor industry is likely to be higher than that existing in most other industries in SA. An industry specialist, who has experience working in other sectors of the SA economy, believes that the motor industry employs more supplier development practices than other industries he

has worked with, such as the retail and clothing industry. This is in line with worldwide experience that suggests that the motor industry has comparatively more supplier development than most other industries. The aeronautical industry is likely to surpass the level of supplier development in the global motor industry, due to even more rigorous safety requirements.

The level of supplier development between OEMs and T2 suppliers is generally low. The amount of supplier development from T1 to T2 is reported to be limited, due to financial and human capital constraints. However, there are certain practices taking place regularly between T1 and T2 suppliers, such as competition-based practices and performance-evaluation related activities. A few T1 suppliers do engage in a moderate level of supplier development of T2 suppliers. T1 suppliers often rely on head-offices of foreign T2 suppliers to perform any developmental support required.

The amount of sourcing from B-BBEE component suppliers is limited. There are high barriers to entry and stringent cost and quality requirements in the motor industry. OEMs and T1 suppliers bemoan the lack of competitiveness of SA T2 suppliers. However, there is renewed pressure placed on OEMs to improve their B-BBEE scorecards. This pressure is being passed on to the T1 and then the T2 suppliers. The AIDC and UNIDO have had limited success in assisting SMEs and BEE companies in penetrating the automotive component market.

Chapter 5

Conclusions and Areas for Further Research

This dissertation has captured a balanced perspective of the nature and extent of supplier development policies, strategies and practices in the SA motor industry. Multiple data sources were used, namely a survey of all light passenger vehicle OEMs located in SA, OEM interviews, local T1 supplier interviews, interviews with other organisations playing a role in the motor industry, and site visits, to allow for triangulation of data. The SA supplier development practices are also compared to the international supplier development literature and experience.

The research was conducted at a tumultuous time in world economic markets, notably in the international motor industry. The world financial crisis has demonstrated the reliance that firms have on each other within their supply chains, highlighting the significance of a firm's choice of supplier development strategy. The global nature of the motor industry has resulted in the effects of the world financial crisis affecting OEMs and component suppliers all over the world, including SA. The rest of the chapter will present the key findings, the contribution and the limitations of this research, as well as areas for further research.

5.1 Key Findings

SA OEMs do not usually engage in supplier development practices with their foreign suppliers. This is relevant since a large proportion of their components, often more than 50 percent, are imported. The supplier development of foreign suppliers is left to the OEM

firms in those countries. Thus, the detailed results of the dissertation apply to the development of suppliers located in SA.

SA OEMs prefer to source from *global* T1 suppliers located in SA, that is, subsidiaries of global suppliers, or suppliers with foreign joint venture partners or foreign technical agreement partners. This impacts the nature and level of supplier development in SA in that OEMs leave much developmental support of T1 suppliers in SA to foreign head-offices or partners of suppliers.

SA OEMs do not usually develop local T2 suppliers. Such development is the responsibility of the T1 suppliers. The OEMs only get involved in cases where the T1 supplier lacks power and the T2 supplier's performance is significant to the OEM's supply chain competitiveness.

T1 suppliers engage in a moderate to low level of supplier development with respect to local T2 suppliers, citing a lack of human and capital resources to engage in more intense supplier development. Foreign T2 suppliers are rarely developed by SA T1 suppliers.

There are differences of opinion between the SA OEMs and the local T1 suppliers regarding their perception of the intentions behind, the success of, and the sharing of the benefits of, supplier development practices by the OEMs in SA. This natural tension between buyer and supplier perspective was expected based on the literature review.

The OEMs consider their supplier development level to be high to moderate, whereas the T1 suppliers regard the general level to be moderate to low. However, a preliminary cross-industry perspective suggests that the SA motor industry nevertheless enjoys more supplier development from the OEMs with respect to T1 suppliers, than other SA industries. This

supports the literature which identifies the motor industry to be a leader in supplier development.

The OEMs and T1 suppliers concur that the level of supplier development is *cyclical*, depending on the stage in the lifecycle of the model. The level of supplier development peaks when a new supplier is screened or when a new model or part is introduced, thereafter the supplier development practices move from proactive to reactive.

OEMs and T1 suppliers are in agreement concerning the extensive use of competition-based supplier development practices (Theme 1) and performance-evaluation based activities (Theme 2). The use of rewards-based practices (Theme 4) and logistics-related activities (Theme 6) are also non-contentious. Certain discrepancies in perception were found regarding the amount of training-related activities (Theme 3). Most T1 suppliers agree that an intense amount of training and supplier development takes place at certain phases of the product lifecycle, but is not ongoing, with the exception of TSAM. The degree of relationship-building activities (Theme 5) is also contentious, with suppliers disagreeing with the high level of trust and support reported by the OEMs. Suppliers report that their relationships with OEMs are very dependent on the current purchasing executive and on directives received from OEM head-offices. An imbalance of power in the relationship is recognised by suppliers.

The overwhelming majority of T1 suppliers sampled regard TSAM to be "in a league of its own" as far as supplier development is concerned. TSAM is characterised by its hands-on, non finger pointing, proactive and consistent approach to supplier development, with training and continuous improvement as key strengths of their supplier development approach.

The pure East versus West distinction in approach to supplier development that is prevalent in the literature has not been found to be applicable to the SA situation. In SA the division is between TSAM and the "other" SA OEMs, regarding supplier development.

The global nature of the motor industry was apparent throughout the fieldwork, such as global sourcing practices, global supplier development policies and global OEM, T1 and T2 suppliers. Interviews suggest that the intense supplier development takes place at head-office level between OEMs and T1 suppliers. SA OEMs and T1 suppliers then inherit these established relationships vertically from their respective head-offices, rather than intense horizontal relationships being established between SA OEMs and T1 suppliers. This trend is further strengthened by the OEMs reliance on the foreign head-offices and partners of global suppliers to undertake much of the developmental support activities in SA. Thus, in general, the T1 global suppliers appear to receive more developmental support from their own foreign head-office or foreign partners, than from most SA OEMs.

The SA motor industry has a number of innovative projects and organisations which facilitate supplier development, such as the DAC, The South African Auto Benchmarking Club, the Industrial Development Zones, UNIDO and the AIDC interventions, such as the Tirisano Cluster programme.

The SA survey shows that global competition, the MIDP and B-BBEE compliance are key drivers of the OEMs' supplier development strategy in SA. However, the T1 suppliers believe that the MIDP gives the lion's share of the benefits to the OEMs, with insufficient incentives to encourage local supplier support and development. They hope that the new

APDP will encourage further local sourcing, which in turn should lead to more intense supplier development activities.

The OEMs are under intense pressure to improve their B-BBEE scorecards and this pressure is being passed up the supply chain to T1 and T2 suppliers. The foreign sourcing of many T1 and T2 components, as well as the lack of competitiveness of local T1 and T2 suppliers, are cited as challenges to improved local content and B-BBEE scorecards. While most SA OEMs have special B-BBEE supplier development policies, and organisations such as UNIDO and the AIDC have embarked on projects aimed at increasing the entry of B-BBEE companies, the progress made to date is minimal.

The very nature of the motor industry, involving much product and production process complexity, technology and safety features, necessitates a significant level of interaction between OEMs and T1 suppliers to ensure an acceptable output. For example, the widespread use of JIT and JIS production and the presence of safety critical parts, all require a high level of interaction and cooperation between OEMs and suppliers. Further, the investments in tooling and training of suppliers make switching costs prohibitive for OEMs. Thus, when choosing between vertical integration and supplier development, supplier development has often proved to be the favoured option for OEMs. However, the intense supplier development appears to be taking place at head-office level, thereafter being left to the supplier head-offices to develop their own subsidiaries to meet the OEMs' requirements.

The global motor industry crisis has forced all industry players get back to basics. While supplier development can assist to a certain extent, the OEMs express their need for SA T1

and T2 suppliers to reach an internationally competitive level to enable the SA motor industry supply chains to compete globally.

5.2 Contribution of Research

The dissertation contributes to the international and SA literature by providing a *focused* and *comprehensive* study on the topic of supplier development in the SA motor industry, which has not been covered previously in its own right.

The research provides a *dyadic* perspective on supplier development between SA OEMs and T1 suppliers, where the perspectives of the buyer and key suppliers are considered simultaneously. This is scarce in the international supplier development literature, where the buyer's perspective often dominates. The views of organisations playing a role in supplier development in the SA motor industry, such as the AIDC and DAC, offer a further balancing mechanism, so as to gain an *overall* perspective of supplier development.

Not only does the dissertation provide a "big picture" view of supplier development in the SA motor industry, using the survey method, it also provides deeper insights concerning supplier development issues emanating from site visits and face-to-face interviews with OEMs, T1 suppliers and related organisations.

The mini case study of TSAM provides further insights into *best practice* concerning supplier development in the SA motor industry.

The data provides a *benchmark* which can be used by OEMs and T1 suppliers in SA to ascertain how their supplier development policies, strategies and practices compare to the industry. It also enables government and industry experts to determine trends in supplier

development over time, to assess the impact of the financial crisis on supplier development practices, and to measure the success of supplier development initiatives.

5.3 Limitations of the Research

The T1 supplier view was based on a relatively small sample of "key" suppliers. A larger sample of "key" T1 suppliers and a sample of T2 suppliers would provide a more comprehensive "supplier" view of supplier development in the SA motor industry.

5.4 Areas for Future Research

The dissertation is concluded with areas highlighted as topics for further research. These topics are as follows:

- To investigate the drivers of supplier development strategy in the SA motor industry. This includes determining the factors that lead to supplier switching and vertical integration, rather than supplier development;
- To determine the status of supplier development in other SA industries, and to compare the results with the SA motor industry results;
- To compare the nature and extent of supplier development in other countries to the SA findings; and
- To investigate the theories underlying supplier development.

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Appendix A: Supplier Development Questionnaire

The survey questionnaire which was e-mailed to the SA OEMs follows.

A Survey of Supplier Development Practices in the South African Motor Industry: The Perspective of the OEMs

Company Name:

Conducted by:

Lyndie Bayne

Department of Accounting

University of Cape Town

GUIDANCE NOTES

PURPOSE

The purpose of the survey is to measure the status of supplier development in the South African motor industry from the perspective of the OEMs. The time period under consideration is the three years ended June 2008 i.e. before the turmoil caused by the world financial crisis. This research forms part of a Masters of Commerce dissertation.

CONFIDENTIALITY

The Masters student, Lyndie Bayne, pledges not to identify your company in any results emanating from this study. Information will be reported in aggregate, relating to the industry as a whole.

STRUCTURE OF QUESTIONNAIRE

This questionnaire contains **four sections** as shown below. To the greatest extent possible, you are ***only*** required to tick a suitable response, ***except for certain items*** where information and elaboration is requested. The entire questionnaire should take you no more than 30 minutes to complete.

SECTION 1: Supplier development practices

This section is divided into six main themes of supplier development practices. You are asked to indicate your firm's use of these practices ***over the last three years ended June 2008.***

SECTION 2: Supplier development strategy

This section relates to your firm's overall supplier development strategy ***over the last three years ended June 2008.***

SECTION 3: Supplier information

This section is concerned with the characteristics of your suppliers.

SECTION 4: Company information

This section deals with general company information.

SECTION 1: SUPPLIER DEVELOPMENT PRACTICES

Please indicate the extent to which your firm engages in the following activities to increase the performance and/or capabilities of key suppliers, using the following scale:

1=never, 2=seldom, 3=sometimes, 4=often, 5 =always

Please focus on your **key** suppliers when you answer the following questions. Key suppliers are those that are crucial to your business. The time period under consideration is the ***three years ended June 2008 i.e. before the turmoil caused by the world financial crisis.***

THEME 1: COMPETITION-BASED SUPPLIER DEVELOPMENT PRACTICES

(i) Introducing competition into the supply base.

	Never	Seldom	Sometimes	Often	Always
We use **2 or 3 suppliers** for a purchased item to create competition among suppliers.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
We use **4 or more suppliers** for a purchased item to create competition among suppliers.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
Other. Please specify.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
Other. Please specify.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5

(ii) Enforcing improvement – the stick.

	Never	Seldom	Sometimes	Often	Always
We **threaten to switch** suppliers if suppliers do not perform up to expectations.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
We **reduce business** with suppliers if they do not perform up to expectations.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
Other. Please specify.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
Other. Please specify.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5

THEME 2: PERFORMANCE-EVALUATION RELATED SUPPLIER DEVELOPMENT PRACTICES

(i) Supplier evaluation and feedback.

	Never	Seldom	Sometimes	Often	Always
We assess suppliers' performance through **informal evaluation**, which takes place on an *ad hoc* basis with no set procedures.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
We assess suppliers' performance regularly through **formal evaluation**, using established guidelines and procedures.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
We provide suppliers with **feedback** about the results of their evaluation.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
We use a supplier evaluation system **tailored** to our firm's peculiarities.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
We use a highly **detailed** supplier evaluation system.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
We use **standardized international** evaluation criteria.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
We evaluate the influence of **supplier performance shortcomings** on **our** firm's performance.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
Other. Please specify.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
Other. Please specify.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5

Please tick the appropriate box. My firm evaluates suppliers:	
Continuously	[ ]
Monthly	[ ]
Every 3 months	[ ]
Every 6 months	[ ]
Every 12 months	[ ]
Other. Please specify below.	[ ]

(ii) Raising performance expectations.

	Never	Seldom	Sometimes	Often	Always
We use verbal or written **requests** that suppliers improve their performance.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
We expect that **suppliers cut costs** and take **responsibility** for cost reduction.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
We regard increasing **quality** to be the **suppliers' responsibility**.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
Other. Please specify.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
Other. Please specify.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5

(iii) Supplier certification.

	Never	Seldom	Sometimes	Often	Always
We use a **supplier certification programme** to certify suppliers' quality, thus making incoming inspection unnecessary.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
Other. Please specify.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
Other. Please specify.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5

(iv) Establishing performance improvement in second-tier suppliers.

	Never	Seldom	Sometimes	Often	Always
We develop certain **2nd tier suppliers**.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
We **assist first-tier suppliers** to implement supplier development strategies.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
Other. Please specify.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
Other. Please specify.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5

THEME 3: TRAINING-RELATED SUPPLIER DEVELOPMENT PRACTICES

(i) Training and education of the supplier's personnel.

	Never	Seldom	Sometimes	Often	Always
We **train/ educate** our key suppliers' personnel.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
We do **site visits** to **suppliers' premises** to help improve their performance.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
Suppliers' personnel come to **our premises** on **site visits** to increase their awareness of how their product is used.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
We use **formalised** training policies for suppliers.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
We use **"showcase suppliers"** where one supplier teaches another supplier.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
We provide **technical support** to suppliers.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
We provide **project management support** to suppliers.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
Other. Please specify.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
Other. Please specify.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5

(ii) Exchange of personnel between the buying firm and the supplier.

	Never	Seldom	Sometimes	Often	Always
Our staff may work **at suppliers' premises** for extended periods (more than a month).	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
Supplier staff may work **on our premises** for extended periods (more than a month).	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
We provide training and 'hands-on' assistance within **supplier's workplace**.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
We provide training for our supplier regarding **our firm's production system**.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
We have **shared career paths** between our firm and suppliers i.e. employees and management frequently move from our firm to a supplier firm (or vice versa) in their career.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5

Other. Please specify.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
Other. Please specify.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5

(iii) Information sharing.

	Never	Seldom	Sometimes	Often	Always
We give **process-oriented, operative advice** to suppliers.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
We transfer **know-how** to suppliers.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
e.g. **know-how** relating to:					
a) procurement	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
b) production planning	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
c) production scheduling	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
d) production administrative processes	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
e) stock management and control	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
f) other	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
We give **strategic advice** to suppliers.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
Our firm's **strategic targets are communicated** to key suppliers.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
Information about **capacity planning** is shared with suppliers and vice versa.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
Information about **costs** is shared with suppliers and vice versa.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
Information about **quality control** is shared with suppliers and vice versa.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
Information is shared **timeously** with suppliers and vice versa.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
Sensitive information is shared with suppliers and vice versa.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
Other. Please specify.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
Other. Please specify.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5

(iv) Supplier integration in new product/process development.

	Never	Seldom	Sometimes	Often	Always
We assist suppliers to **integrate in new product/process development**.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
Other. Please specify.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
Other. Please specify.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5

(v) Buying company support of supplier learning networks.

	Never	Seldom	Sometimes	Often	Always
We are a **member** of a **supplier learning network.**	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
We **encourage** supplier learning network activity (please elaborate).	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
We **encourage our suppliers** to participate in supplier learning networks.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
Other. Please specify.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
Other. Please specify.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5

THEME 4: REWARDS-BASED SUPPLIER DEVELOPMENT PRACTICES

(i) Recognition and awards

	Never	Seldom	Sometimes	Often	Always
We recognise suppliers' achievements/ performance in the form of **supplier awards**.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
Other. Please specify.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
Other. Please specify.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5

(ii) **The promise of future benefits - the carrot**.

	Never	Seldom	Sometimes	Often	Always
We **promise current benefits**, such as a higher volume order of the present item, in return for improved performance.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
We **promise future benefits**, such as consideration for future business in return for improved performance.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
We support suppliers in their **market entry efforts** if they meet performance expectations.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
Other. Please specify.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
Other. Please specify.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5

(iii) Direct investment by the buying firm.

	Never	Seldom	Sometimes	Often	Always
We provide **financial support** to suppliers.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
We **invest** in the suppliers' operations.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
Other. Please specify.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
Other. Please specify.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5

THEME 5: RELATIONSHIP-BUILDING PRACTICES

(i) Communication with suppliers.

	Never	Seldom	Sometimes	Often	Always
We facilitate **supplier networking days**.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
We regularly have **one-on-one direct contact** with suppliers.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
We communicate with suppliers via **telephone, fax, e-mail**.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
We communicate with suppliers via electronic data interchange **(EDI),** enterprise resource planning **(ERP)** etc.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
We communicate with suppliers via **industry websites**.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
We have **fully integrated** systems with suppliers.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
Other. Please specify.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
Other. Please specify.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5

(ii) Developing long-term relationships.

	Never	Seldom	Sometimes	Often	Always
We have **arm's length** relationships with key suppliers.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
We view relationships with suppliers as **long-term**.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
We have **long-term contracts** with suppliers e.g. life-time of a model.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
There is **continuous contact** between our firm and our suppliers.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
Supplier's personnel are included in our **product design team**.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
Our personnel are included in our key **suppliers' product design teams.**	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
Other. Please specify.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
Other. Please specify.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5

(iii) Dedicated supplier development team.

	Never	Seldom	Sometimes	Often	Always
We have a **dedicated supplier development team**.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
Other. Please specify.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
Other. Please specify.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5

(iv) Supplier development programmes for special interest groups.

	Never	Seldom	Sometimes	Often	Always
We develop **BEE suppliers**.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
Our suppliers use the government's **Black Business Supplier Development Programme.**	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
Other. Please specify.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
Other. Please specify.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5

(v) Trust building.

	Never	Seldom	Sometimes	Often	Always
We try to maintain high standards of **honesty** and **uphold our side of agreements** to **develop the trust** of our suppliers.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
We are **committed** to our suppliers.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
We take care to treat **sensitive supplier information confidentially.**	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
We place importance on our **reputation** with suppliers.					
Other. Please specify.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
Other. Please specify.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5

(vi) Supply base rationalisation

	Never	Seldom	Sometimes	Often	Always
We have **reduced the number** of suppliers per item bought.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
Other. Please specify.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
Other. Please specify.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5

THEME 6: LOGISTICS-RELATED SUPPLIER DEVELOPMENT PRACTICES

(i) Geographical location.

	Never	Seldom	Sometimes	Often	Always
We require that suppliers **locate close** to our premises to enable supplier development.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5

SECTION 2: SUPPLIER DEVELOPMENT STRATEGY (Please tick the appropriate box)

	Yes	No
We have a ***global*** **supplier development policy**.	[ ]	[ ]
We have a separate ***South African*** **supplier development policy**.	[ ]	[ ]
We have a separate ***BEE*** **supplier development policy**.	[ ]	[ ]
Is the **world financial crisis** likely to **affect** your **supplier development strategy**? Please elaborate below.	[ ]	[ ]

On a **scale of 1 to 5 (1 = strongly disagree and 5 = strongly agree)** please indicate the **extent to which you agree** with the following statements about your firm's supplier development strategy. ***Please consider the past three years ended June 2008.***

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
We engage in **intense** supplier development.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
We have a **proactive** strategic supplier development policy.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
We have a **reactive** supplier development policy.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
Supplier development is **important** to our overall strategy.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
Our supplier development strategy is **understood** by key personnel.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
My firm's motives for their supplier development strategy include:	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
Global competition	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
MIDP and other government incentives	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
To facilitate BEE compliance	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5
Other. Please specify below.	[ ]1	[ ]2	[ ]3	[ ]4	[ ]5

SECTION 3: SUPPLIER INFORMATION

	Answer
(i)**How many suppliers** do you have (approximately)?	
(ii)What **percentage** of your suppliers is **"key"** to your business?	
(iii)What **percentage** of your suppliers is **located in SA**?	
(iv)What **percentage** of your suppliers is **located in SA and SA owned**?	
(iv)What **percentage** of your suppliers is **BEE compliant**?	

SECTION 4: COMPANY INFORMATION

	Answer
(i)**Your position** in the company.	
(ii)Period of **time in current position**.	
(iii)**Turnover** in past financial year.	
(iv) **Amount spent on suppliers** in past financial year.	

GENERAL COMMENTS:

Thank you very much for your time!