Framework for Study of Supplier Relationships in Indian Automotive Supply Chains

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Abstract

Indian automotive industry has increasingly adopted global supply chain best practices including supplier relationship as a management imperative, in the last two decades. Increased competition, globalisation, wide-spread outsourcing, use of information technology and rapid technological advances have contributed in supplier relationship development with the objective to achieve competitive advantage and a high level of performance. It is evident that only if mutual benefits accrue to both Vehicle Assemblers (VA) and their suppliers, the partnership between them would be meaningful and effective. Also, VAs have necessarily, to invest considerable resources and effort in achieving collaboration with their suppliers and cost-effectiveness becomes an issue which leads to supply base rationalisation and a segmented approach. Therefore understanding the issues involved and identifying focus areas for successful supplier relationships becomes an imperative. This paper , based on an exploratory study, delves into the VA- supplier interface in Indian automobile supply chains, examines various theoretical and practical dimensions, in order to identify strategic imperatives (key impact drivers), Supplier Management Orientation (SMO) of VAs, adoption of Supplier Development Practices, extent of VA- supplier partnerships and mutual benefits accruing to both entities. Based on this a framework for holistically studying the VA-supplier interface is proposed.

Keywords: Supplier Relationship Management, Automotive Supply Chain, Framework, India, Supply Chain Management

Introduction

The Indian automotive industry, comprising vehicle and component manufacturers, has grown steadily since the economic liberalisation of the early 1990s (Automotive, 2006) due to 100% FDI, availability of skilled workers, low production costs and other factors and this has encouraged global Vehicle Assemblers (VA) and automobile component manufacturers to establish facilities in India or form joint ventures with local partners based on technology transfer or retaining control in strategic areas of management and operations (ACMA, 2014). The arrival of major global auto companies has enhanced competitiveness and galvanised the domestic sector into adopting supply chain best practices leading to a quantum growth in domestic consumption and exports. The Indian automobile industry which comprises about 30 VAs and large number of component manufacturers, many in the Micro, Small and Medium Enterprise (MSME) sector, makes a significant contribution to the country's GDP (about 7%) and absorbs 7-8% of the total employed population. India is the world's sixth largest automotive manufacturing industry with a growth of 14.4% in the last decade. However, export by Indian automotive sector is a low 0.53% of the total domestic production and the latter is only 2.37%of the global production (SIAM, 2014). This is indicative of the potential for growth of the industry and its perceived status as a driver for growth. In the major emerging markets such as India, China, and Brazil, growth and competitiveness of the automotive industry is based on cost considerations, variety and customisation (Humphrey, 1999).

The Indian automotive industry has to operate in an unique and challenging environment of an emerging market, which often leads to sub-optimal implementation of supply chain management practices. Thus there is a case to study global supply chain practices with a view to ascertain its applicability in the Indian automotive industry. This paper explores the important issue of the extent of adoption of supplier relationships in Indian automotive supply chains and its contribution to mutual benefits including supplier

satisfaction and competitive advantage for both VAs and suppliers. In this paper, various aspects of the traditional, generic Buyer-Supplier Relationship (BSR) are examined focusing on specific antecedents and constructs from similar studies in the manufacturing industry, specially the automotive sector. The term Manufacturer–Supplier relationship is alternately used with Vehicle Assembler (VA)-Supplier relationship or simply as supplier relationship, depending on its relevance in the context of usage and specific reference from literature.

The coverage outlines the essentials of automotive supply chains and their complexities both from a global and Indian perspective. The practical significance of partnerships and supplier relationships in SCM, including changing trends in the procurement function, outsourcing, underlying theories and challenges in implementation are studied from a global and Indian context. This includes examining the major constructs and indicators and based on these constructs and their linkages, a framework for studying the VA-supplier interface is proposed. Future direction of research and practical benefit of this study are also suggested.

Overview of Automobile Supply Chains

The automotive industry has been referred to as an "industry of industries" due to the contribution of various stakeholders – both upstream (raw material processing) as well as downstream (after-market, finance etc.) (Drucker, 1946). A vehicle usually comprises about 20,000 components with nearly 1000 subassemblies (Schwarz, 2008) and 15% of the manufacturing process constitutes vehicle assembly with the remaining majority of work involving fabrication and manufacturing of assemblies, sub-assemblies and components by suppliers (Womack, Jones & Roos, 1990) catering to a large number of variants and models (KPMG, 2010) and expanding aftermarkets. The automotive supply chain comprises a large number of suppliers segmented into tiers , and each major supplier may have their own 'sub' supply chains requiring specific efforts in achieving a 'strategic fit' between competitive strategy and supply chain strategy (Soni & Kodali, 2011) calling for high quality in design and manufacturing (Sharma, Sahay & Sardana, 2008). The high level of response and frequent introduction of vehicle variants, with an order lead time of 4-6 weeks (Meyr, 2004) requiring a 'leagile' supply chain (Naylor, Naim & Berry,1999), keeping in mind the importance of aftermarkets, product support as well as contingency planning due to disruptions in this highly networked system (Schwarz, 2008). Compared to supply chains in developed economics, Indian automotive industries have to contend with additional challenges' such as lack of visibility especially in rural markets, cultural diversity impacting labour and packaging, resource shortcoming, fragmented supplier, inadequate infrastructure, multi-level distribution systems and lack of integration of end-to-end entities of the supply chains (Saad & Patel, 2006; Srivastava, 2006; KPMG, 2006) and pose challenges for global companies to establish manufacturing facilities in India (Moser, Kern, Wohlfarth & Hartmann, 2011). Along with the above mentioned challenges some key global trends likely to impact the functioning of automotive supply chains in India are modularization (Sahoo, Banwet & Mamaya,2011),green supply chains (Shukla, Deshmukh & Kanda, 2009), reverse logistics (Joshi, Gupte & Nautiyal, 2013), build-to-order (BTO) supply chains (Gunasekaran & Ngaib, 2005). In essence, a study of advanced automotive supply chains has revealed that to overcome the challenges as enumerated above, the requirement of strong IT infrastructure, close collaboration with suppliers, favourable policies and efficient processes are imperatives (IBM, 2009; Jawahar Babu, 2012). However, majority of the VAs in India such as Bajaj Auto, Ashok Leyland, Tata Motors, Mahindra & Mahindra and some of the larger auto component manufacturers such as TVS Industries and Sundaram Clayton have leveraged technology to achieve effective Supply Chain Management (SCM) (Deloitte, 2013).The Indian industry as a whole is yet to match the supply chain standards of developed countries and tremendous potential therefore exists for integration of supply chains entities (Park, Krishnan, Chinta, Assudani & Lee, 2012).

Supplier Relationship Management

The evolution of BSR may be perceived as being a continuum – from stand-alone transactions, repeated orders, long-term relationships to full partnerships (Goffin *et al*., 2006; Duffy, 2008; Douglas *et al*., 1996). It is evident that strategic alliances can only be undertaken selectively with some suppliers (McCutcheon & Stuart, 2000) and that is why 'partnerships' have been differentiated as a distinct form of what has been known as 'buyer – supplier relationships' (BSR) (Lambert, Emmelhainz & Gardner, 1996). An analysis of various models presented in literature on segmentation of suppliers based on mainly the needs of the VA, reveals some common issues which have been considered by researchers while formulating such models and these are broadly classified based on the aspects such as type of relationship, product characteristics and related complexities of the relationship. These models

are not discussed here but some of the relevant ones are listed in Table 1 along with their basic factors and relevant references from literature. In this section, a brief discussion of the two major underlying theories of BSR is followed by major antecedents of Supplier Relationship Management (SRM) and finally, some significant issues in practical implementation of SRM in the automotive industry are highlighted.

Table 1: Basis of Supplier Segmentation

Factors Considered	References
Joint venture, partnership	Donaldson, 1996; Lambert, 1998
Supplier commitment, asset specificity	Bensaou, 1999
Type of product – technology used, specialisation, uniqueness, importance, risk of supply	Ollsen and Ellram, 1997; Svensson, 2004; Van Weele, 2000
Logistics imperatives – pattern of inventory holdings, buffer requirements	Svensson, 2000; Kraljic, 1983
Type of supplier – market leader, attitude & longevity in partnership, technology specialisation	Dyer *et al*., 1998; Kaufmann *et al*., 2000; Lambert *et al*., 1996; Masella and Rangone, 2000
Source of supply & resulting competitive advantage	Ford, 1998

Underlying Theory

There are quite a few theories based on economic considerations which explain the relationships between entities (firms) in a supply chain and two of the basic ones are the Resource Based Theory and Transaction Based Theory (Hoyt & Huq, 2000; Bensaou & Venkatraman, 1995). Both theories are based on the fact that competitive advantage of firms are dependent on relationships based on information sharing, communication and established knowledge learning processes (Williamson, 1985). The Resource Based View of a firm theorises that unique resources and capabilities owned by a firm, which cannot be easily replicated by others, is the basis for attaining competitive advantage (Dyer & Singh, 1998; Barney, 1991) and has been extended to a supplier network (supply chains) (Lavie,2006), wherein the collaborative dimension between manufacturers and their major suppliers and trust between them is a major ingredient of this relationship (Hoyt & Huq, 2000; Dyer & Singh, 1998). Transaction Cost Theory positively links lowering of transaction costs between partners and enhancement of performance (Dyer & Chu,2003) based on trust and commitment, which ensures that any opportunistic behavior on part of the partners is minimised and thus the reduced transaction cost leads to a long term relationship between the partners and it may be extended to supply chains in which there are multiple transactions between partners based on relational view of firms (Williamson, 2008; Moser *et al*., 2011).

Evolution of SRM

The strategic decision a firm makes is either to manufacture "in-house" (vertical integration) or procure from external suppliers through outsourcing based on various considerations such as risk evaluation, economic policies and achievement of competitive advantage (Sislian & Salir, 2000; Krause, 1999). However, outsourcing needs to be judiciously utilized (Alaez-Aller & Garcia, 2010) and has been a major catalyst for significant changes to be made in the functioning of the procurement department of manufacturers (Corswant & Fredrikkson, 2002).This is evident from the fact that the key in implementation of effective SCM is to align manufacturing and business goals of the firm (Das & Narasimhan, 2000) incorporating collaborative processes based on trust and information sharing (Hoyt & Huq, 2000) wherein the "purchasing function, with its boundary – spanning activities, is a crucial link between sources of supply and the organisation" (Wisner & Keah, 2000). In the last two decades, SCM practices have undergone a radical change, in that, suppliers are valued partners and SCM is now focused on "leveraging the skills, expertise and capabilities of the firms who comprise this competitive network" and cooperation between supply chain entities has become an established norm with some of the earliest implementation having been in the automotive industry (Spekman, Kamauff & Myhr, 1998). In practical terms, Supplier Relationship Management (SRM) "provides the interface to suppliers for procurement, transaction exchange as well as collaborative practices" (Simchi-Levi, Kaminsky, Simchi-Levi & Shankar, 2008). The trend in Indian automotive industry is to significantly increase the involvement of major suppliers in nearly all aspects of the vehicle assembly process including design and development (Moser *et al*., 2011) which in turn enhances the responsibility of the suppliers and motivates them to upgrade their technical expertise and facilities (Avittathur & Swamidass, 2007) and leads to VAs such as Maruti Suzuki and Tata Motors to practice and enhance supplier side integration with reduced number of suppliers as well as creating separate sub-chains each catering to a subsystem such as electrical, body frame engine, transmission etc. (Buliya, 2013). Interaction with Indian

automotive component manufacturers reveal that a large number of them are exporting to global VAs including Mercedes-Benz, Audi and others, requiring stringent quality and delivery schedules that make it imperative for the suppliers to adopt global supply chain best practices.

Implementation of SRM in Automotive Supply Chains

The automotive industry is said to have undergone three major changes, commencing with Ford's mass production system, Toyota's lean production (Toyota Production System) (Alaez-Aller & Garcia, 2010) and since the 1990's, a move towards a "relational model" between VAs and their suppliers (Binder, Gust & Clegg, 2008). The effective system of supplier relationship development in the Japanese automotive industry (keiretsu) (Iyer, Seshadri & Vasher, 2009) of the 1970s and 1980s was emulated by US VAs in the late 1980s and 1990s (Dyer, 1996) and later by European automakers (Moinar, Humphreys & McAleer, 1998; Womack *et al*., 1990).

Strategic partnerships call for suppliers to create increased value addition to assemblies and components so that the manufacturer is able to ensure differentiation in its final product (Dyer, Cho & Chu, 1998), necessitating closer collaboration at the functional level between manufacturers and suppliers (Carr & Pearson,1999). From a supply relationship management perspective, suppliers may be grouped together as a network comprising immediate as well as indirect suppliers, in a tiered structure (Choi & Krause, 2006). This segmentation of suppliers is based on various factors such as types of suppliers, logistics plan, form of relationship adopted (Svensson, 2004), product and market characteristics (Bensaou,1999) and leads to various different types of VA- supplier relationships.

SRM in the automotive industry has added complexities due to the typically large number of suppliers involved in manufacturing products with different level of technologies and criticality (Choi & Hong, 2002) and therefore perceived risk of opportunistic behaviour, legacy behavior (Mudambi & Helper ,1998; Spekman & Carraway, 2006) and dependence on fewer suppliers (Spekman *et al*., 1998). Although Toyota's much acclaimed supplier relationship practices are considered to be an industry benchmark, there are also contextual factors such as cultural and economic foundations which moderate and impact the drivers of such BSR (Zorpoli & Caputo, 2002) and thus these practices cannot be supplanted in other economies without due consideration (Choi & Krause, 2006). Therefore a study in the Indian context should identify only those factors and determinants that are specifically relevant rather than a generic consideration of attributes from the global automobile industry.

Determinants of VA-Supplier Relationship

Although BSR has been studied and evaluated empirically mainly from a marketing perspective, the dimensions of supplier relationships in the manufacturing and automotive sectors, specially in the Indian context have yet to be adequately explored. It is evident from literature on the subject that prevailing economic system and cultural aspects, among other factors, play a major role in method and level of implementation of strategic sourcing or supplier development (Duffy, 2008; Gadde & Snehota, 2000). During interviews with practitioners and consultants associated with the Indian automotive industry, it was ascertained that although cost remains a major concern, other factors such as dependence on suppliers, specific technologies involved, customised requirements and ability of major suppliers to implement modern management practices and technological upgrades, were some of the more signification considerations in selecting major (tier – 1) suppliers. Hence due to this popular trend, cost as a factor, was not included in our study with focus on identifying the extent and antecedents of collaboration between VAs and their main suppliers. The variance in implementation of suppler relationship is in the areas of strategic imperatives, SMO, supplier development practices and also measures of performance and competitive advantage. Understanding and analysing any BSR involves studying it in a dyadic context considering the views of both buyers and suppliers (Christopher & Juttner, 2000) and this is the basis of our examination.

Strategic Imperatives

Incorporating a strategic dimension in the procurement function depends on value addition to the products by suppliers as also market complexity, unpredictable demand, technological changes, logistics costs and outsourcing (McCutcheon & Stewart, 2000; Corswant & Fredrikkson, 2002). The business environment (economy, Government policies, firm strategy, technology of product etc.) plays an important role in shaping the VA-supplier partnership (Landeros, Reck & Plank, 1995). This impacts the functioning and outlook of the global automotive industry and is also directly linked to a firm adopting relationship practices with their supply chains partners (Fink, Edelman & Hatten, 2007), thus enabling

suppliers to play an important role in performance of the global automotive sector (Moser *et al*., 2011) as a whole. The depth of VA-supplier relationship also depends on product characteristics such as demand, level of customisation, number of sources of supply, engineering effort and expertise required in its manufacture including investments in technology and machinery (McCutcheon & Stewart, 2000; Carr & Pearson, 1999).

Uniquely, in the automotive industry, the supply chain is managed by the VA due to various factors – being fewer in number, size, investments made in suppliers (Storey, Emberon, Godsell & Harrison, 2006) and this results in "interdependence asymmetry" (Caniels & Gelderman, 2007) indicative of the alignment of dependence in any partnership between VAs and their suppliers (Duffy, 2008). In the extreme, an "oligopolistic" buyer structure may result due to imbalance in power, tilted strongly in favour of the VAs as also intense competition among suppliers (Benton & Maloni, 2005) or even lead to exploitation by the latter (Caniels & Gelderman, 2007). Therefore, it is widely understood that the 'power' exerted should be used by the VAs to nurture the relationship rather than build a coercive situation (Benton & Maloni, 2005; Duffy, 2008) and thus, in collaborative relationships, interdependence is becoming the norm to preclude any adverse fallouts on either partner or the supply chain as a whole (Spekman *et al*., 1998). The issue for practitioners, then, arises is for both partners to periodically assess the relationship from the view point of exposure to risk based on power balance and that in contemporary collaborations, it is more logical to study *dependence* from the perspective of each of the partners.

Supplier Management Orientation

Supplier Management Orientation (SMO) may be described as "management efforts or philosophy necessary for creating an operating environment where the buyer and supplier interact in a coordinated fashion" (Shin, Collier & Wilson, 2000). In many studies, SMO and Supplier Development Practices (SDP) have been considered to have common determinants, however, in our study, SMO and SDP have been studied as separate entities.

Management outlook in retaining traditional adversarial practices in the procurement function is a major barrier in implementing collaborative practices between buyers and suppliers (Spekman & Carraway, 2006) and hence top management commitment is an essential criteria in adopting supplier relationship practices (Ellram, 1995). A long term orientation on the part of managers is a basic expectation of both VA and suppliers desirous of establishing a relationship and supplier relationships are successful mainly due to respective managements taking a long term strategic perspective (Kamath & Liker,1994) although this may be focused only on major suppliers and not generic in nature (Monczka, Trent & Callahan, 1993). In Indian automotive industry, with globalisation and SCM becoming widespread among the auto component manufacturers, there has been considerable orientation of management towards supplier relationship as an important part of overall strategy but this aspect has been studied in a limited manner (Vijayaraghavan & Raju, 2008). It is also understood that the management outlook in adopting SMO would have to be followed up by implementation of specific initiatives.

Traditionally, firms resorted to multiple suppliers mainly for encouraging competition and reduce supplier dependency (Shin *et al*., 2000), lowering transaction costs (Choi & Krause, 2006) and wasted efforts and reduce delay in the procurement process (Kamath & Liker, 1994). However, contemporary supplier relationship practices, involves firms to have fewer suppliers in order to effectively leverage their tangible and intangible investments made in developing such relationships (Monczka *et al*., 1993).A study (Pressey & Tzokas, 2007) on SMO brought out that it was the larger firms that adopted high levels of SMO as compared to smaller ones, the latter being in the SME category. Therefore it is surmised that it would be the VAs major suppliers only which would be the focus of a VAs supplier relationship efforts. In practice, this supplier rationalisation has resulted in disadvantages for SMEs which comprise majority of auto component manufactures in India (Adobor & McMullen, 2007). These shortcomings include exclusion of some competent manufacturers, precluding MSMEs from competing as well as being pressurized by VAs to adopt management practices like 'Just in Time' (JIT), use of e-procurement and higher quality standards. Interviews conducted with practitioners, from VAs and suppliers, also indicated that in the Indian context, tendering process and procurement procedures are, in many cases, lengthy and require simplification.

Supplier Development

Supplier development has been defined as "any effort of a buying firm, with a supplier, to increase its performance and/or capabilities and meet the buying firm's short and/or long-term supply needs" (Krause, 1997). Supplier development is a macro term which broadly covers

numerous activities connected with measures by VAs to improve the performance, skill and technological level of their selected suppliers (Krause, Handfield & Scannel, 1998). Applying supplier development practices in a graded and selective manner ensures that scarce resources of a manufacturer are optimally utilised, cost-effective and undertaken with a long-term perspective (Krause, 1997), applicable only to a few major suppliers. Supplier development practices include formalised evaluation process, certification program, incentives such as larger volume orders, site visits to each theirs' facilities, recognition of supplier's achievements and rewards, training and education of supplier's personnel as also direct investment. Indicators for supplier development practices have been established widely in literature (Krause, 1997) (Wagner, 2006; Kannan & Tan, 2010; Modi & Mabert, 2007).

One of the options to mitigate the shortcomings due to inadequate level of supplier relationships is for the manufacturers to directly invest resources to enhance the technological capabilities and performance of their suppliers (Krause,1997; Heide & George,1990) which along with other indirect efforts such as training and advice to suppliers (Krause,1999), has been referred to as asset specificity and would be the norm in a long-term partnership (Ganesan, 1994). It has been empirically examined (Dyer, 1997) that a high level of asset specificity does not necessarily translate into higher transaction costs and therefore, VAs and their suppliers can actually reap benefits and this also builds confidence among them. However asset specificity carries with it the risk of loss of investment when the partnership is terminated and needs a balanced decision (Farker & Stannack, 2000).

Establishing formalized supplier development practices is a fundamental step in the decision process to establish strategic supplier relationships which involves analyzing strengths and weaknesses of a potential supplier and their selection through a formalised, pragmatic supplier evaluation system (Pressey & Tzokas, 2007) among other such initiatives. To obviate the negative effects of "opportunism" and associated risks (Stump & Heide, 1996), firms resort to stringent selection norms, offering incentives and asset–specificity and continuous monitoring of suppliers (quality, delivery etc.). Even then, supplier selection is a challenge in a rapidly changing environment and in the face of product complexity as exists in automotive supply chains (Jamil, Besar & Sim, 2013). One of Toyota's core principles (of the 'Toyota Way') (Liker, 2004) is their system of, initially, posing challenges for suppliers to achieve and later assisting them to enhance their technological levels which results in an "extended learning enterprise" and has thus been practiced in other automotive majors. Incentives such as promise of future business and "knowledge transfer" to suppliers are inter-linked, in that a manufacturer will make efforts in providing supplier training and technology transfer, while a supplier will be motivated to create an environment of commitment and openness, to facilitate this process (Modi & Mabert, 2007).

Supplier involvement in product design and development and in improvement of production processes are widely practiced in the manufacturing industry (Vonderembse & Tracey,1999; Moser *et al*., 2011) and helps in achieving quality, reducing development time, cost – effectiveness in utilisation of resources, higher level of buyer performance (Shin *et al*.,2000) as well as improved inventory management in the supply chain such as JIT deliveries (Corswant & Fredriksson, 2002; Peterson, Handfield & Ragatz, 2005; Ragatz, Handfield & Peterson, 2002). Toyota, for example, include their suppliers both in design of components as well as in developing concepts of new variants (Shin *et al*., 2000; Dyer & Ouchi, 1993). Many Indian auto component manufacturers, even in the SME sector, are developing in-house research and development facilities and are therefore increasingly being involved by the VAs in the development process of assemblies and subassemblies. The main antecedents of supplier involvement in automobile design relate to characteristics of assemblies (complexity, innovation required), supplier technological capabilities, existing partnerships, information sharing (Liker, Kamath & Wasti, 1998) and an early involvement of suppliers in the process has been recommended(Peterson *et al*., 2005). Even so, there have been some reservations expressed in this regard such as the challenge in sharing proprietary information and reluctance in shedding responsibility in new vehicle design and development (Liker, 2004)

VA-Supplier Partnership

'Cost leadership' in no longer the only objective of the buying function and other drivers of success include developing close, long-term partnerships with suppliers and this has made the idea of supplier relationships more acceptable to the partners specially from a SCM perspective (Spekman *et al*., 1998). The power and advantage in maintaining close supplier relationships can be seen in the manner in which Toyota's other suppliers rallied around and organized themselves to supply a brake component at short notice when the manufacturing plant of the sole supplier of this component was completely destroyed in a fire (Liker, 2004).VA–first-tier supplier

relationship in the automotive industry is unique as regards dependence and level of collaboration (Ghijsen, Samijn & Saskia, 2010) and has been seen to be an imperative in the competitive automotive industry where development of a large number of variants in the shortest time is a key to profitability and sales volumes.

Trust may be variously defined as "the belief that the other party will act in the firm's best interest in circumstances where that other party could take advantage or act opportunistically to gain at the firm's expense" (McCutcheon & Stuart, 2000) and similarly by others (Sako, 1992; Dyer & Chu, 2000). Commitment is the "willingness to do more than is formally expected" (Mudambi & Helper, 1998) and has been alternately described "as a supplier's desire to maintain and to strengthen the valued relationship and represents a long-term orientation to the relationship" (Ghijsen *et al*., 2010). In this study, trust and commitment are described together because trust is a precursor of commitment and directly influences "relationship commitment" (Morgan & Hunt, 1994) and is a determinant of long-term collaboration (Ghijsen *et al*., 2010). *Trust* between supply chain partners in the manufacturing industry has been operationalised as dependability, confidentiality of information and consistency in dealings (Khan & Pillania, 2008). The significance of trustin VA-supplier relationships in US, Japan, and Korea has indicated that this is an important factor for achieving competitive advantage as trust between partners reduces transaction costs, increases levels of asset specificity and enhances information sharing (Dyer & Chu, 2000; Spekman *et al*., 1998) and inspires confidence of suppliers in the VAs specially during times of economic downturn and uncertainty (Das & Kasturi, 2004).

Information sharing, attitude of managers involved, and social climate are three important management essentials in evolving a collaborative supplier relationship (Bensaou,1999; Monczka *et al*., 1993) and have had an empirical basis in US (Mudambi & Helper, 1998; Bensaou & Venkatraman, 1995) and Japanese (Dyer, 1997) automotive industries as well as in emerging markets such as South Africa (Naude & Badenhorst-Weiss, 2012). Manufacturers, besides developing managerial governance mechanism to faster collaboration, would need to work at the dyadic level to improve the level of communications with suppliers (Paulraj, Lado & Chen, 2008) and this is particularly relevant in India where a majority of auto component manufacturers are in the SME sector. Communication has been considered to have four major ingredients (Modi & Mabert, 2007) – "frequency, direction, content, and modality" and effective communication of buyer's practices, specifications etc. are an important aspect in developing a relationship and finds considerable support in literature (Mudambi & Helper, 1998; Monczka *et al*., 1998). Collaboration is a result of open frequent communication involving a clear understanding of issues, roles and expectations facilitated by increased interaction, on-site visits ata personal and organisational level (Carr & Kaynak, 2007; Paulraj *et al*., 2008) and leveraging IT resources.

The manufacturing industry in India, as elsewhere, has had elements of conflict in the buyer-supplier relationship and therefore the aspect of "disengagement" or dissolution of a relationship is usually pre-determined through established norms to avoid any acrimonious situation (Dwyer *et al*.,1987), however, during the course of collaboration, problem areas are natural occurrences and these require a robust conflict resolution mechanism (Landeros *et al*., 1995) which ensures corrective action to be taken unilaterally or bilaterally at an operational and managerial level. In conflict management, 'problem solving' and 'compromise' are the most often used methods (Kozan, Wasti & Kuman, 2006) wherein feedback between partners is an essential ingredient in establishing an effective long –term partnership (Prahinski & Benton, 2004). It has been observed that while 'problem solving' was more utilized by buyers, suppliers resorted to 'accommodation' and 'avoidance' to mitigate conflict situations (Kozan *et al*., 2006). Among the studies on dimensions of VA-supplier partnerships there are hardly any which highlight the issue of conflict management and our literature survey revealed only one such study in the Turkish automotive industry (Kozan *et al*., 2006) based on both a cultural and supply management context.

Research on determinants of BSR, from both buyer and supplier perspectives, has identified increased communications, information sharing, expectations of a long-term relationship and willingness for conflict resolution through negotiations, as common issues for furthering a collaborative relationship with shared strategy and objectives (Spekman & Carraway, 2006). Collaboration between supply chain partners may be studied in three dimensions – information sharing (Womack *et al*., 1990), decision-synchronisation and "incentive alignment" (Simatupeng & Sridharan, 2005). The "decision synchronisation" includes joint planning on issues such as pricing, demand forecasts, product variety and promotions (Simatupeng & Sridharan, 2005) at all levels of management by both VAs and suppliers. The "incentive alignment" dimension can be scaled to include reduction in inventory costs, management on fluctuations in orders and handling of product defects.

Mutual Benefits

In any supplier relationship, the benefits accruing to both manufacturers and supplier must be of equal proportion to ensure sustainability of the relationship (Gadde & Snehota, 2000). In a relational exchange, while lower prices, decrease in administrative costs and improvement in delivery and quality are the major objectives, it is also incumbent on the manufacturer to ensure that their suppliers are benefitted in this relationship by way of increased share of purchases and commitment in future business dealings (Fink, Edelman & Hatten, 2007; Krause & Ellram, 1997). VA-supplier relationships are not static and develop over time based on buyers terms and the perceived or actual expectations and benefits sought by suppliers and reciprocity of benefits (Stuart, 1997). However, firms have realised that suppliers play an important role in quality product innovation and development and supplier satisfaction is an imperative to achieve their continued cooperation (Meena & Sarmah,2012). In the Indian industrial context, supplier satisfaction depends on "purchase policy, payment policy, coordination policy and corporate image" of the buying firm (Meena & Sarmah, 2012). A 'matched-pair' study into salient aspects of manufactures-supplier relationships (Stuart, 1997) indicated that longevity and strengthening of a relationship leads to mutual satisfaction and a supplier's perception of a buyer's cooperative 'attitude and behaviour' depends on the latter's ethical practices, using well defined procurement policies and joint problem solving. In the intensely competitive Indian automotive industry, issues like uniqueness of vehicle features and "contemporariness" of products (meeting environmental norms, reliability etc.) are significant performance dimensions (Vijayraghavan & Raju, 2008).

Competitive advantage is sought to be attained by firms by either developing capabilities within the firms or by outsourcing these capabilities through strategic alliances and long-term contracts (Das & Teng, 2000). AVA-supplier collaboration is likely to be "sustainable" if efforts are made to achieve competitive advantage for both partners as a result of this relationship (Mudambi & Helper, 1998) such as product innovation (Monczka *et al*., 1993) by suppliers as well as the latter's strategic commitment and willingness to work with a VA (Kannan & Tan, 2003). Performance variable for both buyers and suppliers are largely similar in nature and context (country) sensitive (Vijayraghavan & Raju, 2008). Performance of a firm, both VAs and their suppliers, can be either financial or non-financial (operational) with operational measures comprising main factors to measure competitiveness, such as price, demand flexibility, quality and delivery norms, and "internal indicators" such as defects, scheduling and cost (Prahinski & Benton, 2004; Iyer *et al*., 2009). Supplier performance is usually considered to be based on increased share of customer's total purchases and growth potential of the business (Fink *et al*., 2007). A recent trend is to focus on "dual accountability" of both manufacturers and suppliers in analyzing success and failure of such alliances (Slobodow, Abdulla & Baburchak, 2008) and recent studies in the Indian automotive sector (Mishra & Sahay, 2010; Singh, Suresh & Deshmukh, 2004; Nayak & Ray, 2010; Joshi, Nepal, Rathore & Sharma, 2012; Saad & Patel, 2006) have dwelt on analysis of some of these performance indicators.

Research Methodology

This paper is based on a study that is descriptive and exploratory in nature. The methodology followed a two-step process, initially conducting an in depth literature survey mainly based on global and Indian manufacturing industry with special emphasis on the automotive sector. The research issue was, firstly, to understand the extent of collaborative practices in the Indian automotive supply chain specifically the VA-supplier interface. Further, the objective was to collate and analyse antecedents of various dimensions in supplier relationship management and, to some extent, indicators of these constructs. The next stage involved examining these dimensions, constructs and indicators from the point of view of its applicability, actual extent of practice, as also the challenges faced, in adopting supplier relationship management in the Indian automotive industry. This was achieved mainly through verbal, semi-structured, personal, as also a few telephonic interviews of executives, middle and junior level managers actually involved in the supply chain and procurement function of VAs and first and second tier auto component and assembly/sub assembly manufacturers (suppliers) concentrated in the Gurgaon automotive cluster of the National Capital Region (NCR) in India. The selection of companies and the respondents were based on judgmental sampling and taking a dyadic perspective, the views of both VAs and suppliers were considered in arriving at our findings. These findings were then discussed with a few experts from reputed consulting firms involved in studying the Indian automotive industry as well as those from various industry forums. This was done to further substantiate our findings, from the aspect of future trends and challenges of this sector and to understand the linkages between the constructs. Based on this examination, a holistic framework was developed for deeper study of SRM in the Indian automotive industry.

Developing the Framework

Concept

A 'partnership model' suggested by Lambert *et al*. (1996) comprised "drivers", "facilitators", and "components", leading to "outcomes" (performance).While "drivers" are strategic in nature and act as motivators for embarking on a partnership, "facilitators" are the "supportive corporate environment" such as a positive management outlook and "components" are factors which are the means by which a partnership is actually operationalised such as trust , commitment, asset specificity, communications and joint planning (Lambert *et al*., 1996). Similar frameworks based on these aspects have been suggested by Duffy and Fearne (2004) among others and in general, these studies have adopted a "systems thinking" and a "world view perspective" (Spekman *et al*., 1998). It has been noted that supplier relationship development should be carried out at three levels-dyadic, chain and network, since each had its own unique determinants (Moser *et al*., 2011). Our proposed framework is motivated by these concepts in that it is based on the imperative that in order to study the antecedents, moderators and outcomes of a VA-supplier relationship, booth, strategic and an operation view be examined. This calls for a clear understanding of motivational factors ie. what drives a VA to move towards strategic sourcing norms, an orientation towards developing supplier relationships and practices for ensuring supplier development leading to mutual benefits for the partners. Research for determining a holistic approach in supplier relationship strategies in the Indian automobile industry is scanty and an in-depth literature survey of research conducted in various aspects of supplier networks and relationships, highlighted that there is a need for studying supplier relationships in an integrated, holistic manner taking an "enterprise relationship management perspective" (Humphries & Mena, 2012). Therefore, a need is felt to develop a comprehensive framework, a continuum, taking into consideration, all the above mentioned aspects to carry out a deeper examination into the multidimensional aspects of the VA-supplier interface. This is depicted in Figure 1 which is based on various characteristics and antecedents of VA-supplier partnerships and outlines the broad method for our study.

We now proceed to develop the integrated framework, comprising some of the constructs discussed in this paper, in a stage wise manner, supporting each stage or linkage of the continuum by references to relevant studies, specially from the automotive industry and also based on structured and semi-structured interviews with managers involved in purchasing and procurement function in the Indian VAs and auto component manufacturers.

Explanation of Model

The concept for this analysis of VA-supplier interface has been further elaborated in this Section to explain the development of the framework for further study. This framework has been developed on the basis of antecedents (constructs), as highlighted in the literature survey as well as on the linkages between these constructs that have been adequately supported through empirical studies in the automotive industry.

Our proposed framework is based on the basic concept of integration of supply chain entities which divides the process into three "components" – strategic, process and operational (Handfield & Nichols, 1999). This gives rise to a causal formulation wherein strategic drivers of supplier relationship impact the level of implementation i.e. supplier management, supplier orientation and development practices as process "components" and collaborative practices. The impact drivers or strategic imperatives of a firm, for VAs in India to adopt supplier relationships with a SMO as part of their competitive strategy are – the existing business environment, product characteristics and dependence on partners (Terpend, Tejler, Krause & Handfield, 2008) and this strategic perspective of a firm's procurement function has been found to have a definite positive effect on performance (Carr & Pearson, 1999; Krause, 1997). This has also led to an orientation of management to adopt supplier development practices through collaboration (Johnston & Kristal, 2008). Also it has been widely noted that VAs adopt supplier development initiatives such asasset specificity, to include direct and indirect support to major suppliers, as well as formalised practices such as supplier selection system, incentives, recognition and training. The significant issue of supplier involvement in product development which is gaining considerable support in the Indian automotive industry is an important component of the supplier development initiative. However before formulating such practices (Prahinski & Benton, 2004) there is a requirement to study the practical realisation of this supposition (Wagner, 2006) specially in the level of competitive advantage accruing to auto component manufacturers.

We have seen that there is considerable support that a SMO leads to a long term view taken by VAs in establishing partnerships with major suppliers. It was further studied

that a VA's involvement in the functioning of their major suppliers, in most cases, leads to a robust and long term VA-supplier relationship based on trust, communication, conflict resolution mechanism resulting in a higher level of collaborative practices at the organisational and personal level. An effective BSR has been established as a strong moderator between supplier development practices and enhanced performance of both VAs and suppliers (Shin *et al*., 2000) and also supply chain competitiveness both in developed and emerging economies. Finally, it is surmised that VA-supplier partnership would enable both partners to realise mutual benefits such as supplier satisfaction due to perception of an increase in business, and also accrue competitive advantage to both partners. Also there is a case to ascertain the extent to which supplier development practices directly contribute to a partnership as well as competitive advantage for VAs and their major suppliers. These constructs and their linkages which may be used as a framework for an analysis of the VA-supplier interface are depicted in Figure 2.

Research Direction

Adopting supplier relationship practices without taking into consideration the operating environment

Figure 1: VA – Supplier Interface: A Continuum Approach

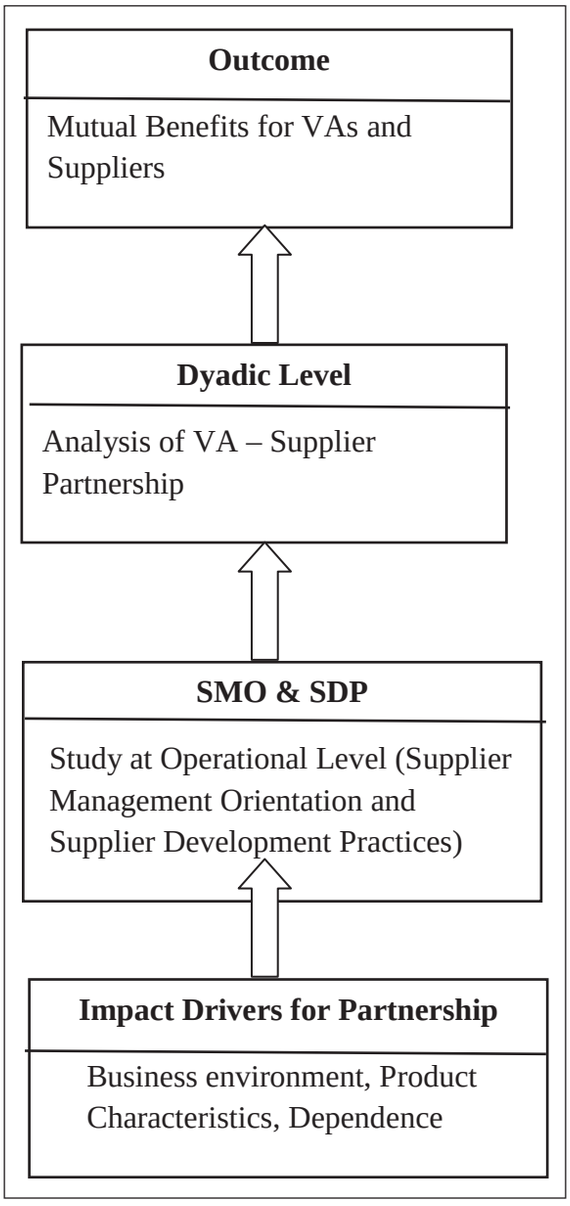
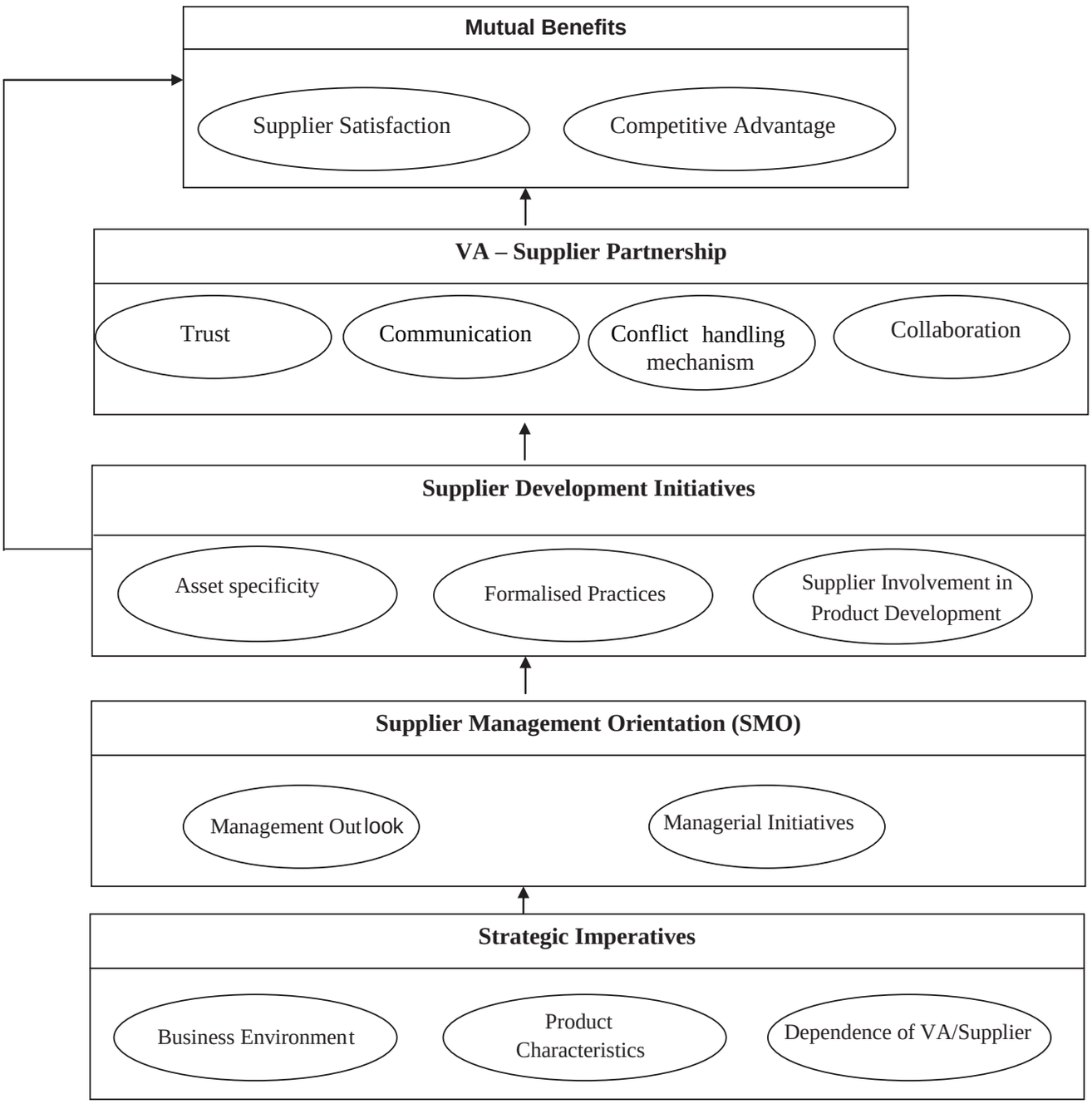


Figure 2: Framework for Analysis of VA – Supplier Interface



and contextual factors may be counter-productive. For example, although most VAs in US and Europe followed the supplier relationship paradigm, first established by Japanese automakers such as Toyota and Nissan, often, their expectations of performance enhancement fall short (Kamath & Liker, 1994). In the case of developing countries like India, BSR in the manufacturing sector have their own peculiarities. A study (Mohanty & Gahan, 2012) has brought out the fact that a majority of the suppliers in the manufacturing sector are MSMEs who, by their very nature of size and structure need much more understanding and even mentoring by the major manufacturers (buyers) than is prevalent in developed economies. Only a few studies (Johnston & Kristal, 2008) have considered perspectives of both buyers and suppliers in collaborative relationships in the manufacturing industry. Therefore, establishing determinants and indicators in a supplier relationship framework necessitates that a larger weightage be given

to the suppliers' perspective since this would reveal "contrasting views" and "time-dependent trends" based on cross-sectional data (Stuart, 1997) leading in turn,to pragmatic recommendations in enhancing strategic supplier relationships.

In developing the framework, substantial amount of literature including the theoretical basis of BSR have been studied. The identified constructs, indicators and their linkages have then been examined from the practical viewpoint i.e. actual application of supplier relationship management in the Indian automotive supply chain. However, there is a requirement for a wider scan of the sector involving other automotive clusters since our study concentrated on VAs and auto component manufacturers in the NCR in India. Therefore, it is suggested that a pilot survey covering all automotive clusters be carried out to determine the antecedents of a VA– supplier partnership and the resulting benefits. This wider coverage would neutralise any localised effects on the study such as cultural practices. Also, it is highlighted that although our study, exploratory in nature, relied on literature in a global and Indian context as also experience of practitioners and consultants it is possible that some of the issues highlight may be anecdotal in nature requiring a more rigorous empirical analysis. A case study, involving a VA and its major suppliers, to delve into the antecedents, challenges and mutual benefits at a dyadic level would add further value to such a study. One significant limitation in conducting this study arose from the fact that very few managers at the operational level really understood the larger impact, dimensions and advantages that accrue from a strategic VA – supplier partnership. This may be due to the fact that the Indian automotive industry is still in the growth phase wherein global supply chain procurement related practices are yet to be fully absorbed.

Conclusion

This exploratory study has sought to present a holistic framework for future examination of issues that need to be considered by both VAs and their major suppliers in embarking upon an effective supplier relationship program and seeks to bridge the gap between theoretical perspectives and practical implementation of SRM in the Indian automotive industry. It is envisaged that this study would provide a basis for understanding the practical issues and challenges in developing supplier relationships, not only in India but also in other such emerging markets, with a view to make recommendations for implementation and enhancement of SRM in automotive supply chains.

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