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THREE PERSPECTIVES ON BUYER-SUPPLIER RELATIONSHIPS: A Relationship Assessment Model for Investigating Buyer-Supplier Relationships in Inter-organisational, Inter-functional and Intra-functional Perspectives

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Tero Seppälä

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1 INTRODUCTION

1.1 Buyer-seller relationship research

In the early 20th century the Ford Motor Company was the most vertically integrated producer of automobiles in the world. Its fully owned operations ranged from excavation mines and ore-smelting to assembly of cars. Since these early years Ford has increasingly abandoned its vertically integrated manufacturing focused strategy and is now concentrating on its core competencies[1] that lie in product design, including the services that accompany the product. (Cokins 2000, 14)

Numerous other companies have followed and continue following Ford's path and focus on their core competencies while outsourcing non-core activities. This can be argue to lead to a situation where a company's success is to a great extent dependent on how well it is able to buy and manage its supplier base. While the trend for outsourcing continues and more complex products are purchased from suppliers, the companies are in fact buying other firms' competencies rather than just products. This is likely to increase the importance of well-functioning relationships between buyers and sellers, and as purchased products become closely associated with core competencies, the scope of the supply side operations will extend beyond buyers and sellers to involve, R&D-personnel, for example. (Trent – Monczka 1998, 4–5) This will imply that buying and selling activities will become more associated with relationship management and involve more than just purchasing and marketing departments.

However, current research literature on developed relational exchange in industrial markets, such as partnership, has primarily focused on inter-organisational relationships, whether in a purely dyadic or a network configuration. Yet, a number of studies – e.g., Ellram & Pearson (1993), Trent & Monczka (1994), Jennings & Plank (1995) and Lambert et al. (1996) – suggest that business partners in developed buying and inter-organisational relationships are active on all levels of the organisation and across both functions and units. They "speak the same language", are committed to the relationship and jointly plan their activities both internally in their respective organisations, functions and units, and externally with their partners. Hutt (1995, 351) also argues that, as firms adopt leaner and flatter structures and as

[1] Core competencies are defined by Hamel & Prahalad (1994, 199) as "a bundle of skills and technologies that enable a company to provide a particular benefit to customers".

traditional sources of hierarchical power erode, cross-unit relationships are becoming crucial to the successful execution of strategy.

Similar thinking has also been expressed in the area of relationship marketing. Grönroos (1994, 20) argued that a firm applying a relationship marketing strategy has a broad customer interface, even involving a large number of "part-time marketers" in several different functions. Therefore, successful implementation of a relationship marketing strategy requires that all parts of the firm that are involved in taking care of customers collaborate and support each other in order to provide them with good total perceived quality and make them satisfied (ibid., 20). In other words, the internal interfaces between different functional areas involved in marketing are of strategic importance to success (ibid.). These findings from relationship marketing are also applicable beyond the discipline of marketing, as both buyers and suppliers in industrial markets (or business-to-business markets) are often active participants in the market place. Håkansson (1982, 1) even challenges the separation of industrial marketing and industrial purchasing, and argues that marketing and purchasing are very similar[2] activities in business-to-business transactions.

All in all, developed and successful buyer-supplier partnerships (inter-organisational relationships) would appear to necessitate very high consensus within the participating organisations (inter-functional relationships) and in the functions involved (intra-functional relationships). Ballou et al. (2000, 10) identified these three dimensions and recognised the possible inter-linkages between the perspectives that were originally in the area of supply chain management (see Figure 1[3]).

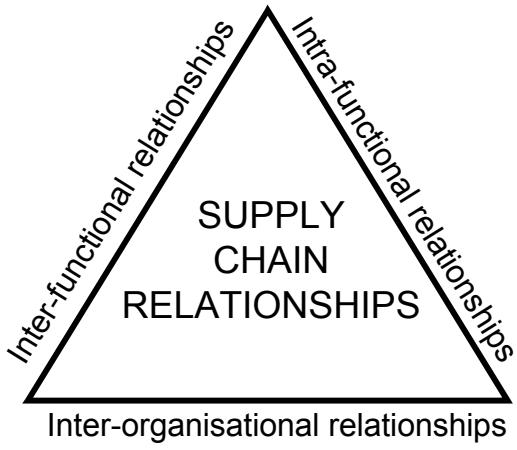


Figure 1. Three supply chain relationship dimensions (adapted from Ballou et al. 2000, 10)

[2] For a contrasting view on the similarities between buying and selling (marketing), see Heide & John (1990, 34).

[3] The original Ballou et al. (2000) presentation describes different perspectives of co-ordination rather than relationships.

In other words, from a methodological standpoint, it would appear that developed relationship research should move beyond inter-organisational dyadic relationships and also take into consideration the inter-functional and intra-functional perspectives. In this study the concept perspective refers to a dimension and a specific point of view to a phenomenon under study.

The purpose of this study is to develop a relationship assessment model (later also referred to as RAM) and methodology for studying buyer-supplier relationships[4] in inter-organisational, inter-functional and intra-functional contexts. First, some popular theoretical approaches to buyer-supplier relationship research are reviewed in the light of this study. Recent empirical investigations are then analysed and assessed from the perspectives of the inter-organisational, inter-functional and intra-functional relationship.

The work started in Seppälä (2001) continues here with the iterative development of the relationship assessment model and its application in a wider relationship context. The model is built on a number of success factors, preconditions and criteria for a partnership relationship, based on information collected from recent journals, with a view to establishing a general set of criteria for a developed buyer-supplier relationship. This relationship assessment model has five relationship dimensions: trust, communication, co-operation, risk/reward sharing, and commitment.

The relationship assessment model is then tested by applying it to investigate buyer-supplier relationships in an inter-organisational, inter-functional and intra-functional context in a case company setting. Access to the case company and 10 of its supplier relationships was originally granted in a multi-informant environment (see Seppälä 2001). In addition, inter-functional relationships are investigated between Manufacturing (Procurement), Research & Development and Service (Purchasing). Intra-functional relationships are considered in the context of Manufacturing (Procurement).

Following on from Seppälä (2001), four buyer-supplier relationships out of the original ten were selected for further investigation, with two dyadic relationships representing “high-performing” and two “low-performing” relationships. The empirical investigation was conducted using multiple informants in both the buyer and the supplier organisations.

Some recent studies on buyer-supplier (or buyer-seller) relationships have only considered the buyer’s perspective (see e.g., Kozak & Cohen 1997, Monczka et al. 1998 and Virolainen 1998), and some have focused only on the seller’s side (e.g., Heide & John 1990 and Sharma et al. 1999). Moreover,

[4] In what follows, the terms supply chain relationship, inter-organisational relationship and buyer-supplier relationship are used interchangeably.

most studies that include both buyer and supplier perspectives rely on using single or very few informants within each organisation (see e.g., Akacum & Dale 1995, Brown et al. 1994, Stuart & McCutcheon 1995 and Dyer et al. 1998). In other words, none of the studies mentioned that deal with both buyer and supplier perspectives have penetrated very deeply into the different relationships or into their intra- and inter-functional elements. In fact, "in contrast to the number of empirical studies devoted to buyer-seller relationships, scant attention has been given to the web of cross-unit working relationships" (Hutt 1995, 351). What is more, "literature to date has tended to concentrate on principal purchasing agents or salespeople, but other members of the organisations are likely to be involved in the relationship formation and maintenance. The views of these individuals should also be investigated as a comprehensive model of how partnership management evolves" (Tuten – Urban, 2001, 162). In a recent editorial in the Journal of Business & Industrial Marketing, Johnston (2001, 516–517) called for multiple-informant research on buying centres and buyer-seller dyads with "real data", going beyond the context of 'channels of distribution'.

It remains unclear how any researcher can carry out credible research on relationships only from a one-sided perspective. In reality, relationships often involve multiple representatives from both organisations and from the individual functional areas within them. If only single informants (e.g., only from the other party to the relationship) are involved in a study, it would appear to be very difficult to draw credible conclusions concerning the relationships (Reid – Plank 1999, 120). However, it has to be noted that access to this type of phenomenon is often problematic (see, for example, Spekman (2000, 30)).

This study is also an attempt to respond to some calls for further research in the field of business-to-business buyer–supplier relationships. One such call was made by Weitz & Jap (1995, 310) in the context of marketing and channel relationships. In their view, "It is disappointing that qualitative research [in marketing] has focused primarily on consumer behaviour and not examined [marketing] activities within a firm or the relationships between firms." For (Weitz & Jap 1995, 316), "Numerous academics have called for collecting data from multiple informants to assess organisational constructs and for collecting dyadic data from both participants in the… …relationship." Virolainen (1998, 214) also suggested that his research into buyer–supplier partnerships, which looked at the buyer–supplier dyad only from the buyer's perspective, should be extended to take into account the supplier's perspective as well.

1.2 Developed relational exchange

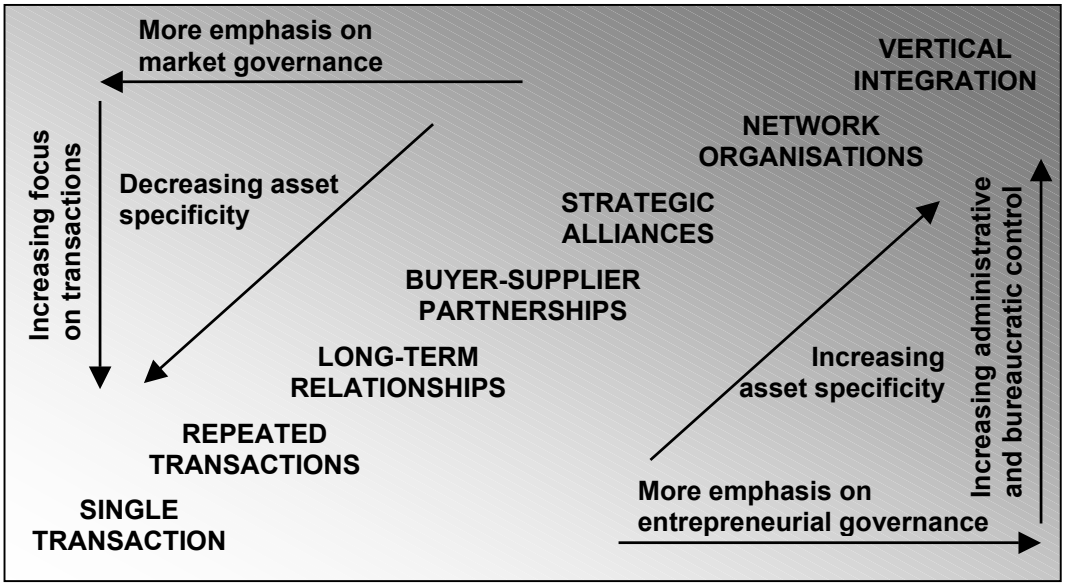
"If firms are to respond to changing competitive business conditions, they must change the way they think about organisations and their structures. Cross-functional and cross-boundary communication, coordination, and alignment have become critical components of this new way of thinking" (Trent – Monczka 1994, 3).

The key decision-making issues in purchasing are perceived more and more as cross-functional activities (Ellram – Pearson 1993, 9). Cross-functional sourcing teams often consist of personnel from at least three functions brought together for purchasing or materials related assignments, including decisions involving supply base management (Trent – Monczka 1994, 4). Jennings & Plank (1995, 414) argued that the procurement decision concerning a complex product is likely to hinge on the congruence of a number of members with a customer's organisation rather than on the sole judgement of the purchasing agent. High-risk purchases in particular are often made in a team-based, formal, process-driven manner, which is rooted in cross-functional co-operation (Thompson 1998, 700). According to Ellram & Pearson (1993, 9), such team participation should foster improved communication, awareness, and the integration of the purchasing function with other functional groups in the firm.

Collaborative interdepartmental integration involves predominantly informal processes based on trust, mutual respect and information sharing, the joint ownership of decisions, and collective responsibility for outcomes (Kahn 1996, 147). Trent & Monczka (1994, 4) argue that, while the cross-functional team concept is simple in theory, practical implementation is often difficult. Most firms must overcome decades of established business practices and formal functional reporting structures. Yet, the importance of efficient inter-organisational, inter-functional and intra-functional co-ordination and relationships appears to increase as the commodities transacted increase in complexity (see e.g., Grönroos 1990 and Jennings & Plank 1995).

Most transactions take place between companies operating under market conditions. The market itself is a forum in which both buyers and sellers meet and perform transactions in accordance with the supplied and demanded quantities. In some markets the characteristics approach perfect market conditions, in which the "invisible hand" actively allocates resources most efficiently, while in some situations the market forces are present in a limited fashion or not at all. A number of researchers in this field have classified various market-exchange and relationship types from various perspectives (see e.g., Coase 1937, Williamson 1975; 1985, Webster 1992 and Cox 1996). The

relationship-type continuum developed by Webster (1992) is used as a reference throughout this study (see Figure 2).



Adapted from Seppälä (2001,43) , based mostly on Webster (1992)

Figure 2. The relationship-type continuum

In this continuum, movement from the bottom-left to the top-right reduces market force involvement and increases entrepreneurial governance; firms aim to economise the sum of their transaction and production costs (including governance costs) by selecting the appropriate governance mechanism (Williamson 1979, 245). In theoretical terms, the appropriate governance mechanism for a particular commodity transaction are to be found at the margin, where the costs of organising the transaction in a more entrepreneurial form (i.e. the entrepreneur (or manager) has control over the factors of production) equals the cost of organising this same transaction in a more market-governed form (see e.g., Coase 1937).

Webster (1992) formulated a relationship-categorisation scheme, which illustrates the characteristics of different relationship types. This classification describes a number of different relationship types, but it does not seem very fruitful to draw strictly defined borderlines between different relationship types, since no single real-world business relationship ever corresponds fully to a theoretical definition of any specific relationship type. Despite this acknowledged limitation, the following set of key characteristics is believed to offer clarifying lines of demarcation between relationship types (see Table 1).

Table 1. Key characteristics of relationship types

RELATIONSHIP TYPE	KEY VARIABLES				
	Commodity and focal area(s)	**Unit of analysis/ focal point**	**Jointly owned assets**	**Contract[5]**	**Inter-dependence/ mutual commitment**
SINGLE TRANSACTIONS	Non-differentiated (focus on price only)	Transaction (no prior or subsequent transactions)	No	Duration of the transaction	None
REPEATED TRANSACTIONS	Differentiated (focus primarily on price)	Transaction	No	Duration of the transaction	Low
LONG-TERM RELATIONSHIPS	Differentiated (price, quality, technical support, delivery/ service)	Transaction and possibly relationship	No	Long-term (arm's length, perhaps even adversarial), detailed	Medium
BUYER-SUPPLIER PARTNERSHIPS	Highly asset-specific (total cost of ownership)	Relationship Joint goal	Perhaps (e.g. in the Japanese context	Long-term (collaborative), detailed	High "Total" according to Webster (1992)
STRATEGIC ALLIANCES/JOINT VENTURES	Highly asset-specific	Relationship Joint long-term strategic goal	Often	Often temporary, but collaborative	High
NETWORK ORGANISATIONS	A network of different relationships (a range of commodities ranging from non-differentiated to highly asset-specific types)	Network of transactions and relationships Focal company's core competence, competitive advantage of the whole network	Perhaps	Network consisting of a number of contracts	High
VERTICAL INTEGRATION	Highly asset-specific (core competence)	Firm itself Core competence	N/A	N/A	N/A

Based on Webster (1992) (N/A = Not applicable)

Naturally, each characteristic described could be the subject of a never-ending debate on how each of the relationship types should truly be characterised. One problem with Webster's range of [marketing] relationships is the position of the network organisation. By definition, the network organisation is a "confederation" of different organisational forms (Webster 1992, 9), and therefore it does not quite fit into the relationship-type continuum. One could argue (as Cox (1996) does) that the network organisational form (i.e. network sourcing) is subject to less bureaucratic and administrative control than strategic alliances, since the network consists of a range of relationships with interdependent, yet independent organisations. This illustrates a point made by Heide (1994, 82), who argues that governance mechanisms between markets and hierarchies cannot be described comprehensively along a single continuum. For these reasons, the type of network-organisation relationship is excluded from further consideration as an

[5] Here the term contract is not used solely as a legal term. It may be a written agreement but it may also be a verbal "hand-shake" , or even a tacit agreement. In the empirical part of this study the terms contract and agreement refer to written contracts, unless it is specifically stated that it is an informal verbal agreement.

individual relationship type in this study on buyer-supplier relationships. In the following sub-sections each relationship type is described in more detail, with the emphasis on developed buyer-supplier relationships.

1.2.1 Single transactions

A single transaction is a unique event, which has no prior or subsequent transactions associated with it. Each individual transaction is guided by the price mechanism and, in the competitive market place, firms aim to buy at the lowest possible price. They also face transaction costs, i.e. "the cost of using the price mechanism". Such costs are associated with determining the price level and contracting (Webster 1992, 5), for example. Goods exchanged in single transactions are typically non-differentiated, and the focus is on price only.

1.2.2 Repeated transactions

At the market extreme, the single transaction is the dominant relationship type, if one considers this to be a relationship at all. According to Webster (1992), the first true relationship type is the repeated transaction, in which the focus is on the transaction itself as well as on the price of the commodity exchanged. In principle, this relationship lasts only for the duration of the transaction, as there is no continuous involvement between the buyer and the seller. There are no jointly owned assets and the commitment of both the buyer and the supplier to a repeated transaction relationship is low. (Webster 1992) MRO-goods[6] are a typical commodities transacted in multiples, yet without the transactional framework of a solid long-term relationship between the buyer and the seller.

1.2.3 Long-term relationships

The long-term relationship has a longer-term time span than repeated transactions, but it is still heavily dependent on market control. Despite its long duration, it may be adversarial in nature (Webster 1992, 5). This relationship type also involves a moderate level of commitment from both the buyer and the supplier, but there are typically no jointly owned assets or other types of joint ownership involved. Typically industrial buyer–supplier

[6] MRO = Maintenance, Repair and Operations.

relationships have featured this type of relatively long-term – although arm's-length – contractual commitment (Webster 1992, 7; Dyer et al. 1998, 69).

Arm's-length relationships involve minimal information sharing and "operational fusion" between the contracting parties, and very little, if any, relation-specific investment (e.g., equipment and labour) takes place (Dyer et al. 1998, 59–62; Dyer & Singh 1998, 661). In other words, firms engaged in arm's-length relationships try to avoid interdependence. This relationship type corresponds to the "traditional" view of supplier relationships, in which the buyer and the supplier are often pitted against each other in a battle over price (Webster 1992, 7).

In the "new adversarial approach" to supplier management, the suppliers are evaluated, in terms of quality and delivery performance as well as price, but supplier relationships are still managed in an adversarial fashion (Spekman 1988, 76). Dyer et al. (1998) focus partly on the actual length of the contract between the buyer and the supplier, whereas Webster (1992) emphasises the nature of the contract and the atmosphere within this relationship type (i.e. "at arm's length") rather than the actual length of the relationship. As Webster (1992, 7) states, it may very well be that a relationship that has been established for decades has always been adversarial in nature.

According to the traditional view on buyer–supplier relationships, suppliers are only expected to react to customer demands. These short-term, transaction-driven relationships – without any relationship-specific investments – are easily transferable to alternative suppliers. Limited communication and commitment between transacting parties do not facilitate the formation of a firm basis for the creation of bilateral competitive advantage, which would be sustainable for extended periods of time (Spekman et al. 1994, 78). It could also be argued that the short-term focus encourages both parties to act only on the basis of self-interest, and perhaps even opportunistically.

Bensaou (1999, 41) argues that in high-performing market-exchange relationships (i.e. arm's-length relationships), information sharing seldom takes place, and then mainly during the bidding and contract-negotiation phases. Despite the fact that mutual trust, co-operation and systematic joint effort rarely characterise this relationship type, the social climate is generally positive. Moreover, while most arm's-length relationships are based on short-term contracts, they may have actually lasted more or less continuously for decades (Bensaou 1999, 41). These high performing market-exchange relationships are arm's length in terms of the limited or non-existent interdependence, despite the positive social climate.

It is evident that a vast number of concepts and terminology exist to describe this particular relationship type. Yet, despite the different terminology used, there are strong similarities between the concepts. At the more market-

orientated end of the relationship continuum, the ‘transactional arm’s-length relationship’ and the ‘traditional arm’s-length relationship’ could be considered more or less equivalent. On the other hand, the concepts ‘contractual[7] and ‘durable arm’s-length relationship’ are very similar towards the more developed end of the continuum. Despite the possibility of further exploration and application of different long-term relationship sub-types, it is not feasible to progress further in this direction in this study.

According to Dyer et al. (1998, 68), these long-term yet arm’s-length relationships are most suitable when it is a case of only supplying non-strategic inputs. “Non-strategic”, low-value products are not based on the buying company’s core competencies and have little value in differentiating its end products in the sales markets, for example. Such non-strategic inputs include e.g. batteries, belts and tyres in the automotive industry.

1.2.4 Buyer-supplier partnerships

Both the buyer and the supplier in a buyer-supplier partnership are highly committed to the relationship, and a key driving force behind this commitment is a joint goal of mutual benefit. The two parties do not have (or do not need to have) jointly owned assets, although they have often made relationship-specific investments, which increase bilateral interdependence. Commodities transacted in a buyer-supplier partnership are typically highly specific and adapted to customer requirements. (see e.g., Webster 1992, Cox 1996, Dyer et al. 1998; Bensaou 1999)

Ellram & Krause (1994, 43) defined a supplier partnership as: “an ongoing relationship between firms which involves a commitment over an extended time period, and mutual sharing of information and the risks and rewards of the relationship.”[8] Ellram (1995) introduced a five-phase managerial guideline for the development and implementation of purchasing partnerships, which covers a whole chain of necessary steps for establishing and also maintaining partnership relations with suppliers. She stresses the importance of establishing a solid foundation “on which to build a strong, ongoing relationship based on mutual trust, sharing, and commitment. A partnership will work only if it is beneficial to both parties.” Ellram (1995, 14)

Partnerships are characterised by frequent sharing of relevant, and often confidential, information (which often results in joint learning). The average length of a partnership contract is longer (i.e. > 4 years) than in arm’s-length

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[7] A contract in this case involves a written agreement on terms of trade, for example.

[8] Similar definitions are to be found in a number of other academic journal articles and textbooks on partnerships (see e.g., Cooper & Gardner 1993; Lambert et al. 1996)

relationships, and the contract is often renewed “automatically”. Partnership relations are also maintained with frequent face-to-face visits and assistance on various aspects of doing business. (Dyer et al. 1998, 59–62) Suppliers are involved in new product development at an early stage, and they are also technologically proactive in searching for answers to common problems (Spekman et al. 1994, 78). Partnership relationships also often involve investments in relationship-specific assets (Dyer – Singh 1998, 662).

In all fairness, it must be pointed out that the characteristics used to describe the partnership relationship type are by no means very specific in current academic literature. For example Cox (1996) argues that the term ‘partnership’ has been so misused by practitioners and academics alike that there is no point in further confusing readers by using it to describe any particular relationship type. Instead of attempting to define it as a unique relationship type, he classified it as a range of relationship types between adversarial leverages involving single transactions and internal contracts in a vertically-integrated hierarchy. For a similar approach see Lambert et al. (1996).

Despite his criticism of the partnership concept, it appears as if Cox has somewhat missed the key elements associated with partnership relations. His classification appears too one-sided (i.e. from the buyer’s perspective only) to describe and capture adequately the collaborative nature of partnership relationships. Furthermore, despite the terminology used, the overall tone of his partnership analysis could also be described as more adversarial than collaborative. The win-win principle in relational transactions, although difficult to implement, and all too often misused, is not in conflict with the profit-maximisation motive of any firm engaging in inter-company interaction. “Fit-for-purpose” is the key element not only from the buyer’s (Cox 1996, 65), but also from the supplier’s perspective. In this study, however, the definition of partnerships put forward by Ellram & Krause (1994) is adopted: the partnership is considered a unique collaborative relationship type with “fit-for-purpose” applicability in industrial markets.

According to current literature, long-term collaborative relationships, such as partnerships, result in significant financial payoffs for both buyers and suppliers (Kalwani – Narayandas 1995, 14 and Noordewier et al. 1990, 90–91). According to the Noordewier et al. (1990, 90–91) study, increased relational governance in an industrial buyer-seller relationship improves purchasing performance in terms of acquisition costs when the level of uncertainty is relatively high. Such changes have no effect on transaction performance under conditions of relatively lower levels of uncertainty.

According to Dyer et al. (1998, 68), partnership relationships are – from the buyer’s perspective – most suitable for strategic-input suppliers. Strategic high-value inputs are related to the buying company’s core competence, and

these inputs may produce a competitive advantage to the buying company's end products in the sales markets. Such inputs are closely associated with the buying firm's core competencies, and would include motors in the automotive industry, for example.

1.2.5 Strategic alliances/joint ventures

Webster (1992) categorises joint ventures (i.e. as an arrangement between buyers and suppliers in this case) as one kind of strategic alliance, and claims that the two terms are often used interchangeably. Strategic alliances are often characterised by a joint form of equity or ownership (see e.g., Cooper – Gardner 1993, 15); they are often long term, but are also sometimes scheduled to end when they are used as 'transitional relationships', tending towards either the market or the entrepreneurial governance end of the spectrum of relationship types (Webster 1992, 8). In some cases, strategic alliances are formed when the buyer-supplier partnership takes the form of an entirely new venture (Webster 1992, 8); in other words, the target is often beyond mere efficient transactions and high-performing exchange relationships between buyers and suppliers[9].

1.2.6 Vertical integration

In vertical integration, the governance structure is no longer based directly on market forces and the use of the price mechanism. Instead, entrepreneurial governance is used to allocate resources most efficiently, and not only are 'transactions' performed internally, relationships are also internalised in a single firm (see e.g., Coase 1937; Williamson 1975, 1985). In other words, 'the buyer' and 'the seller' are no longer applicable concepts in the same sense as in market-based transactions. In the light of this study, market-based co-operative inter-organisational buyer-seller relationships fall outside of vertical integration. However, the inter- and intra-functional relationships associated with procurement/sourcing and R&D activities indeed exist within a single vertically integrated hierarchy.

[9] For more information on joint ventures, see e.g., Harrigan 1986.

1.3 Supply chain management and buyer-supplier relationships

Supply Chain Management (later also referred to as SCM) as a concept has lacked a clear and uniform, commonly accepted and used definition. Recently, however, a definition by the Council of Logistics Management (CLM) seems to have become dominant, at least in the Nordic countries. The CLM defines SCM as "the integration of key business processes from end users through original suppliers that provides products, services and information that add value for customers and other stakeholders." (Lambert et al. 1998)

The Global Supply Chain Forum also offers one of the many definitions[10]: "Supply chain management is the integration of key business processes from end user through original suppliers that provide products, services, and information that add value for customers and other stakeholders" (The Global Supply Chain Forum's definition of supply chain management in Lambert & Cooper 2000, 66). This definition emphasises the integration of key business processes that provide value for customers and other stakeholders. Relationships between different supply chain members could be considered to play a key role in integrating business processes and providing value to all stakeholders.

Mentzer et al. (2001) offer one other alternative definition of SCM, as a management philosophy, which has the following characteristics:

1. A systematic approach to viewing the supply chain as a whole, and to managing the total flow of goods inventory from the supplier to the ultimate customer.
2. A strategic orientation toward cooperative efforts to synchronise and converge intrafirm and interfirm operational and strategic capabilities into a unified whole.
3. A customer focus to create unique and individualised sources of customer value, leading to customer satisfaction.

The first characteristic focuses on the physical flow of goods in a supply chain from the ultimate supplier to the ultimate customer. The second point emphasises the relational element of supply chain management. It involves co-operation and convergence of both operational and strategic capabilities, not only between organisations but also intra-firm within the organisational structure of a single firm actively participating in the supply chain. (Mentzer at

[10] It should be noted that the research community has yet to reach a consensus on how to define supply chain management. For a comprehensive discussion on this topic, see e.g., Otto & Kotzab (1999), Croom et al. (2000) and Tan (2000).

al. 2001, 7) Bechtel & Jayaram (1997, 24) even argue that "SCM puts tremendous pressure on the ability of firms to structure strong relationships with suppliers, customers, and sometimes, competitors", although it should be clear that not all relationships can be equal. The third characteristic emphasises the importance of customer focus in a supply chain, and also competitive advantage as "individual sources of customer value" (Mentzer at al. 2001, 7).

In practice, supply chains are difficult to identify, as most companies simultaneously participate in many different ones (Cooper et al. 1997). Some authors (e.g., Ellram 1991b) have questioned the idea of a chain and suggest networks instead. The Nordic school (NOFOMA) has also questioned the usefulness of SCM (see Otto & Kotzab 1999).

So far, various articles have emphasised different aspects. Bowersox (1997) and Metz (1997), in particular, discuss the integrative role of supply chains, meaning the linking of different companies to each other (Otto – Kotzab 1999). Bowersox (1997) distinguishes between internal and external SC integration. Internal integration occurs within business units, while external integration refers to links between companies. Internal integration, again, refers to shared customers and suppliers, geographical overlap, shared knowledge and shared information between business units. Metz (1997) discusses supply chain integration from a technical perspective, claiming that it has been made possible through the development of information technology. Manufacturing and transportation technologies are also developing in such a way as to facilitate more integrated supply chains and increased complexity in the operating environment.

Morash & Clinton (1998) further elaborate on the SC integration discussion by distinguishing between operational excellence and collaborative closeness. Operational excellence is a characteristic of an efficient supply chain, while collaborative closeness is required for the purpose of responsiveness. Operational excellence is characterised by JIT production, process re-engineering and standardisation, whereas collaborative closeness characterises firms sharing information with suppliers and customers. Morash & Clinton (1998), as well as Bowersox (1997), put forth the idea that companies need to be relatively well internally integrated before steps towards external supply chain integration are taken.

Croom et al. (2000) argue that the relationships between the actors in the network are perhaps the most important element of the exchange. This view is also supported by Christopher (2000, 43), who argues that a high level of "connectivity" is perhaps the most important prerequisite for an agile supply chain, which implies not only information exchange on demand and inventory levels, but also multiple, collaborative working relationships across all

organisational levels. Yet, despite the fact that relationships are a key characteristic of supply chain management, most of the research on SCM has focused on transactions and the logistics functions (Bechtel – Jayaram 1997). According to Croom et al. (2000, 69), the origins of the concept supply chain management are unclear, but it originally developed in the area of transportation and physical distribution, according to the concepts and techniques of industrial dynamics derived from the work of Forrester (1961). In fact, practitioners in wholesaling and retailing initially used the term SCM to describe the integration of logistics and physical distribution (Wisner – Tan 2000, 33). A fair share of academic SCM research has also sprung from the areas of physical distribution and logistics. In fact, some researchers have used the terms logistics and SCM more or less interchangeably (Bask – Juga 2001, 138), while others have even discussed in detail the positioning of logistics in relation to SCM, and vice versa (see Halldorsson & Larson 2000). The logistics orientation in supply chain management is also illustrated by Bechtel & Jayaram (1997, 19) in their description of various schools of thought (see Figure 3).

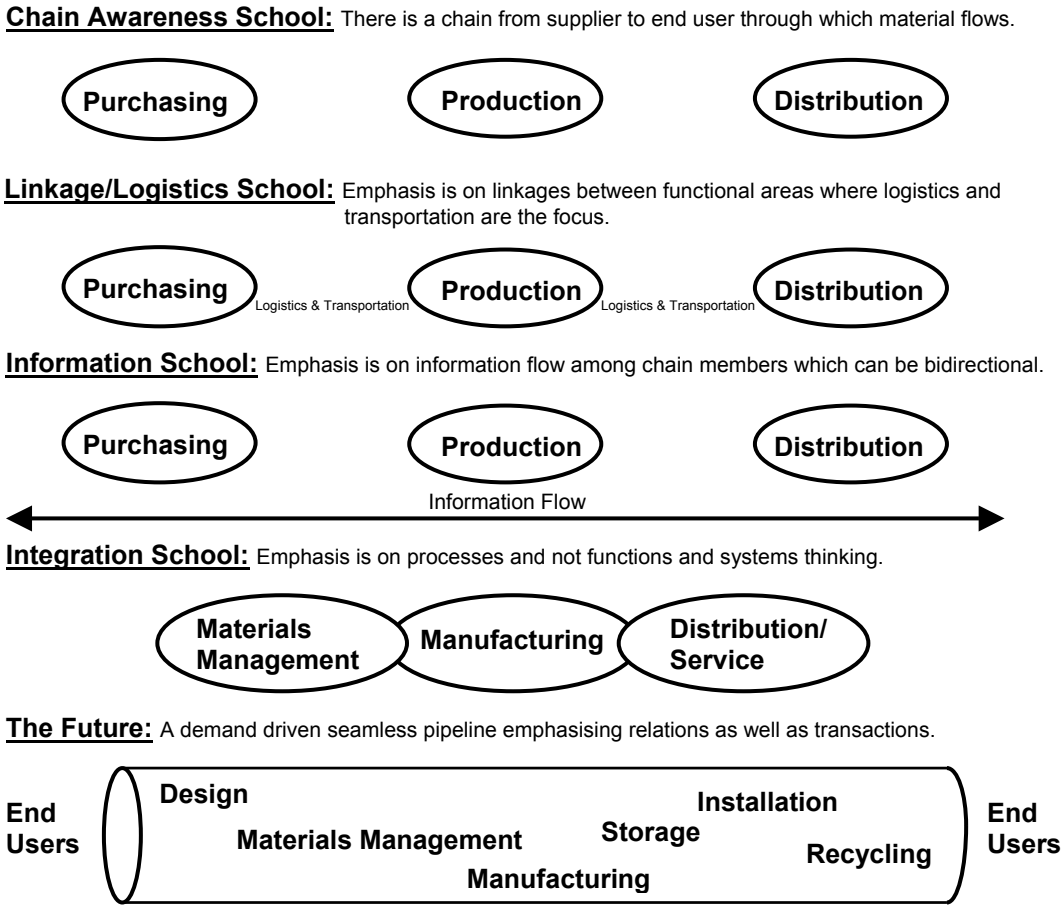

Figure 3. Supply chain management schools of thought (Bechtel – Jayaram 1997, 19)

According to Bechtel & Jayaram's vision for future research, SCM is becoming closely tied to concepts such as strategic alliances, partnerships and other co-operative relations with supply chain members. Bask & Juga (2001, 146) also argue that a "supply chain can be seen as a portfolio of relationships and processes that should be managed like products or customers, based on the resources required and revenues generated by them". SCM is also claimed to be more than a materials movement or transportation initiative, and is rather considered a new way of thinking about business relationships and a complete business relationship model (Quiett 2002, 40). It has also been suggested that future research on supply chain management should attempt to integrate both the transactions and the relationships between various firms in order to promote full understanding of the concept (Bechtel – Jayaram 1997). Quiett (2002, 43) also argues that companies often misleadingly think of SCM only as materials movement and transportation, and not as a complete business relationship model[11]. Finally, Whipple and Frankel (2000, 22) argue that long-term relationships in a supply chain are founded not only on hard performance elements (e.g., cost, time and quality), but also on people-oriented factors such as trust and commitment.

Nevertheless, both the transaction and the relationship elements could be argued to be present to some degree in all supply chains and supply chain management. Figure 4 below illustrates this point, and the relative significance of transactions and relationships in relation to different product types, transacted volumes and both product and production characteristics.

[11] Quiett (2002) defines SCM as a relationship model consisting of both SCM philosophy and methodology. SCM philosophy is founded on the realisation that everyone involved in the supply chain, whether internal or external, is both a supplier and a customer (compare this definition with the IMP-group/industrial network approach characteristics presented in chapter 3 for similarities). SCM methodology includes the mental and transactional processes needed to analyse, evaluate and manage critical events in the whole supply chain, for example. (Quiett 2002, 41–43)

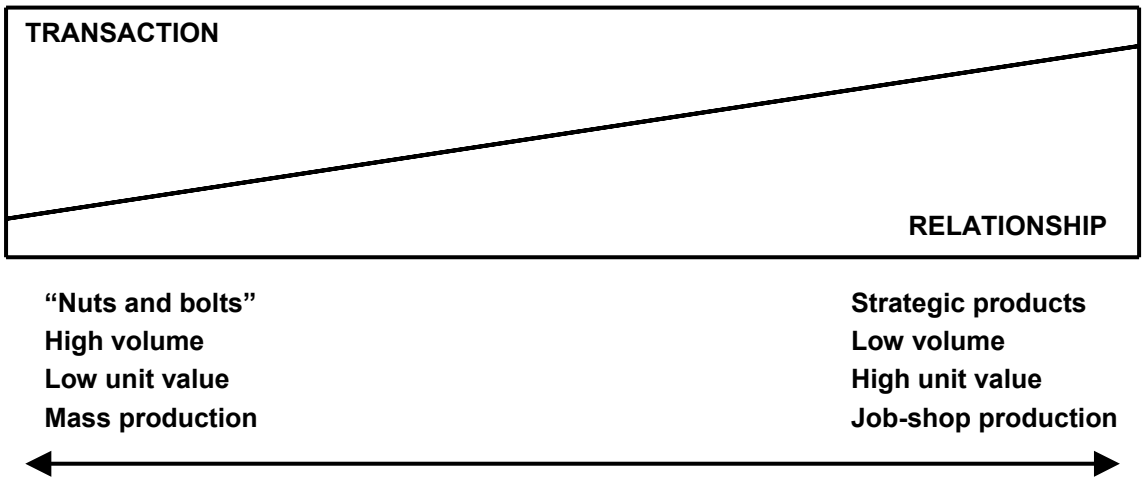

Figure 4. The relative significance of the efficiency of the transaction and the relationship in buyer-supplier relationships[12]

This study is best positioned in the "future school" of Bechtel & Jayaram's supply chain schools of thought, where both the transactions and relationships bear significance to the demand driven pipeline. The focus in this study is not solely on the transactional element of SCM. In addition such elements as information exchange, processes and relationships (including behavioural factors) that exist or take place between the companies are investigated.

The buyer-supplier relationships in focus in this study concern high-value, low-volume strategic products entailing a production philosophy that is far from that in high-volume assembly-line production. Therefore the transaction and its efficiency, although the basis of any buyer-supplier relationship as such, does not play as significant a role, in relative terms, as it does in relationships established for supplying low-value, high-volume "nuts and bolts". In this latter case, creative logistics and e-business solutions associated with efficient transactions, for example, would deserve proportionally more emphasis than given in this study.

1.4 Structure of this study

The first chapter of this thesis provides a brief introduction to the study, the purpose and the motivating factors behind it. It also positions the research among different schools of thought in SCM and industrial relationship studies.

[12] For similar thinking, see e.g., Grönroos (1990, 9), Anderson & Narus (1991, 97) and Jennings & Plank (1995, 414)

The research design is described in detail in chapter two. The research setting, the questions and choice of method are discussed, as is the research methodology. The case company is also introduced in this chapter.

Some popular theoretical approaches to research on buyer-supplier relationships are reviewed in chapter three in the light of this study. The key characteristics of transaction cost theory, the relationship marketing approach, and the IMP-group/Industrial network approach are also discussed.

Chapter four reviews some recent empirical investigations on inter-organisational, inter-functional and intra-functional relationships. Each approach is evaluated in terms of the relationship characteristics/constructs, the unit of analysis and the research approach.

The buyer-supplier relationship assessment model is developed in chapter five. The model is based on recent studies on buyer-supplier partnership characteristics, and the work started in Seppälä (2001) is continued. The relationship presentation scheme is also introduced.

The relevant case-company functions and the key personnel involved in strategic sourcing and procurement operations are introduced in chapter six. The functions involved in this study are Manufacturing (Procurement), Research & Development and Service (Purchasing).

Chapters seven and eight describe in detail the two relatively well-performing buyer-supplier relationships using the relationship assessment model developed in chapter five from an inter-organisational, inter-functional and intra-functional perspective.

By way of contrast, chapters nine and ten apply the relationship assessment model to relatively low-performing buyer-supplier relationships. All of the three relationship perspectives are also investigated here.

The high- and low-performing buyer-supplier relationships are compared in chapter 11, and differences are discussed from all of the three relationship perspectives. The results of the comparison are then presented in chapter 12, along with both theoretical and managerial implications. The limitations of the study and suggestions for further research are also discussed. Figure 5 below illustrates the structure of this thesis in a graphical format.

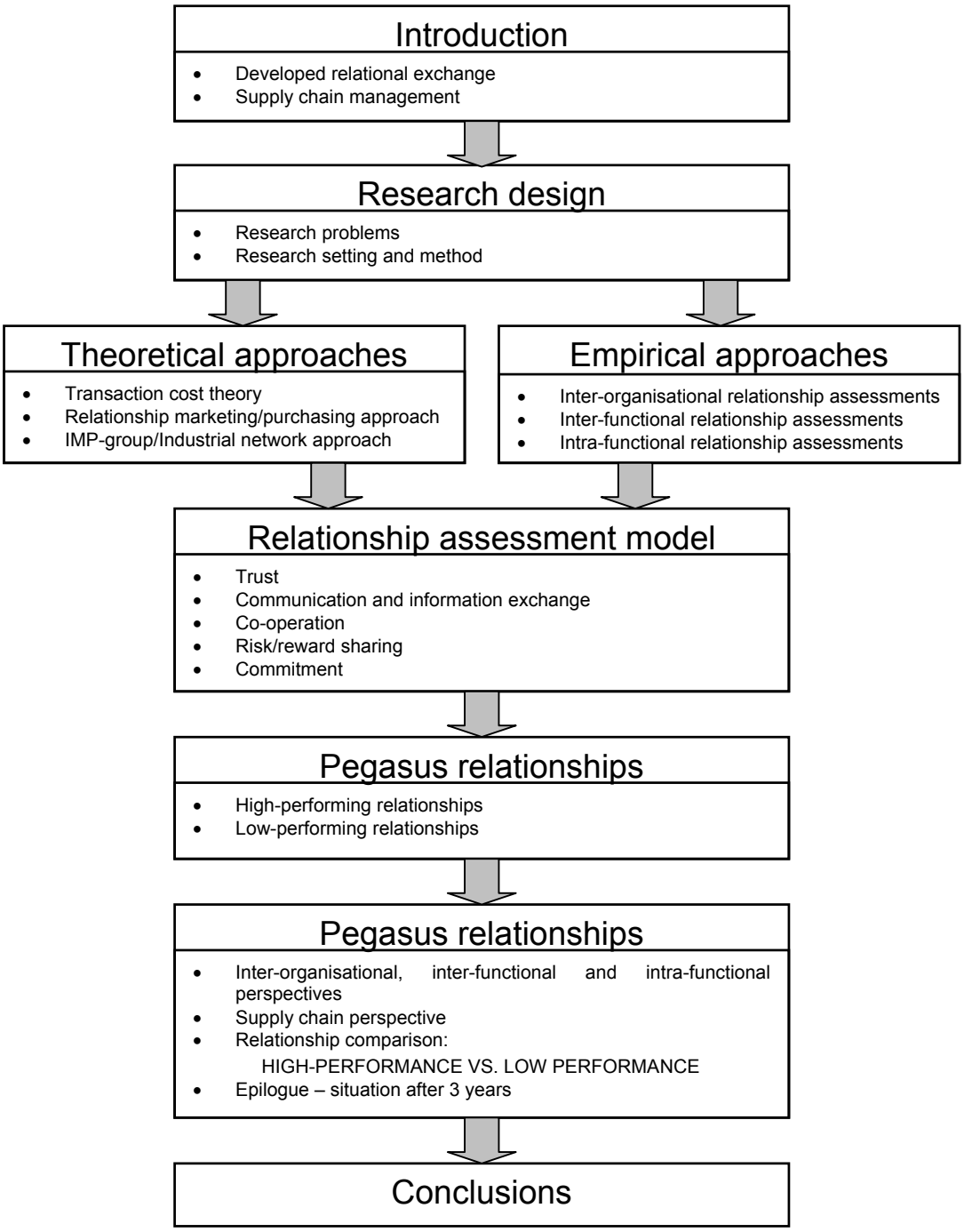

Figure 5. The structure of this thesis

2 RESEARCH DESIGN

2.1 Research project

In mid-1998, Turku School of Economics and Business Administration and the Pegasus Corporation engaged in talks over a research project on buyer-supplier relationships. These initial talks progressed relatively quickly and this research project was initiated during the latter part of 1998 with the case company under study. The senior management – especially the Vice-President, Sourcing – had an interest in obtaining an "outsider's perspective" on the current state of the company's sourcing operations, and more specifically on the relationships it has with its "strategic suppliers". At the initial stages of this research initiative, it was necessary to focus efforts on producing exploratory empirical results, which naturally interested the company, in order to secure further financing for the project. It was not until later that the academic aspects of the study became the focal point of the research process. However, earlier the academic area of interest was already familiar to the researcher on a general level as a result of a research project reported in his Master's Thesis in early 1998.

Strategic sourcing is defined in this study as a cross-functional process involving many traditional company functions such as purchasing and research & development (for similar thinking, see e.g., Spiers 1997, 109 and Anderson – Katz 1998, 9). Anderson & Katz (1998, 9) even argue that gaining cross-functional support (and also involvement) between different functional areas is a key aspect of selecting the most appropriate sourcing strategy. Strategic sourcing includes strategic decision-making (i.e. supplier selection and make-or-buy aspects), and it has implications for all the business areas/functions included in the focal area of this study. Strategic procurement is a more functional activity centred on the procurement function, although at the strategic level it includes e.g. supply-contract negotiations. Finally, operative purchasing includes activities such as actual order making and expediting activities. The focus in this study is primarily on strategic sourcing and procurement, and thus day-to-day operative purchasing issues are not addressed.

2.2 Research problems

The purpose of this study is to develop a relationship assessment model and methodology for studying buyer-supplier relationships from inter-organisational, inter-functional and intra-functional perspectives. This analysis model is formulated on the basis of recent academic literature on developed relational exchange and partnership relationship characteristics. This further development of the relationship assessment model is a continuation of the work started in Seppälä (2001).

Recent research on developed relational-exchange and buyer-supplier relationships is also reviewed on both theoretical and empirical levels. First, some popular theoretical approaches to research on buyer-supplier relationships are reviewed in the light of this study. These include transaction cost theory, the relationship marketing/purchasing approach, and the IMP-group/Industrial network approach. Recent empirical investigations are reviewed and assessed in the light of the relevant inter-organisational, inter-functional and intra-functional perspectives.

Finally, the relationship assessment model is iteratively developed by applying it in a case-company setting with the four buyer-supplier relationships under investigation, and with good access[13] to all three buyer-supplier relationship perspectives. All in all, this study attempts to address the following research questions[14]:

1. **How well does contemporary research literature reflect and explain the existence of business relationships in inter-organisational, inter-functional and intra-functional perspectives?**
2. **Does the relationship assessment model and the applied research methodology offer relevant insights into the buyer-supplier relationships under study?**
3. **In the light of this study, do intra- and inter-functional relationships reflect the inter-organisational relationships?**

[13] Spekman (2000, 30) argues that, as researchers, "We cannot lament the problems associated with gaining access to large corporations or the expenses associated with data collection. More importantly, we can ill afford to hide behind a narrow definition of our field of marketing and ignore the multidisciplinary, cross function, inter-firm nature of the problems we face."

[14] Since buyer-supplier relationships have never before been evaluated in this precise form, taking into consideration inter-organisational, inter-functional and intra-functional perspectives simultaneously, attempting to develop a more advanced series of complex research questions/hypotheses was not considered feasible.

The primary aim of this study is to analyse the buyer-supplier relationships in all three relationship perspectives (inter-organisational, inter-functional and intra-functional), using multiple informants in both buyer and supplier organisations, and the relationship assessment model developed in the study.

The first research question reviews contemporary research literature on two levels. First, some popular theoretical approaches are assessed in the light of this study. Recent empirical investigations are then looked at in the context of buyer-supplier relationships from inter-organisational, inter-functional and intra-functional perspectives.

The second and third research questions are geared towards both theoretical and methodological issues in the context of research on buyer-supplier relationships. The purpose is to provide more understanding on whether this kind of research approach and methodology are, first of all, needed or justified considering the effort invested.

To complement the more theoretical and methodological aims, the managerial aim is to attempt to determine how consistent the case company is in its sourcing operations between different business areas and product factories. This information, in particular, was of great interest to the top management, and a separate report has already been produced on these aspects. This data and detailed suggestions for possible improvements in the supplier relationships were reported to the case-company management prior to this dissertation being published. Some of this same data was used in Seppälä (2001).

2.2.1 The case company

The case company, Pegasus Corporation[15], is a multi-national firm, which specialises in the manufacture of heavy industrial goods for two primary market segments. Its annual turnover was approximately two billion euros in 1999. The production strategy has a strong assembly focus and the trend has been to outsource most component-manufacturing operations and to concentrate on end-product assembly. Consequently, components sourced from outside suppliers make up over 60% of the manufacturing costs. The annual procurement volume is approximately one billion euros. The overall operating principle of this firm is, to a great extent, make-to-order with some engineer-to-order characteristics. Strategic sourcing in this company is a multi-functional activity and it involves several case company functions and locations, primarily in Europe.

[15] Note that Pegasus is not the actual name of the case company in question.

The case company consists of five business areas. Those mainly involved in strategic sourcing are Manufacturing (Procurement), Research & Development and Service (Purchasing). Manufacturing (Procurement) is responsible for procurement in the factory business area for the manufacture of new products. Research & Development is responsible for Pegasus' R&D and the design of the end product, and for most of the components purchased by both Manufacturing (Procurement) and Service (Purchasing) from outside suppliers. The Pegasus Service business area is responsible for end-product servicing and its sub-function – Service (Purchasing) – handles all spare-part purchases. There are also two sales business areas, each with their own market segment, that were not directly involved in this study. Figure 6 illustrates the focal area of this research project in the Pegasus supply chain. Note that the two sales business areas are not included.

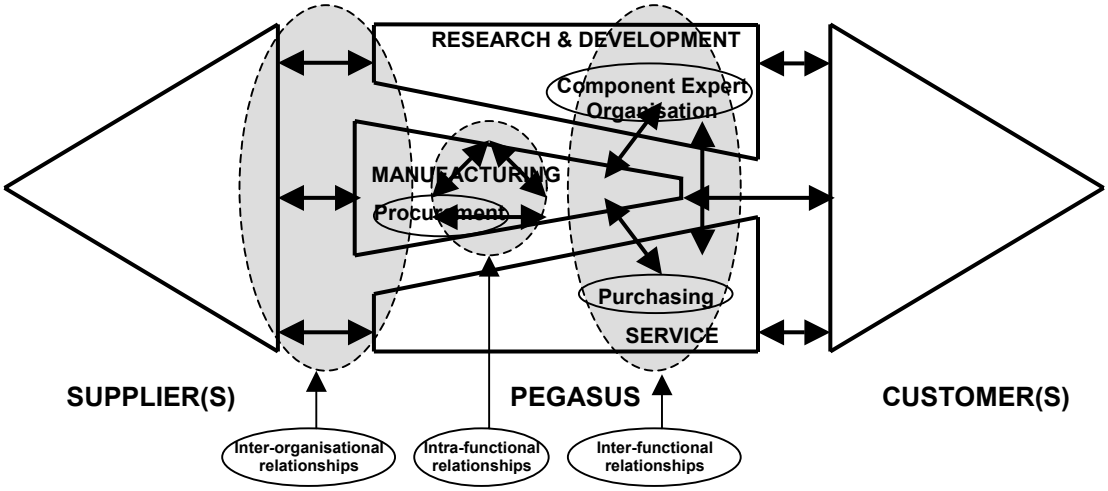

Figure 6. The supply chain relationships under investigation in this study

The business units chosen for this study are Factory A, Factory B, Factory C, Factory D and Factory E, all located in Europe. The factories in question cover almost all Pegasus manufacturing operations (for Pegasus brand products), and consequently four out of five of them are part of the manufacturing business area. Factory E belongs to the Service Business area, as it has no manufacturing operations and is the primary party responsible for co-ordinating the license manufacturing and service business for the other type of Pegasus end-products (Medusa brand), which are manufactured by licensee companies.

2.3 Research setting

Despite the fact that this research was conducted in a single-case company setting, there are a number of "mini cases" involved, which increase the number of cases up to acceptable levels in qualitatively-orientated research (see Eisenhardt 1989, 545). The individual buyer-supplier relationships were originally selected on the basis of five purchased components, each of which have significance in relation to the case company's sourcing operations, and beyond (Seppälä 2001).

2.3.1 Purchased components used for initial supplier selection

Originally, the supplier relationships under investigation in this study were selected on the basis of five purchased components. These components, and the suppliers involved, were chosen together with the case-company representatives. Kraljic (1983, 111) offers a relatively developed, yet generic, classification tool to categorise purchased components. One element in the purchasing-portfolio matrix is supply-market complexity, and the other is the importance of purchasing (including e.g. company and component specific issues). See Figure 7 for Kraljic's purchasing-portfolio matrix.

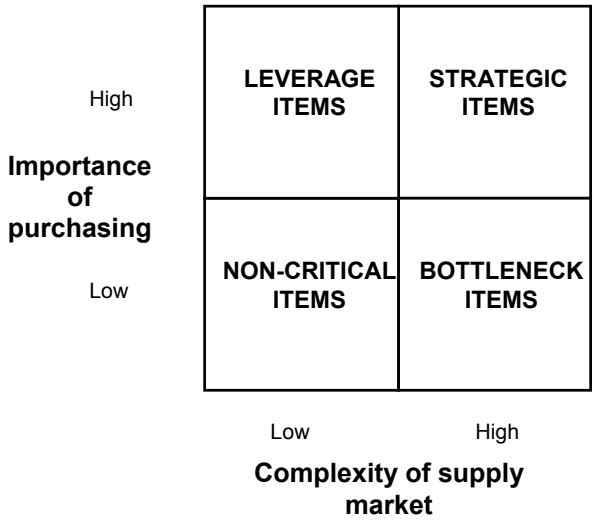

Figure 7. Kraljic's purchasing portfolio matrix

Kraljic (1983) defined each item category in detail and suggested some supply-management practices for each one. The **non-critical items** are low-supply-risk and low-profit-impact products. There is an abundant supply of these standard products (e.g., office supplies and steel rods) on the market, and

purchasing them is a relatively uncomplicated activity involving simple market analysis and inventory optimisation.

The **leverage items** are low-supply-risk, high-profit-impact products, and the purchasing personnel's main tasks involve vendor analysis and selection, full exploitation of purchasing power and possibly even spot trading in the supply markets. Such products include e.g. heating oil and computers.

Bottleneck items lie in the quadrant involving high supply risk and low profit impact, where the goal is to ensure reliability of supply and availability (possibly at premium prices). These bottleneck products may include some electronic parts and outside services.

Strategic items involve both high supply risk and high profit impact, and include scarce metals and high-value components in general. The key objectives are to ensure long-term availability, to build up long-term supply relationships, and to develop contingency plans (including make-or-buy decision-making).

However, in order to make the component selection more communicative to the case company, it was necessary to "take a step back" and to approach it from the company's perspective. The supplier selection was made on the basis of four criteria relating to markets, intra-company factors, inter-company relations and products. Each criterion bears significance in relation to strategic inter-company relations between the suppliers and Pegasus. In other words, the components and selection criteria reflect the business reality of the case company. The criteria are:

1. The number of suppliers world-wide (i.e. availability)
2. The volume transacted between Pegasus and supplier (in number of pcs.)
3. The extent of R&D co-operation between Pegasus and the suppliers
4. The component's role in the service business (i.e. supply chain "reach")

These criteria were used to select five different components to illustrate the strategic sourcing relationships between Pegasus and nine of its suppliers. The components[16] selected on the basis of combinations of these four criteria were:

A) Alpha
B) Beta
C) Gamma
D) Delta
E) Epsilon

[16] Note that the actual component names have been disguised for the purposes of this study.

In Pegasus terminology[17], these five components are strategic components. In total, there are approximately 25 strategic components (or groups of similar components), which are under corporate-wide procurement co-ordination, and they represent approximately 60% of the total procurement volume. Most of the 25 components are A-products (on the ABC-classification), but some are also clearly B- and perhaps even C-type commodities. All in all, there appears to be no single selection criterion or method at Pegasus indicating how these 25 components are classified as strategic. The selection method appears to have been heuristic and very much based on the business reality of the case company, bearing in mind the nature of the component and the possible benefits achievable through corporate procurement co-ordination and volume consolidation.

There are also a vast number of components that are co-ordinated locally in each business unit. A typical Pegasus product has several thousand parts, but only approximately 2,500 individual components, since several components are used in multiples.

The ABC-classification is not in active use across the whole corporation, but the rough classification given in Figure 8 illustrates the positioning of these selected components in terms of the ABC-classification, and the number of suppliers in each component category.

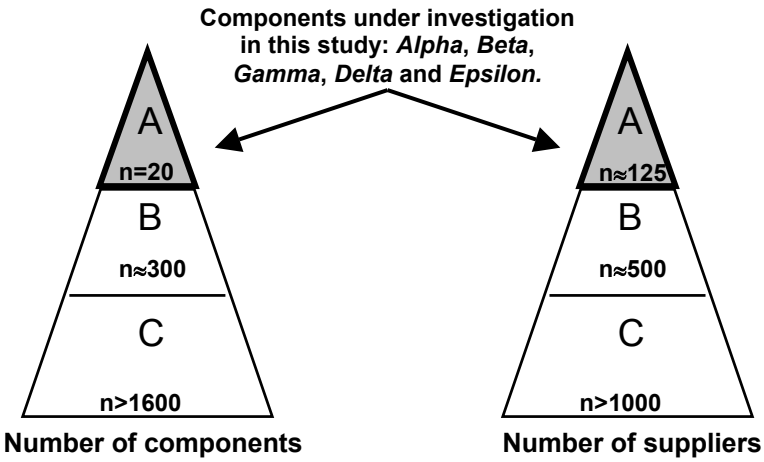

Figure 8. The five selected components and the range of components and active suppliers on an estimated ABC-classification scheme

All five components under investigation here are supplied by original equipment manufacturers (OEM-suppliers). Most of the supplier relationships in the A-component category involve only the OEM-supplier and Pegasus, but in the case of some, such as Japanese suppliers, there is often a mandatory

[17] There may be a difference between the way in which Pegasus classifies the five components and the way in which more objective classification schemes would classify them.

middleman (i.e. a trading house) involved. However, the preferred practice at Pegasus is to deal with OEM-suppliers directly, and no middlemen were involved in the supplier relationships studied here.

In order to give more justification to the selected components it is necessary to illustrate the relationship between them and between the criteria. First, the components are evaluated in terms of the number of alternative suppliers: this criterion was chosen to illustrate the availability of a particular component on the global supply markets. Then these same components are evaluated in the light of their significance to Pegasus' business in terms of the traded volume, measured not according to financial value, but according to transaction frequency between Pegasus and the supplier. Despite the coarseness in quantifying the set criteria, and the resulting "roughness" in evaluation, this approach is believed to be appropriate in selecting the set of components and respective suppliers for further investigation. Figure 9 illustrates the mapping of the selected components on a two-by-two matrix.

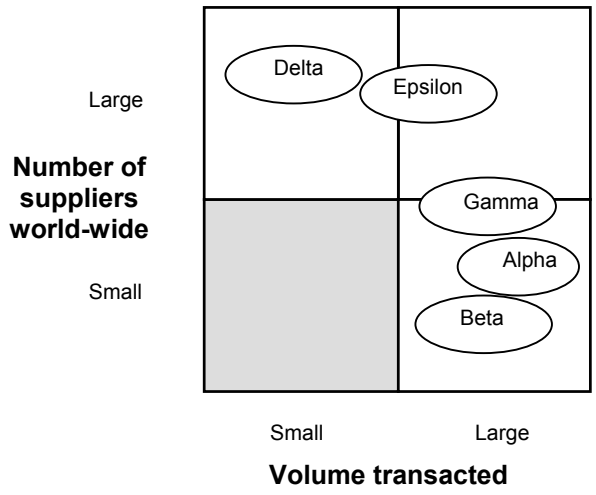

Figure 9. Selected components with regard to the number of alternative suppliers and volume transacted (in pcs.)

Component groups with both a limited number of suppliers and low transaction frequency were deliberately excluded from the study. This group was perceived to consist of a very limited number of highly customer-specific, and also high monetary-value, components, and it was not in the interest of the case company to include these "extremely strategic" components and respective suppliers. In other words, no access (see Gummesson 1991) was granted to these relationships, which were perhaps of greatest interest (see Kraljic 1983) in terms of developed relational exchange (e.g., partnerships).

The first two criteria are very much centred on the procurement function, but the remaining two also take into account the supply-market environment and the perspective of the other business areas involved in this study. The

significance of these components to other business units is evaluated in terms of the extent of the R&D co-operation between the transacting parties, and of the component significance to the service business. A high level of R&D co-operation between the supplier and Pegasus R&D typically involves a technology co-operation agreement between the parties for joint R&D on new and existing designs. Service-business significance relates to the component's role in spare-part sales, in terms of both quantity and monetary value. This latter criterion is also a measure of the component's "reach" in terms of both the supply chain and, more importantly, the profitability potential for the case company. The relationship between the selected component groups and the latter two criteria is illustrated in Figure 10.

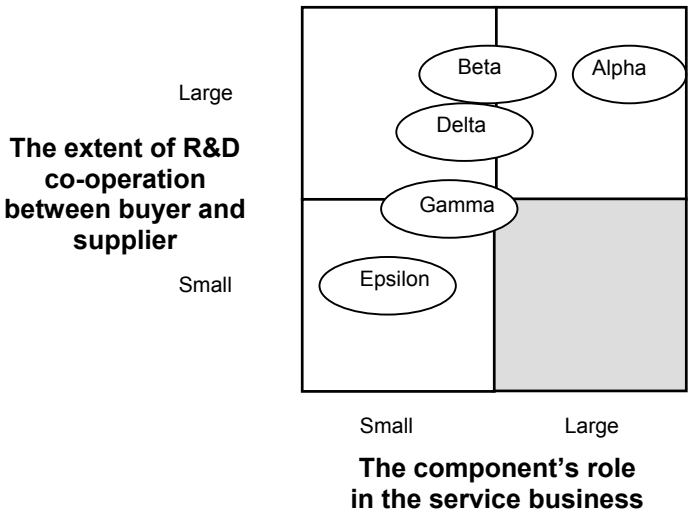

Figure 10. Selected components in relation to R&D co-operation and significance in the service business

These components, both of which involve limited R&D co-operation between transacting parties, and play a major role in the service business, were also excluded from this study. On the basis of these two criteria, such components were considered to be simple "nuts and bolts" components, and as such were not of interest in this study.

Each of the components selected is assumed to represent a more general set of components with similar characteristics in terms of the case company's internal and external operations. **Alpha** is a high-volume component with a limited number of suppliers on the market. It also has both a significant role in the service business, and there is extensive R&D co-operation between the case company and the suppliers. **Beta** is categorised as a component with moderate-to-large volume and a very limited number of suppliers on the market: in terms of both R&D co-operation and service, it is also of considerable significance to the case company. **Gamma** represents moderate-

volume components with a limited number of suppliers and a moderate role in the service business, with limited R&D co-operation between the case company and the suppliers. **Delta** has limited transaction volume and a relatively large number of suppliers on the market: it bears moderate significance to the service business, and some R&D co-operation takes place between the suppliers and the case company. **Epsilon** is transacted in moderate volumes, and there are many alternative suppliers: there is limited R&D co-operation between the case company and the suppliers, and the component is of very little significance to the service business. Each of these descriptions and classifications was formulated on the basis of the two matrices presented in Figures 9 and 10. These descriptions and categorisations were also checked and confirmed in discussions with the case company and with supplier representatives during the research process.

These criteria – developed together with the case-company representatives so that they would reflect the business reality – may be transformed and fitted into Kraljic's (1983) purchasing-portfolio matrix and the concomitant terminology, as illustrated in Figure 11.

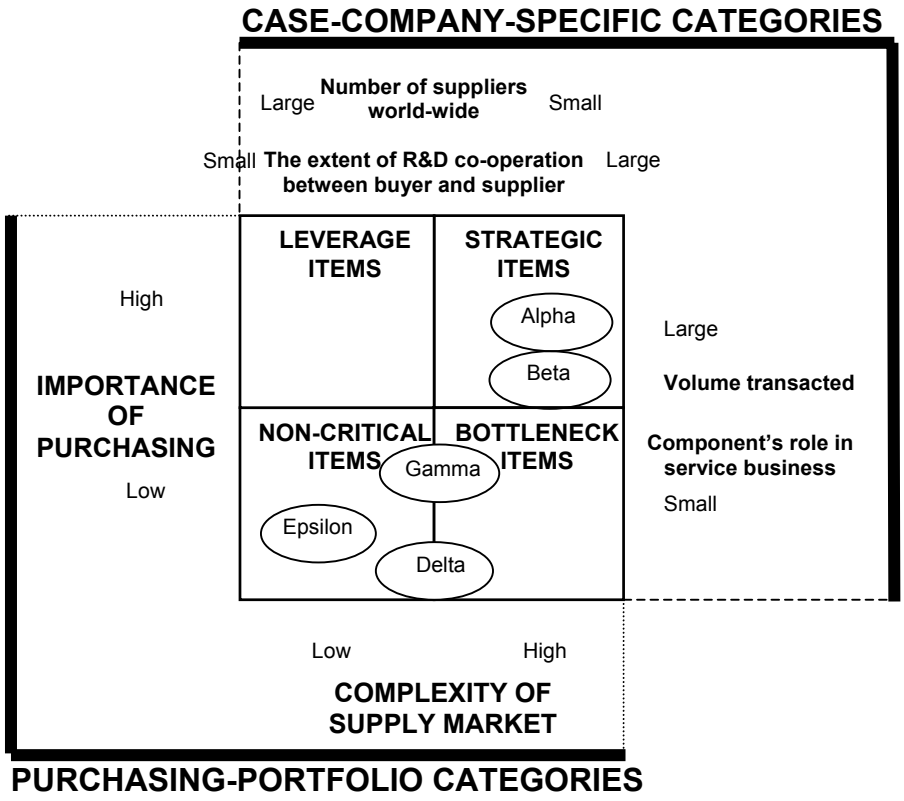

Figure 11. Selected components classified in terms of both the generic purchasing portfolio and case-company -specific categories

Figure 11 shows the relationship between the generic-purchasing-portfolio matrix (Kraljic 1983) and the case-company-specific categories. It is evident

that there is no “one-to-one” match between the categories, as the level of analysis is much more aggregated in Kraljic’s purchasing-portfolio matrix. Owing to the lack of details (and transparency), the Kraljic matrix may not be the most efficient tool for communicating purchasing-component classifications to “operatively minded” company personnel. In fact, Kraljic (1983, 113) recognises this implicitly: “No list of evaluation criteria is equally applicable in every industry”.

In Pegasus terminology, all five components are categorised as strategic. Yet, on the basis of the component categorisations, regardless of whether the case-company-specific method or Kraljic’s purchasing portfolio matrix is used, it would appear that only alpha and beta are truly strategic components. According to Kraljic (1983), for example, these strategic components would warrant developed buyer-supplier relationships, or possibly even vertical integration, as the preferred form of governance mechanism. Epsilon appears to be a non-critical (i.e. non-strategic) item, and both gamma and delta seem to be positioned somewhere between non-critical and bottleneck items. Kraljic (1983) suggests that these components would be best transacted in a more market-orientated form of governance, e.g., “at arm’s length” from suppliers. This issue of purchased items and governance/relationship types is explored further in chapter 3.

2.3.2 Selected buyer-supplier relationships

In total, the Pegasus supplier base comprises over 3,000 active suppliers. Some components have a large number of alternative suppliers, yet for some component types, the number is limited to a very few. Even within a single component type the number of suppliers varies quite significantly: the primary limiting factor is the component size, in terms of both weight and physical dimensions. Within a single component group, the smaller size range may have dozens of suppliers, but for the larger size range there may be only one or two that are capable of producing the particular component cost-efficiently. This is especially apparent in castings and forged components.

The Pegasus supplier base for each component varies in terms of various factors such as the number of suppliers and the number of product factories they each supply. The characteristics of the respective product or component (mainly size) have an effect on the supplier base: in principle, the larger the size of the final Pegasus product and its individual components, the fewer capable suppliers there are. In order to allow for comparisons between the practices of each product factory, it was necessary to select suppliers serving as many of them as possible. Very few supply them all, which is also an

indication of the Pegasus supply-base structure. It should also be noted that the total scope of each supplier relationship is investigated in its entirety, there being no other contacts or business relationships between the parties outside the coverage of this study.

For the purposes of this study, one to three suppliers were selected for each component. Table 2 summarises the chosen suppliers and their relation to each product factory and Service (Purchasing). At the time the research data was collected, Apollo was not actively supplying any Pegasus product factory, but Factory A had been the most active party in initiating a supply relationship. Moreover, Dionysos was also supplying two different component types (delta and epsilon) at the time. The relationship score[18] was calculated on the basis of earlier research results presented in Seppälä (2001). With the exception of Apollo, all of the suppliers taking part in this study are significant in terms of the purchase volume transacted and number of transaction annually.

Table 2. Selected components[19] and suppliers[20] in relation to each product factory and Service (Purchasing)

Supplier	RELATIONSHIP SCORE (scale: 0-100)	Rank	Component	PRODUCT FACTORY					SERVICE
				A	B	C	D	E License support and Service	
BELLONA	77	6	Beta	X	X	X	X	X	X
DIONYSOS	63	14	Delta	X	-	-	-	-	-
Geryon	60	63	Gamma	X	X	-	-	-	-
Dionysos	57	14	Epsilon	X	X	-	-	-	-
Ajax	57	4	Alpha	X	X	X	X	-	X
Anubis	57	16	Alpha	-	-	-	X	X	X
Daphne	47	146	Delta	X	X	-	-	-	X
Apollo	47	N/A	Alpha	(X)	-	-	-	-	-
GEB	47	51	Gamma	X	X	X	X	-	X
ECHO	43	70	Epsilon	-	-	X	X	-	-

The letter X marks a relation and a minus sign ('-') indicates no relation. The supplier's rank refers to its size as a supplier (as volume supplied to Pegasus in monetary value); rank #1 is the biggest.

The original supplier selection (see Seppälä 2001) was made on the basis of component summary reports prepared by the Manufacturing (Procurement) Component Managers. It should also be noted that one delta type is manufactured in-house, at Pegasus' own delta factory. The make-or-buy

[18] The relationship score was calculated by summing the relationship components from both sides of the dyad (min = 1, mid = 2 and max = 3), and scaling this total score to a range between 0 and 100.

[19] Since the end product produced by each Pegasus product factory is unique, these selected components are not substitutes for one another. In other words, a shortage of alphas in Factory A production cannot be compensated for from Factory B. Despite some differences between each supplier's products, the suppliers themselves may be substitutes for each other in each component group in the particular product factory.

[20] Note that the names used here are not the actual supplier names.

aspects, however, are not considered in this study on account of the generally limited in-house manufacturing of components.

In addition to the contact between the supplier and the Pegasus representatives who were interviewed, there are also frequent operative-level contacts between Pegasus operative level purchasers in each of the applicable product factories, and the respective operative level sales representative at the suppliers. These contacts were not investigated, as they mainly concern call-off activities, and despite some links to strategic-level operations, they are outside the scope of this research.

On the basis of Seppälä (2001), four buyer-supplier relationships out of the original 10 were selected for further investigation, with two dyadic relationships representing "high-performing" and two "low-performing" types. These four relationships are highlighted in a grey background colour in Table 2. The relationship score was determined on the basis of research results in Seppälä (2001). The empirical investigation in this study was conducted using multiple informants in both the buyer and supplier organisations. Both Bellona and Dionysos (delta) represent the more developed buyer-supplier relationships, and both Ge and Echo were chosen from the less-developed relationships.

2.4 Conducting the research

As was the case in Metcalf et al.'s (1992, 33) study, industry-specific knowledge proved to be invaluable for the development of meaningful measures to use in this study. Here, such knowledge was gained from relevant trade journals and work experience in the case company during 1997. The academic area of interest was made familiar during a research project that resulted in the author's Master's Thesis in 1998.

The initial stages of this research involved interviews and discussion with Pegasus senior management in order to form a comprehensive, yet aggregate, picture of the relationships in existence, and to tentatively identify the relevant Pegasus representatives in terms of this study. The number and identity of the key individuals to be interviewed were not known at the beginning of the process. In addition, the component summary reports prepared by the Pegasus Component Managers proved to be valuable sources of basic data about the supplier relationships.

In total, 68 Pegasus and supplier representatives were interviewed[21] between February and June 1999, in seven European countries (see Appendix 2). The inter-organisational relationship data was fully used in Seppälä (2001).

[21] This data was partly reported in the author's Licentiate thesis (Seppälä 2001).

Each interview was conducted by a single researcher, at the premises of either the case company or the supplier, and each interview took approximately two hours. As the identities of key informants were not known in advance, the research progressed from the Pegasus representatives to the suppliers' representatives. All representatives were asked during the interview sessions to identify their contacts in the other organisation. In the case of the Pegasus representatives, this request was made first of all in order to indicate whom to contact, and second, in order to double-check that all relevant informants were interviewed in both organisations.

The interviews were not recorded – a decision that was made together with the case-company representatives. It was believed that more open and honest discussion would result from not using a tape recorder[22]. Extensive notes were taken during each interview, and in most cases the interview was converted into report format as soon as possible, often during the same day. This overlapping of data analysis with data collection is highly recommended by Eisenhardt (1989, 539), as it gives the researcher a head start in the data analysis, and also allows him or her to take advantage of flexible data collection. Indeed, at times, when different informants communicated conflicting information, it was necessary to confirm and to clarify some issues by telephone or e-mail later. In most cases the inconsistencies were only minor.

Some case-company documents and supplier brochures were also used to give company and supplier descriptions, and to determine what share the sales to Pegasus represented in the total output of the supplier or supplier business unit, for example.

Extensive interviews were conducted with multiple informants in order to determine the relationship component characteristics and, ultimately, the relationship component score for each buyer-supplier relationship from inter-organisational, inter-functional and intra-functional perspectives. However, to complement the qualitative approach, a quantitative research approach was also applied by using the 21st Century Supply Chain Benchmarking Tool (see Bowersox et al. 1999) to measure the extent of supply chain integration. This benchmarking tool was not originally designed to measure relationship assessment model constructs, but some of the individual survey questions may be used to measure for example communication, co-operation and risk/reward sharing. Thus it was only used to assess the level of supply chain integration from the perspective of some Pegasus representatives, and most, but not all, of

[22] In hindsight, the responses, in some cases, would not have been affected by the tape recorder (i.e. the Ajax interviews). In other cases, however, it would have resulted in problems concerning openness (e.g., one informant (from Daphne) called – over a week after the interview – to emphasise that there were no problems in the relationship, and to make sure she had not been misunderstood). Most of the interview situations are assumed to fall between these two extreme cases.

the interview participants took part in the survey. Moreover, the level of analysis in the survey was not on individual buyer-supplier relationships, but on the firm level. The supply chain benchmarking tool was used to determine what kind of picture of the focal area of research would be formed using alternative research methodology. This benchmarking data was collected some six months after the primary relationship data was collected.

All in all, in addition to taking an inductive research approach, this study also contains some deductive research. The deductive-research approach features in two sections. First, some popular theoretical research approaches are investigated in the light of this study on buyer-supplier relationships in inter-organisational, inter-functional and intra-functional perspectives. Then some recent empirical investigations are reviewed in terms of research constructs, research methodology and setting, for example. Both of these deductive sections bring to light some possible gaps in the current literature.

During the four-year research process, the empirical part of the data was checked on multiple occasions with Pegasus representatives. The research results were reported to the company representatives in a two-day seminar in 1999, on the basis of which they developed detailed improvement plans. The research project and its ideas were also presented (and "tested") at certain academic conferences[23] and doctoral tutorials. Figure 12 below illustrates the research time-line and some key events during the research process:

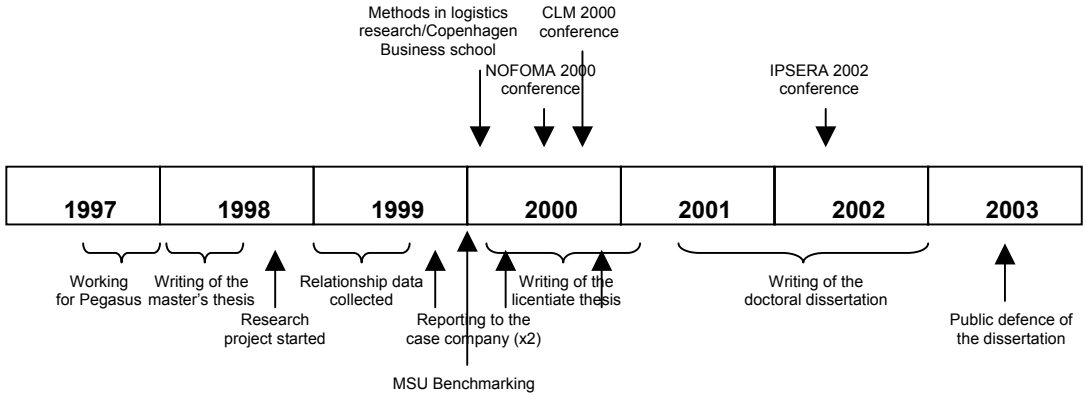

Figure 12. The research-project time line and some key events

The preparation phase of this study took place in 1997 and 1998 in form of both working for the case company and writing a Master's Thesis on the subject of global sourcing. The actual research and writing of this dissertation started in late 1998 and continued until late 2002.

[23] Conferences and tutorial papers include e.g. Seppälä (1999), Seppälä (2000a, 2000b, 2000c), Seppälä & Vafidis (2000), Ojala et al. (2000) and Seppälä (2002).

2.5 Case-study research

According to Hillebrand et al. (2001, 653), "Case research lies somewhere in the twilight zone between exploratory and testing research". A case study is a research strategy that aims at understanding the dynamics present within a single setting (Eisenhardt 1989, 534; Aaker & Day 1986, 129). This research approach is recommended when the researcher aims to understand complex social phenomena in a real-life context (Yin 1994, 3). Indeed, in business-to-business environments involving multiple contextual variables influencing organisational behaviour, individuals within a particular organisation may only see a partial picture of the entire situation, thus making single key-informant survey designs less appropriate (Johnston et al. 1999, 202). All relevant parties involved must be interviewed to obtain a more comprehensive picture of the phenomenon (Aaker – Day 1986, 129), and this is exactly how the research phenomenon under investigation has been approached in this study (for a similar approach, also in a single-case-company setting, see Buckles & Ronchetto 1996).

Typically, a number of cases between four and ten is recommended (Eisenhardt 1989, 545), which is obviously not the case here if the single case company is considered the unit of analysis. Dyer & Wilkins (1991, 614), on the other hand, argued that even a single case could be a useful unit of analysis for theory building. However, if the components and supplier relationships selected are treated as several "mini-cases", then there are in fact a suitable number of cases under investigation (i.e. in terms of the qualitative-research approach). Nevertheless, however small the sample, or whatever the area of interest, one must always try to go into organisations with a well-defined focus – to collect a specific kind of data systematically (Mintzberg 1979, 110).

Case studies typically combine different data-collection methods, e.g., interviews and archives, and the evidence may be quantitative, qualitative or both (Eisenhardt 1989, 534). Both interviews and some documented material were used in the data collection in this study, together with survey-based research methodology in the application of the MSU benchmarking tool.

As in any case research, the ever-present problem of generalisation is also an issue here. As pointed out e.g. by Hillebrand et al. (2001) achieving generalisable results equal to those of survey-based research necessitates a large number of cases and, given the resource-intensive nature of case research, demands a great amount of time and, often, money spent on conducting theory-testing multiple case research. Moreover, access to the phenomenon of interest may be an even greater problem than money or time. All in all, in the social sciences, regardless of the research approach, it is generally very difficult to formulate watertight argumentation of results, and

consequently researchers often rely on demonstrating the plausibility of their results by presenting the underlying logical argumentation (Hillebrand et al. 2001, 654).

In principle, the case-study researcher cannot make statistical generalisations. Instead, in addition to understanding the interpretations, the readers are expected to arrive at their own conclusions on the basis of the case descriptions (Stake 1998, 100). This kind of theoretical generalisation can be made, for instance, on the basis of structural similarity (i.e. the research results would be applicable to all identical situations) or by identifying the internal logic or real mechanisms (causal, teleological or other) behind the phenomenon in question, (Lukka – Kasanen 1995, 78). This type of conceptual generalisation often results in extensions to the existing theoretical frameworks.

On a general level, this study aims to provide a better understanding of the applicability of different theoretical and empirical approaches in conducting research on buyer-supplier relationships, specifically along the lines of the first research question. In addition, the rich case descriptions and the analysis that follows are expected to produce fruitful insights into the different relationships, and to demonstrate the validity of the relationship assessment model and the usefulness of the research method applied. While the single case-company setting does not allow for making statistical generalisations on the relationship results, it allows the researcher to maintain as constant the organisational elements (e.g., company structure and management style) on the buying company's side. Consequently, the development and application of the relationship assessment model was made in a more constant environment. This allows the reader to better understand the research environment and the internal logic of the case company, and to consider, as well as possibly test, the applicability of the results in another similar setting. Hillebrand et al. (2001, 653) defined this kind of theoretical generalisation as declaring results of case research valid for a larger population on the basis of both structural similarity and logical argumentation.

2.6 Methodological approach and assumptions

Arbnor & Bjerke (1997, 26) define the methodological approach as "a set of ultimate ideas about the constitution of reality, the structure of science, and so on, that is important to methods, that is, to the guiding principles for creating knowledge." Traditionally, the research problem determines the methodology and methods used to study the problem in the spirit of "fit-for-purpose". Figure 13 illustrates the range of methodological approaches and the

methodological positioning of this research within the Arbnor & Bjerke (1997) classification.

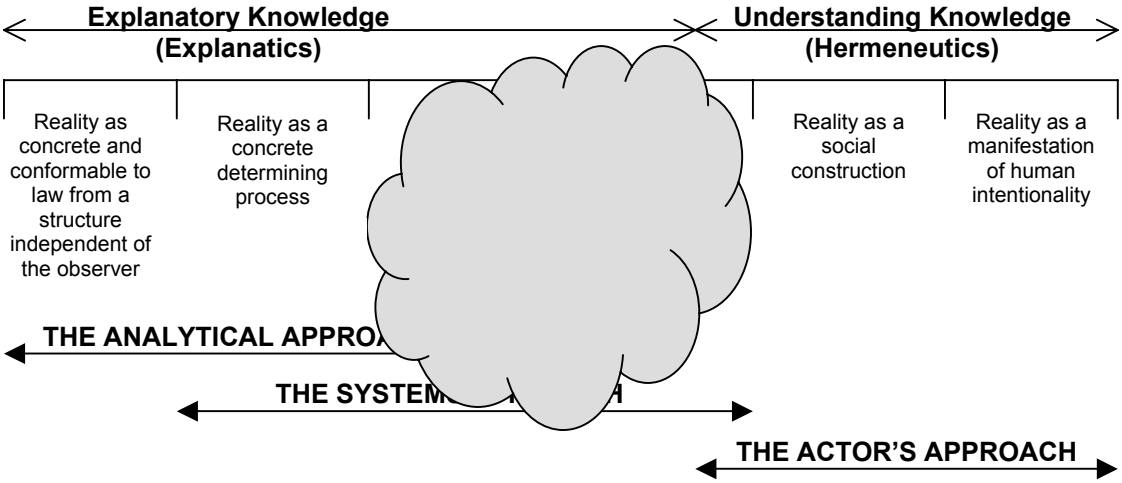

Figure 13. This study and the three methodological approaches related to paradigmatic categories (adapted from Arbnor & Bjerke 1997, 44 and 46)

According to Burrell & Morgan (1979), methodological decisions are not made in isolation, as such decisions always reflect the assumptions of the researcher about the nature of the problem itself (i.e. ontology), about the grounds of knowledge (epistemology), and about human nature. Consequently, Burrell & Morgan (1979) have argued for the convenient conceptualising of social science in terms of four sets of assumptions – ontology, epistemology, human nature and methodology. These four assumptions are interlinked, and it would be difficult to focus solely on one aspect and ignore the others if a comprehensive picture is to be given of the assumptions underlying any research. Figure 14 illustrates these four sets of assumptions on a subjectivist-objectivist dimension.

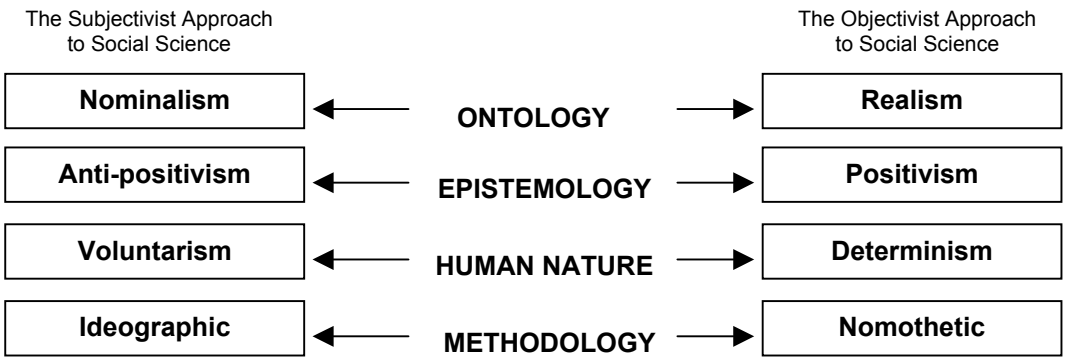

Figure 14. The subjective-objective dimension (Burrell – Morgan 1979, 3)

Ontology refers to "assumptions which concern the very essence of the phenomena under investigation". At the two extremes are nominalism and realism. The nominalist view perceives the world as a product of one's mind, whereas realists perceive the world as given and external to the individual. (Burrell – Morgan 1979, 1) In this study, the researcher's ontological view adopted neither of these extremes, but fell closer to nominalism than realism.

The second set of assumptions, closely related to ontology, is epistemological. **Epistemology** refers to assumptions about the grounds of knowledge in terms of factors such as e.g. how knowledge can be obtained and communicated. The anti-positivist view perceives knowledge as "soft", often subjective and based on experience and insights of a personal nature. At the other extreme, the positivist perspective classifies knowledge as hard and real, and transmittable in a "tangible" form. (Burrell – Morgan 1979, 1–2) The epistemological stance in this study touches neither of the extreme positions, but comes closer to the anti-positivist than the positivist view.

The **human nature** assumption refers to the relationship between human beings and their environment. This assumption is one of the cornerstones in all of the social sciences, as human beings and their lives are the object and subject of inquiry. At the voluntarist end, 'free will' is the dominant characteristic, and humans have the 'free will' to control their environment. The deterministic perspective perceives humans as controlled by their environment, and their behaviour as a product of their environment. (Burrell – Morgan 1979, 2) As in most social-scientific research, the human-nature assumption in this research lies between the two extremes, but is closer to the voluntarist view.

The wide range of **methodologies** is heavily influenced by the assumptions made concerning human nature and both ontological and epistemological aspects of social science. Some methodologies at the "softer" extreme stress the importance of individuals' subjective experiences in the creation of the social world. The focus is on understanding the ways in which they create, interpret and modify the world of which they are a part. In Arbnor & Bjerke's (1997) classification, these methodologies lie at the hermeneutical end of the systems approach, and in the area of the actor's approach. At the other extreme is the stereotypical "natural scientist" seeking nomothetic relationships in the object under study. The world is hard and external, and reality is objective; research is often focused on identifying the various elements and the relationship between them in a measurable way. (Burrell – Morgan 1979, 2–3) These methodologies lie at the nomothetic end of the systems approach and in the area of the analytical approach. The two positions on the methodological ideographic-nomothetic dimension are commonly considered extreme opposites. Here, the methodological assumptions are marginally towards the

"softer" end of the continuum, with the emphasis on understanding and explaining the phenomena under study. In conclusion, the philosophical assumptions in this research are closer to the subjectivist than the objectivist end of the subjective-objective spectrum.

2.7 Research method

Arbnor & Bjerke (1997, 9) define research methods "as the guiding principle for the creation of knowledge." One underlying theme in this study is to approach the research problems from the perspective of business world reality and of the case organisation in question. "Measuring in the real organisational terms means measuring things that really happen in organisations (and between organisations) as they experience them" (Mintzberg 1979, 112). This statement would appear to support the selection of qualitative research methods, and to encourage the adoption of a "hands-on" research approach to the research problems addressed in this study. Moreover, the research problem and the phenomena under study are such that, in order to make the research credible, the researcher had to get close to the object of the study. The primary research method is the semi-structured, theme-guided, face-to-face interview (see Appendix 1). The figure below illustrates the different case-company functions and the supplier organisation in relation to the three supply chain relationship perspectives.

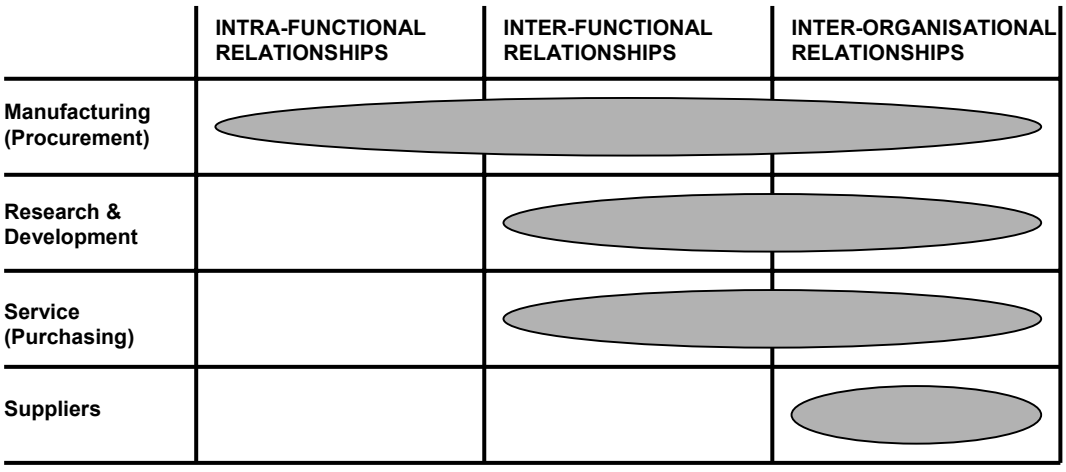

Figure 15. The perspective of supply chain relationships under investigation in this study

The Manufacturing (Procurement) organisation is a matrix organisation operating in multiple locations, which naturally involves some intra-functional

coordination. This functional area is also in frequent contact with the suppliers and other case-company functions.

The Pegasus Research & Development business area is a relatively centralised company operation with most of its activities in one single location. In fact, most of the R&D Component Experts are stationed in Factory A, and all the informants involved in this study are based there. The R&D organisation is in direct contact with other case-company functions and many of its suppliers.

The Pegasus Service (Purchasing) operations are also relatively centralised in respective product factory locations, as each service location is responsible for the service and aftersales for their specific factory product. Service is also in direct contact with other case-company functions and many of the suppliers.

Good access was provided to the case company and its inter-organisational and both inter- and intra-functional relationships. Similar access was not granted to the supplier organisations, however. Therefore, the supplier's relationships are only investigated on the inter-organisational level. It should also be borne in mind that there are no other relationships between Pegasus and each supplier outside the scope of this study.

The research method selected for this study is qualitative[24]. The other alternative would naturally have been quantitative. At times, discussion about the qualities of each method and the relationship between the two strategies has been very colourful, to say the least. Töttö (1999), for example, contests the fairly common assumption that qualitative research produces "deeper" insights into problems than "hard and superficial" quantitative methods. In fact, he argues that these two approaches are more complementary than competitive, with their own areas of applicability and "fit-for-purpose".

Research quality is naturally an issue linked to the research method. One way to increase the quality of research is to use triangulation, a combination of multiple methods, empirical materials and observation in a single study (Denzin – Lincoln 1998, 4). Janesick (1998, 46–47) categorised triangulation, on the basis of Denzin's work (1978) on the subject, in five different types:

1) Data triangulation: the use of multiple sources of data
2) Researcher triangulation: the use of multiple researchers
3) Theory triangulation: the use of multiple theories in data evaluation
4) Methodological triangulation: the use of multiple methods
5) Interdisciplinary triangulation: the use of multiple disciplines

[24] For a similar research method, see e.g. Tuten & Urban (2001).

The first four types of triangulation are based on Denzin (1978). Interdisciplinary triangulation, a type suggested by Janesick (1998), refers to research that concerns several scientific disciplines simultaneously.

According to Kumar et al. (1993), much inter-organisational research still relies on using single informants. Typical quantitative large-scale investigations into inter-organisational relationships select informants on the basis of supposed knowledge about the issues being researched, and a willingness to participate in the study (Kumar et al. 1993).

Kumar et al. (1993) also identified two primary problems in using multiple informants[25]. The first is in selecting the right key informants, who are often chosen on the basis of their formal roles in the organisation. Naturally, response errors are likely to be higher among informants who are not closely associated with the phenomenon under study. The second problem is the difficulty associated with perceptual agreement between respondents. In more practical terms, this problem is evident when there are considerable differences between informant perceptions.

The respondents in this study were initially selected on the basis of their formal roles in the organisation, but their formal role (e.g. strategic purchaser) was very closely associated with the phenomenon under study (i.e. the buyer-supplier relationships in inter-organisational, inter-functional and inter-functional perspectives). No attempt was made to make the informants' perception differences disappear, and in fact they became more visible and transparent in the investigation of inter- and intra-functional relationships. However, in cases in which there were significant differences between the responses, the informant who was most active in the relationship was considered the most knowledgeable about the relationship characteristics.

In terms of **data triangulation,** this research relies not only on multiple data sources, but also on the large number of informants interviewed. The basic unit of analysis is the buyer–supplier relationship from all of the three relationship perspectives. In practice, this means that there were multiple parties involved in each of the relationships, and all Pegasus and supplier representatives who were in active contact with each other were interviewed. On average, 10 informants were interviewed for any single buyer-supplier relationship from all three relationship perspectives.

"The snowballing technique" was used to identify all of the key persons involved in the buyer-supplier relationships. First a key player in the sourcing operations and relationships was identified and asked to name other key informants, who were in turn asked to identify their key counterparts. This cycle was repeated until no new key-role players were recognised (for a

[25] The Kumar et al. (1993) article is based on quantitative research, yet its conclusions could be considered equally applicable in conducting qualitative research.

similar approach, see e.g., Spekman & Gronhaug 1986 and Buckles & Ronchetto 1996).

The research was conducted by a single researcher from beginning to end; thus **researcher triangulation** was not applied, and this could naturally be interpreted as a limiting factor in terms of reliability. The research proved to be rather costly (e.g., extensive travelling costs). One must naturally then consider whether the added value resulting from using multiple researchers would justify the additional costs. Say the research costs would have doubled if two researchers had been used, it is doubtful whether the research reliability would have increased in a similar proportion: in any case, researcher triangulation was not applied in this study. On the other hand, having a single researcher might also have contributed to the internal validity of the study, given that the alternative would have involved several researchers with their own non-overlapping research areas. Even if there is researcher bias, it is at least constant across all of the data.

Despite the fact that the initial stages of this research were not very theory driven, **theoretical triangulation** exists, although indirectly. Three theoretical approaches are presented and evaluated in terms of their suitability for buyer-supplier research, and reflected against the relationship-research model. It is these relationship components, and not the theoretical approaches themselves, that form the primary analysis framework in this study.

Methodologically, the research relied primarily on a qualitative research approach. Extensive interviews with multiple informants were conducted to determine relationship component characteristics in each of the three relationship perspectives. A quantitative research approach was also applied by using the 21st Century Supply Chain Benchmarking Tool (see Bowersox et al. 1999) to measure the extent of supply chain integration. The supply chain benchmarking tool was used to determine what kind of picture of the focal area of research would emerge using alternative research methodology. In other words, **methodological triangulation** was practised in this study. Finally, **interdisciplinary triangulation** was not applied, as the research was conducted by a single researcher with a business research background.

3 THEORETICAL APPROACHES TO RESEARCH ON BUYER-SUPPLIER RELATIONSHIPS

3.1 Theoretical approaches

This chapter describes some theoretical approaches to research on inter-organisational exchange and buyer-supplier relationships in light of this study[26]. The chapter begins with a presentation of the key characteristics of transaction cost theory, and continues with a review of the relationship marketing/purchasing approach in the context of industrial buyer-supplier relationships. Finally the IMP-group/industrial network approach is discussed. Figure 16 below illustrates the inter-relationships and areas of emphasis in the study, which are used as a basis of assessment for each of the theoretical approaches discussed in this chapter.

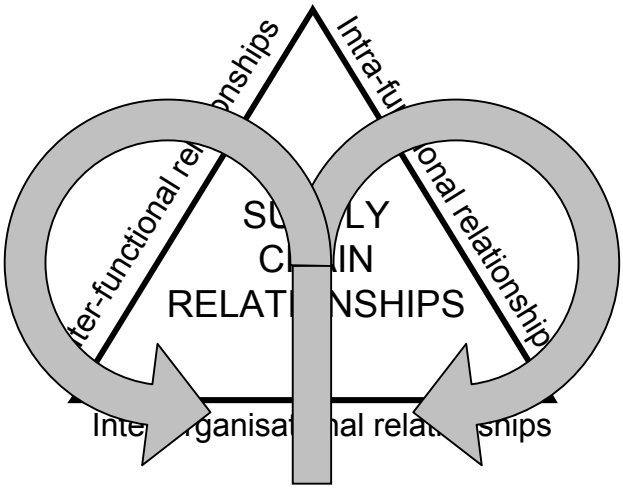

Figure 16. The focal research area – the inter-organisational relationship dimension – in relation to inter- and intra-functional relationship perspectives

Inter-organisational relationships are in the focal area of this study. The other relationship perspectives are discussed specifically in relation to the inter-organisational relationships.

[26] To a great extent, this section both summarises and continues the work started in Seppälä (2001).

3.2 Transaction cost theory

Transaction cost theory has its roots in the new institutional economics that originated as criticism of neo-classical economic theory. Neo-classical economic theory is mainly concerned with markets (supply and demand) in which firms are outside the area of interest and are considered to be "black boxes" of inputs and outputs (Casson 1987, 40). Despite the fact that the transaction cost approach, in its original form, has for the most part been attributed to Oliver E. Williamson, it has commonly been recognised that it owes a great deal to other researchers, some of whose conclusions (according to Ghoshal – Moral 1996, 16) differ significantly from those of Williamson. These include Ronald H. Coase with his seminal work on the theory of the firm (see e.g., Coase 1937), and Douglass C. North (e.g., 1990) and John R. Commons (1934) on institutional economics.

In short, transaction cost theory is an interdisciplinary approach combining aspects drawn from law, economics and organisational studies (Williamson 1997, 1). In what follows, however, transaction cost analysis refers specifically to the transaction cost approach (later also referred to as TCA), and does not explore other areas of its applicability, e.g., in the context of society as a whole.

3.2.1 Transaction costs

The basic unit of analysis in the transaction cost approach is the transaction (Williamson 1985, 41; 1997,6): transaction costs arise in situations in which markets are imperfect – "market failure" thus becomes a problem. Coase (1937) defined transaction costs as the cost of using the price mechanism, whereas Williamson (1985, 19) relates them to a phenomenon in physics: friction in physical systems could be seen as equivalent to economic transaction costs. Finally, North (1997, 149) states, "an economic definition of transaction costs is the cost of measuring what is being exchanged and enforcing agreements". All three definitions make a distinction between production (for example, price) and transaction costs[27].

Firms aim to economise on total costs, which are the sum of both production (including governance) and transaction costs (Williamson 1985,

[27] In the daily language of business, transaction costs are often not associated with the above-mentioned academic definitions. In day-to-day business, they are often considered to include transportation and quality-inspection costs, costs associated with the execution of the transactions themselves.

61). In procurement operations, the price of a particular commodity could be categorised as a production cost, while the cost of buying the product – including defining the demand specification, the supplier selection and the contracting – make up transaction costs. The trade-off between production and transaction costs could clearly be used as the basis for make-or-buy decision-making in any organisation. Transaction costs may be further classified into ex ante and ex post costs: costs before and after the transaction (Kock 1992, 3). Ex ante costs include those associated with actions to prevent opportunism in the form of large contracts (including the use of contract lawyers), for example, while ex post costs include lawyers' fees in contract-enforcement situations.

In the light of transaction cost theory, firms are autonomous entities that interact via transactions (Williamson 1975, 8). Markets and hierarchies are positioned at the opposite ends of the market-structure spectrum, with intermediate forms – such as long-term contracting, joint ventures and franchising – in between (Williamson 1985, 83). The transaction cost approach is an attempt to explain the institutional form (i.e. governance structure) of these transactions (Johanson – Mattsson 1987, 41).

According to Williamson (1975, 8–9), "A symmetrical analysis of trading thus requires that we acknowledge the transactional limits of internal organisation as well as the sources of market failure". Basic to such a comparative analysis of markets and hierarchies is the realisation that, "Just as market structure matters in assessing the efficacy of trades in the market place, so likewise does internal structure matter in assessing internal organisation" (Williamson 1975, 9). In fact, transaction cost theory covers different organisational forms for companies ranging from e.g. the unitary (U-form) via the holding company (H-form) to the multidivisional (M-form) (see e.g., Williamson 1975, 152–153). However, despite extensive discussions on the characteristics and both the pros and cons associated with each of these organisational forms (see e.g., Williamson 1975 and 1985), transaction cost theory offers very few concepts and tools for understanding inter-functional and intra-functional relationships within different organisational forms in relation to the inter-organisational relationship perspective.

By definition, market imperfections, and the market failure caused by them, do not exist in perfect market conditions (Johanson – Mattsson 1987, 41). According to the original transaction cost framework, transaction costs do not exist in vertically integrated firms in which all economic operations are performed within the same organisational structure. However, the limiting factor in the vertically integrated company is not the transaction cost, but the internal structure of the organisation and e.g. decreasing returns on the entrepreneurial function (Coase 1937). In a nutshell, the transaction cost

approach considers the efficiency implications associated with the adoption of alternative governance mechanisms (Heide 1994, 73).

3.2.2 Sources of transaction costs

According to Williamson (1975, 40), transaction costs originate from factors that do not exist – at least in principle – in the "perfect" hierarchy (the vertically integrated company). Naturally, one must recognise that there are also costs involved in performing transactions internally in a company, arising from factors such as decreasing returns on the entrepreneur function, i.e. the increasing costs of organising an additional transaction (Coase 1937). Williamson (1975, 40) identified four different human and environmental factors that lead to transaction costs.

Bounded rationality is a concept that is closely linked to the perfect market precondition of perfect knowledge. In contracting situations (ex ante), rationality is bounded and therefore it is impossible to include all relevant information in the actual contract (Williamson 1985, 29): owing to limited rationality, one cannot always identify best behaviour (Ghoshal – Moran 1996, 26). Since all parties in the market are not equally informed about the market situation, some buyers or sellers may resort to opportunistic behaviour in their dealings with other parties. **Opportunistic behaviour**, or the pursuit of self-interest (with guile), also increases transaction costs, as possible opportunism must be taken into account in transaction and contracting situations (ex ante) (Williamson 1985, 29 and 44). Opportunism is a stronger form (i.e. with guile) of the self-interest motivation common to economics and other social science disciplines, and it is a key concept in Williamson's analysis of transaction cost logic (Ghoshal – Moran 1996, 17). In transaction cost analysis, "the implications of trusting behaviour in designing governance mechanisms are generally ignored" (Ring – Van de Ven 1992, 484). Bounded rationality and opportunistic behaviour are the primary causes of **uncertainty**. Particularly in contracting situations (ex ante), attempts to significantly reduce (ex post) uncertainty are costly – if not totally unrealistic (Williamson 1985, 70): for example, the use of legal assistance (e.g., contract lawyers) is often costly. The fourth factor, which relates to the existence of transaction costs, is **small numbers**. Small numbers – of actors in the market, for example – do not guarantee perfect competition, as both buyers and sellers have limited options in replacing each other in a transaction (Williamson 1975, 27). Consequently, a small number of actors have control over markets, and thus "the invisible hand" can be identified, resulting in a situation in which all parties in the market are no longer "price takers".

In theoretical terms, the appropriate governance mechanism for a particular transaction is to be found at the margin, where the costs of organising a transaction in a more entrepreneurial form equals the cost of organising this same transaction in a more market-governed form (see e.g., Coase 1937).

3.2.3 Asset specificity

One of the basic elements of Williamson's transaction cost analysis in different governance mechanisms is the concept of asset specificity, defined as a measure of asset redeployability and consequent "sunk costs" (Williamson 1997, 6). Transaction cost theory suggests that transactions involving particular skills or services that have high asset specificity, and thus are well established and "sunk" within the standard operating procedures and human assets of the firm, are to be performed internally. Activities involving low asset specificity are then to be performed externally in the market (Cox 1996, 60).

Cox (1996) argues that Williamson's original definition of asset specificity fails to explain a firm's decision-making with respect to internal and external activities. According to Cox, asset specificity should be defined in terms of the relation of the assets to the company's core competencies. In other words, "the more a particular skill or knowledge base contributes to the maintenance, or creation, of profitability, the more it should be regarded as of high asset specificity" (Cox 1996, 61).

Asset specificity may also be used in relational contracting to secure goal congruence and relationship continuation. In situations in which both the buyer and the supplier make relationship-specific investments (i.e. increase asset specificity) in their respective companies, both parties should be reluctant to terminate the exchange relationships, since the costs associated with these investments cannot be (fully) recovered outside of the relationships in question (McDonald 1999).

Williamson argues that transactions that are supported by transaction-specific assets (i.e. high asset specificity) will often lead to "locked-in" autonomous trading, and eventually to the vertical integration of unified ownership (Williamson 1985, 53)[28]. This statement, however, is in contradiction to the comparative advantage principle developed by the 19th-century economist David Ricardo (Begg et al. 1991, 53). In fact, in a situation characterised by transaction-specific investments and high specialisation, the

[28] Williamson defines asset specificity as a measure of asset redeployability (1997, 6); in other words, the less redeployable the asset is, the more specific it is. Transaction-specific assets are defined as durable and nontrivial assets, which give rise to bilateral dependency (Williamson 1997, 10).

comparative advantage principle would not suggest the vertical integration of unified ownership as the ultimate governance mechanism. Instead it is rather believed to be more economical to perform these activities in independently operating entities that are efficiently organised and managed, and which have world-class competence (Webster 1992, 9).

According to transaction cost theory, economic organisations aim to economise on production (including governance) and transaction costs in an environment characterised by bounded rationality and opportunism (Williamson 1985, 61). In other words, organisations are assumed to prefer vertical integration to market-based transactions in situations that involve highly asset-specific transactions (see e.g., Williamson 1985, 53). One could perhaps argue that Williamson's transaction cost theory and its practical implications fail to produce optimal transactional forms in fast-moving industries. In today's highly competitive and rapidly-changing market place, firms would appear to prefer flexibility and agility to minimised transaction costs: in other words, market-based relationships appear to be preferred to hierarchies.

3.2.4 Concluding remarks on transaction cost theory

The above description of the original transaction cost theory framework has afforded but a brief insight into this already paradigmatic theory, yet some comments about its applicability may be made, both in general terms and in reference to this study.

The focus in Williamson's model is upon conditions of stable equilibrium – mainly markets and hierarchies (Ghoshal – Moran 1996, 40; Johanson – Mattsson 1987, 43). Williamson (1997, 7) argues that transaction economics is "always and everywhere" an exercise of comparative institutional analysis – between different organisational forms, which in his original analysis covers only the two polar forms of governance, i.e. markets and hierarchies. Indeed, in markets in which the characteristics of transactions determine which autonomous parties are temporarily paired in exchange, the transaction may be an appropriate unit of analysis (Ghoshal – Moran 1996, 37). Transaction cost theory is also a widely used framework in supply chain research (see e.g., Ellram – Feitzinger 1997).

The original transaction cost theory has been criticised for not taking into account the "social structures" in which transactions are embedded (Granovetter 1985), and for over-emphasising the capabilities of hierarchical mechanisms to govern transactions (Maitland et al. 1985). In fact, the major challenge for transaction cost analysis is its inability to explain complex

relational exchange forms (Ring – Van de Ven 1992, 484). Evidently, therefore, transaction cost theory would appear to be an insufficient approach for explaining relational exchange without introducing relational properties into its original framework (Möller 1994, 364). Consequently, the more modern form of the framework has acknowledged the existence of bilateral relations (Heide 1994, 74), and has also been extended from the analysis of discrete transactions (and subsequent choices of governance mechanisms) to the taking into account of prior transactions and choices of governance mechanisms (Argyres – Liebeskind 1999; Ring – Van de Ven 1992).

The basic unit of analysis in transaction cost theory is the transaction (Williamson 1985, 41), which forms the foundation of any buyer-seller relationship. Since this study is mostly concerned with relatively developed industrial buyer-supplier relationships, the transaction as such is hardly an appropriate (i.e. sufficient) unit of analysis. It has also been argued that "Though the transaction cost approach is highly relevant for the study of economic relationships, business relationships also include social aspects. Hence to analyse the totality of the relationships, another approach is needed" (Hallén et al. 1991, 31).

Furthermore, according to the original transaction cost framework, long-lasting relationships are a temporary phenomenon of a transitory nature, destined to dissolve or to become vertically integrated into a single organisational unit (Johanson – Mattsson 1987, 44–45). The day-to-day business reality, however, has demonstrated that relationships may be maintained for extended periods of time without needing to merge vertically into a single organisational unit (e.g., Johanson – Mattsson 1987, 46).

In conclusion, transaction cost theory is believed to have limited potential in the analysis of developed relationships, although it is believed to have applicability in transactions performed at either the market or the hierarchy end of the relationship continuum. It is also clearly more focused on transactions than on relationships, but it has some areas of application in the inter-organisational relationship perspective, especially near the market and hierarchy ends of the relationship-type continuum. However, the transaction cost theory is not concerned with inter- and intra-functional relationships, which limits its applicability to these perspectives in this study.

3.3 The relationship marketing/purchasing approach

At first it may appear puzzling to present the relationship marketing approach as one alternative theoretical framework for a study of procurement activities and sourcing relationships that mainly takes the buyer's perspective. However,

as will be demonstrated later in this section, there is convergence taking place between, on one hand, typical relationship marketing concepts and activities and, on the other, supply chain management, which is an activity often primarily associated with logistics and supply side operations. Grönroos (2000, 114) has even used the term ’relationship buying’ in reference to the relational approach in purchasing, while Mudambi & McDowell Mudambi (1995), for example, have applied the relationship marketing approach in research on buyer-supplier relationships.

‘Relationship marketing’ and ‘relationship purchasing’ are very similar activities, both involving partner selection, relationship management and evaluation, for example. In fact, the relational approach to buyer-supplier interaction could be referred to as either relationship marketing or purchasing (or both), depending on the perspective of the investigation. Leenders & Blenkhorn (1988) even introduced the concept ‘reverse marketing’ in reference to relational buying activities.

Moreover, the supplier cannot engage in successful relationship marketing activities with a particular customer without having the customer engage in comparable operations to secure similar benefits. Consequently, it is not difficult to agree with Håkansson (1982, 1), who contests the separation of industrial marketing and purchasing into two distinct activities.

3.3.1 Relationship marketing research

It has been argued that relationship marketing has its roots in the shift[29] in approach from “competition and conflict to mutual co-operation and choice independence to mutual interdependence” (Sheth – Parvatiyar 2000, 122). However, it was not until the 1980’s that marketers began to consider customer satisfaction beyond transactional aspects of marketing, and to extend marketing efforts to relational aspects (Parvatiyar – Sheth 2000, 10). Prior to this, the initial steps in the direction of relationship marketing research had been taken in the area of service marketing (Mattsson 1997, 451).

Theories from a range of disciplines, such as economics, law, political science and sociology, have also been applied in relationship marketing (Parvatiyar – Sheth 2000, 11), among which are e.g. resource dependency theory, social exchange theory and organisational economics (Mattsson 1997, 452). Möller & Halinen (2000, 32–33) have also identified some theoretical antecedents of relationship marketing, primarily in the context of marketing:

[29] Mattsson (1997, 456), however, argues: “When relationship marketing (RM) researchers talk about RM as a paradigmatic shift in marketing it is thus not very clear what the shift is from and even less clear what the shift is to.”

these research directions include business marketing (interaction and networks including early dyadic relationships), the political-economy framework and channel relationships using transaction cost or social exchange theory. In addition Möller (1994, 348–349) and Möller & Halinen (2000, 32–33) also identified marketing channels, service marketing and database & direct marketing research as predecessors of relationship marketing, while Mattsson (1997) put forward similar thoughts on the antecedents of the relationship marketing approach. The contributions of each of these research traditions are not identified here[30].

Buyer-seller relationships are the core issue in relationship marketing, and in the whole marketing discipline (Möller – Halinen 2000, 31). Parvatiyar & Sheth (2000, 6–7) argue, "The core theme of all relationship marketing perspectives and definitions is a focus on co-operative and collaborative relationships (more than standard market relationships, yet short of acquisitions) between the firm and its customers and/or other market actors". In other words, these relationships are founded on mutual co-operation and benefit (i.e. involving both the buyer and the supplier). Consequently, the relationship marketing approach is also believed to be applicable to studies focusing on procurement and buyer-supplier relationships, even if primarily investigated from the buyer's perspective. In fact, supply chain management – an activity associated with both downstream and upstream operations – is becoming relationship management (Christopher – Ryals 1999, 7), while Parvatiyar & Sheth (2000, 29) also report that relationship marketing has been converging with e.g. logistics and supply chain integration.

3.3.2 Relationship marketing defined

Parvatiyar & Sheth (2000, 9) define relationship marketing "as an ongoing process of engaging in co-operative and collaborative activities and programs with immediate and end user customers to create mutual economic value at reduced cost". This definition focuses only on the customer, however, and thus has no link to other supply chain partners. On the basis of this definition, it appears as if the relationship marketing approach is hardly an appropriate one for studying buyer-supplier relationships from the buyer's perspective.

However, Parvatiyar & Sheth (2000, 8) claimed earlier that any such relationships that enhance or facilitate customer relationships are in a valid domain of relationship marketing. If this argument is accepted, then upstream relationships are also a valid domain for relationship marketing, since

[30] For the key contributors in each of the fields of research mentioned, see e.g., Möller 1994, Mattsson 1997, Möller & Halinen 2000 and Parvatiyar & Sheth 2000.

development efforts made in upstream relationships also very often directly or indirectly enhance or facilitate downstream customer relationships. Consequently, broader definitions of relationship marketing have also been formulated.

"Relationship marketing refers to all marketing activities directed towards establishing, developing, and maintaining successful relational exchange" (Morgan – Hunt 1994, 21–22). This very broad definition makes no mention of the customer (specifically), and emphasises successful relational exchange with all stakeholders, including suppliers. Morgan & Hunt's definition has been criticised, however, for being too broad in scope, since it may also include relationships that are outside the domain of marketing (Parvatiyar – Sheth 2000, 7).

If the broad definition of relationship marketing is compared with one of the many definitions of supply chain management[31] (SCM), there appear to be great similarities between the two concepts. "Supply chain management is the integration of key business processes from end user through original suppliers that provide products, services, and information that add value for customers and other stakeholders" (The Global Supply Chain Forum's definition of supply chain management in Lambert & Cooper 2000, 66).

The broad definitions of both relationship marketing and supply chain management identify (at least implicitly) a much wider range of relationships than simply those at the customer interface, and successful relational exchange could be understood in broad terms as a value-adding activity.

In response to criticism of this broadness of definition, it could be argued that marketing as a concept and activity does not only apply to the marketing department, and that it is in everybody's interest to focus on customer needs. In fact, the broader view of relationship marketing has been argued to involve a shift from functionally-based to cross-functional marketing, where marketing activities take place in cross-functional processes as opposed to organisational functions (Payne 2000, 47). It also recognises the inter-functional and intra-functional perspectives (e.g., internal marketing: see e.g., Payne 2000 57) on marketing/purchasing relationships.

Customer needs are also an essential aspect, if not the key element, of supply chain management. (Lambert – Cooper 2000, 67) In fact, this would suggest that relationship marketing (the broad definition) and supply chain management are very similar concepts, yet often applied in different contexts. Mattsson (1997, 455) also implicitly supports the adoption of the broader definition of relationship marketing by arguing that in its narrow form, it is simply a new development in the marketing-mix approach to marketing.

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[31] For a comprehensive discussion on the supply chain management concept and its definitions, see e.g., Otto – Kotzab (1999) and Tan (2000).

The focus in this thesis is on dyadic, market-based relationship marketing. These relationships are characterised by a small number of actors, who are mutually interdependent through the existence of relatively heterogeneous resource ties. Any of the actors may be active (as opposed to only the suppliers) and individual transactions are mere episodes in a long-term relationship. The emphasis is on resource, social and inter-functional relationships (Möller – Halinen 2000, 40).

Möller & Halinen (2000, 34) argue that relationship marketing is not yet a developed theory (see also Mattsson 1997, 455), and find it not yet feasible to attempt to unify the different approaches in a "general theory of relationship marketing". Möller & Halinen (2000, 44) also suggest that each relationship marketing tradition[32] has its area of applicability very much in the spirit of "fit-for-purpose". In conclusion, however, it is not difficult to agree with Reid & Plank (2000, 58): "In general, what we mean by relationship marketing is somewhat mixed", which is perhaps an indication of the underdeveloped nature of this discipline.

3.3.3 Potential partner selection

The relationship marketing approach has its focus on relational exchange and does not really concern transactional exchanges. It is essential in relational exchange to identify potential partners for relationship marketing/purchasing activities. The key factors in determining potential partners are risk (i.e. uncertainty) and value added by the supplier to the buyer's product. Wilson (1995, 340) argues that reputation and trustworthiness are added to the partner selection measures when the potential partner is an untested commodity. In contrast, research by Doney & Cannon (1997, 46) indicated that trust (in the supplier) had little or no relevance for buyers in supplier selection. Although it is argued that partner selection in marketing does involve the evaluation of trust and other "intangible" measures (Wilson 1995), it appears as if buyers base their supplier selection on hard objective measures related to the product offered (e.g., price and delivery reliability) rather than to the more subjective measures of e.g. the relationship characteristics (Doney – Cannon 1997).

Bensaou (1999, 43) also identified three factors that determine a suitable relationship, particularly in relationship purchasing. The first concerns the **characteristics of the product exchanged** and its underlying technology. Basically, this analysis is very similar to that of Cox (1996), and to aspects linked to transaction cost theory. The second aspect is the **competitive**

[32] For a more thorough discussion on current descriptions and definitions of relationship marketing, see e.g., Parvatiyar & Sheth (2000).

conditions in the upstream market, and this is linked to the availability of alternative suppliers: for example, when there are a substantial number of suppliers (for simple components), it is feasible to conduct transactions in market conditions and thus to apply a more arm's-length type of approach with suppliers. The third factor is linked to the **capabilities of the suppliers in the marketplace**, and this issue is also closely linked to the number of suppliers. Often, the more specific the assets involved are, the fewer the number of capable suppliers, and more collaborative relationship types would thus be appropriate. Unlike Bensaou (1999), Wilson (1995) does not emphasise the "strategic fit" of both the buyer and the supplier in his analysis, which would appear to be an essential element in co-operative relationships.

On a more tangible level, Anderson & Narus (1991, 97)[33] suggest that commodity types of items should be exchanged in more transactional exchange relationships, in contrast with more sophisticated products which are more appropriate for collaborative exchange relationships. In procurement terms, companies should think more strategically about their supplier base and supplier management practices, and should not adopt a "one-size-fits-all" strategy for supplier management (see e.g., Kraljic 1983; Dyer et al. 1998; Cox 1996). Dyer et al. (1998) suggest that suppliers should be segmented into suppliers of strategic inputs (based on core competencies) and non-strategic inputs. This has already been recognised in marketing literature in the segmenting of customer relationships and in the application of respective marketing strategies (see e.g., Anderson – Narus 1991; Jackson 1985).

Companies must be able to develop skills in managing both relational and transactional supply chain partners. This dual approach has its limits, since at times a company may find itself defending a current partner, which in the light of current and future business should be replaced by an alternative supplier. Furthermore, a different kind of daily routine must be developed for handling both relational and transactional business partner relationships, and this may lead to internal confusion in the buying company. Nevertheless, it is argued that this kind of dual approach to sourcing operations is of benefit to the buying company (Mitchell – Singh 1996, 191).

3.3.4 Concluding remarks on the relationship marketing approach

Relationship marketing is by no means a philanthropic activity, and it is based on two basic economic arguments. First, it is more costly to win new

[33] Anderson & Narus (1991) also formulated a six-step approach according to which companies select the right partners for their relationship marketing efforts. With minor modifications these steps are equally applicable to partner selection in relationship purchasing.

customers than to retain existing ones, and second, the longer the association between the company and the customer, the more profitable is the relationship for the firm (Buttle 1996a, 5) (and vice-versa?). Again, if one assumes the broad definition of relationship marketing, these two statements could also be made to apply in upstream relationships between the buyer and the supplier. Both arguments can, in principle, be justified by the existence of transaction costs and the reducing effect that a long-term relationship has on them. Buttle (1996a, 7) even argues that transaction costs do not exist in long-term relationships. This statement is somewhat questionable, since companies – even if they are engaged in developed long-term (e.g., partnership) relationships – must maintain a perception of the market situation if they are to be aware of alternative market possibilities, for example with respect to competition. Activities associated with e.g. gaining market knowledge are indeed transaction costs. Nevertheless, relationship marketers propose that well-maintained buyer-supplier relationships (i.e. interdependent relationships) reduce transaction costs and generate higher quality, while keeping governance costs lower than in transactional markets (Heide & John 1992, Mudambi & McDowell Mudambi 1995 and Sheth & Parvatiyar 2000).

It has been argued that relationship marketing is by no means transactional marketing in disguise, but a clear change in marketing practice (Buttle 1996a, 13). This is analogous to the situation with partnerships on the upstream side of the supply chain. It may also be the case that the adoption of both the upstream (partnership) and downstream (relationship marketing) concepts has so far been much more limited than has been thought, and more a question of "lip-service" rather than serious commitment to supply chain relationships.

Buttle (1996a, 13) argues that the more experienced companies know that not all customers are worth retaining. The same thing applies to the other side of the dyad, as companies attempt to identify their supply chain partners and reduce the number of their (first-tier) suppliers (Spekman 1988). In fact, it is refreshing to see that congruence exists at both ends of the supply chain.

Customer lifetime value is also a key concept in relationship marketing (Buttle 1996b, 190), and a similar type of analysis is equally applicable on the supply side as well. Lifetime-value analysis puts great emphasis on supplier selection, as mistakes made at the early stage are difficult if not impossible to rectify, and costs are not easily recovered. In the supply context, 'life-time cost' – in addition to 'life-time value' – would perhaps be more appropriate in describing the long-term impact of any supplier.

Despite the fact that relationship marketing and relationship purchasing are very similar activities, there is still room for development in this area. Mattsson (1997, 458) argues that relationship marketing research would benefit from further considerations of the buyer's point of view, and Grönroos

(2000, 114), for example, already used the term ‘relationship buying’ when referring to the relational approach in purchasing. One of the key questions in his analysis is, in fact, the long-term, lifetime cost aspect, and how to incorporate this into purchasing decision-making (e.g., supplier selection). The relationship marketing approach in its dyadic form also, for the most part, fails to recognise the “embedded nature” (see e.g., Granovetter 1985) of individual relationships in the surrounding relationships (Mattsson 1997, 452–453).

In conclusion, the relationship marketing (or purchasing) approach in its broad form is believed to be highly applicable in relationships involving bilateral governance. The focus is on dyadic relationships, which would appear to be a sufficient unit of analysis for investigating buyer-supplier relationships from an inter-organisational perspective. The inter-functional and intra-functional perspectives are not equally well served by this approach.

However, despite the fact that the focus is on the relationship between the buyer and the supplier, the relationship marketing/purchasing approach should not disregard individual transactions, which form the core of any buyer-seller relationship. In fact, the central issue in business marketing is the examination of purchase transactions in the context of buyer-supplier relationships (Wilson – Mummalaneni 1986, 53). Consequently, “Although some proponents of transaction cost economics and relationship marketing may not want to admit it, the two schools of thought need not be in opposition to each other. Indeed, a synthesis of several key tenets support the development of closer buyer-supplier relationships as a rational strategy” (Mudambi – McDowell Mudambi 1995, 430).

3.4 The IMP-group/Industrial network approach

It has been argued that competition has shifted from the firm level to the network level (or the supply chain level) (see e.g., Hunt – Morgan 1994; Christopher 1992). As a consequence, it has been suggested that “The network of buyer-seller relationships rather than the product market becomes the relevant unit of analysis” (Håkansson – Snehota 2000, 87). Thorelli (1986, 47) even defines relationship marketing – the approach discussed in the previous section – as part of a developing ‘network paradigm’, which recognises that global competition will take place between networks of firms. The IMP research group has focused its research interest on dyadic relationships and, further, on networks of relationships.

The IMP (International/Industrial Marketing and Purchasing) group was formed in the mid-1970’s by researchers from Sweden, the UK and Germany with research interests in industrial markets. At first, the research object was

relationships and interaction, and it was not until later that the network emerged as a focal concept of analysis (Mattson 1997, 451). Early IMP work centred on distinct research projects (which were later named IMP1 and IMP2), but has now evolved into a "research community" connecting various streams of research on different topics (e.g., marketing and purchasing) and involving different methodologies (Håkansson – Snehota 2000, 71–73). Although the IMP-group has its origins in the marketing discipline, it also has several other antecedents of scientific inspiration, including e.g. transaction cost theory, organisation theory and certain strands of sociology, to mention only a few (Håkansson – Snehota 2000, 74).

3.4.1 Basic network characteristics

The idea in the network model of describing the organisation–environment interface originates from the observation that business organisations operate in environments that have only a limited number of identifiable organisational entities (actors). These actors are involved in continuous exchange relationships with other organisations, thus exerting considerable influence on each other, with each actor pursuing individual goals (Håkansson – Snehota 1989, 190; Kock 1991, 9).

Companies often operate in an environment in which their behaviour is conditioned by a limited number of actors, each having unique identities and goals, which they pursue. In this environment they are constantly in contact with each other. The ensuing relationships constitute a framework for exchange processes, which allows actors to access resources owned by other actors. An actor's expertise and capabilities are developed through interactions in the relationships which it maintains with other parties in the network, and thus the identity and character of an organisation is created through this involvement process with other actors. Since the above-mentioned characteristics are applicable to all actors operating in these conditions, an organisation's performance is affected by the network itself, and indirectly even by a third party not in direct contact with the actor (Håkansson – Snehota 1989, 192).

In the network approach (and elsewhere), exchange takes place between individual parties through interaction, and these interactions are shaped by interdependence, prior experiences and current expectations between the exchanging parties (Håkansson – Snehota 1989, 196). A relationship develops over time with an increased number of interactions between parties, each interaction consisting of acts and counter-acts, which shape the relationship. A relationship has a history in which a particular firm's behaviour is controlled

by its relationship with other firms (Low 1996, 465; Kock 1992, 13). "A relationship creates interdependence as much as it is a way to handle interdependencies" (Low 1996, 465).

In networks, firms often find themselves in a relationship[34] consisting of both positive and negative aspects. On the positive side, transaction costs (as defined by Williamson 1985, 18–19) are reduced and the economic efficiency between parties in the network increases. Yet, on the down side, this network relationship limits access to the resources and activities owned and performed by other firms that are not a part of the network (Low 1996, 465). From the network perspective, relationships are formed partly to minimise the risks involved in doing business, and partly as a result of the corresponding industrial system. In theory, this comes down to giving up some independence and freedom in return for uncertainty reduction. Uncertainty reduction often becomes a significant motive for forming strong relationships and increasing interdependency through specialisation (Low 1996, 467).

As interactions are linked together directly or indirectly, a third party – interacting with a particular network "member" – may affect the network position of another party. In other words, an organisation in the network is constrained in its decision-making, as much as its interaction with others constrains the decision-making of the other organisations (Håkansson – Snehota 1989, 193). It goes without saying that network researchers have abandoned the *ceteris paribus* precondition favoured by most economists.

3.4.2 Actors, resources and activities –model for networks

Håkansson & Snehota's model of industrial networks is constructed of three factors forming the network environment. This ARA-model of networks consists of actors, activities between actors, and the resources these actors possess and exchange in network activities (Håkansson – Snehota 1995, 28).

Actors control the activities and resources exchanged within the network structure. They may be single individuals, groups of individuals or whole companies. Actor bonds, the links between networking actors, influence actor identities and how they perceive one another through interaction and exchange between the networking parties (Håkansson – Snehota 1995, 34 and 26).

These relationships give networking parties access to resources controlled by other actors. Actor activities are based on direct and indirect control over resources, and resource ownership is the basis for direct control. Indirect

[34] See Ritter (2000) for an extensive discussion on the interconnectedness of relationships.

control, on the other hand, has its foundation in relationships and interdependencies among other actors in the network.

All actors in the network are goal orientated, and the aim of each actor organisation is to increase control over network resources and activities. This control can then be used to achieve other goals. Information, perception and knowledge about activities in the network are unequally distributed, and naturally, the closer the actors, the better informed they are about a particular situation (Håkansson and Johanson 1992, 28–30).

Resources are exchanged between actors in the activities they perform. Some resources are needed for transformation and some for transfer activities (Håkansson – Johanson 1992, 32); these include e.g. financial, technical, marketing and raw-material resources, with varying degrees of substitutability. Financial resources are easily substituted for other resources, and thus relationships based purely on money may be unstable. Correspondingly, relationships based on resources of a lesser degree of substitutability are generally more stable (Low 1996, 487).

Network resources are controlled by a single actor or by a group of actors, and resources may thus be further classified into direct and indirect resources; direct resources are available within a particular organisation, while indirect resources are controlled by other organisations (Kock 1992, 6). The resources owned by different companies are then accessed through the business relationships that connect these companies. The resources exchanged in the business process are then processed – some are transferred and others are accessed and used in different ways. As the relationship develops, companies form specialised structures to handle the relationship and the resources exchanged, thus increasing their interdependence. As a result, the borderline between internal and external resources becomes blurred (Håkansson – Snehota 1995, 136).

In most companies there is always scope to develop resource utilisation. Since the resources available to the networking partners are indirectly resources of the company itself, the company has to be knowledgeable about them. Turnbull et al. (1996) implicitly suggest that resources form the basis of a company's competitiveness, and since resource allocation in the network is often constantly changing, an individual firm's competitiveness is also in a constant – dynamic – process of evolution.

Actors in the network perform **activities**, which are divisible into two basic categories, transformation and transfer activities. Transformation activities transform existing resources and create new ones, while transfer activities transfer control over resources from actor to actor in the network. These two types are linked because transfer activities give network actors access to transformation activities performed by other actors (Håkansson – Johanson

1992, 30). Links formed by activities that actors perform span over organisational boundaries, and integrate the activity structure of a single actor into the activities of the industrial network (Håkansson – Snehota 1995, 58).

As with resource utilisation, activity links in a relationship are never optimal – there is always room for improvement. Not all activity links are equal, however, and certain relationships require a higher priority than others. The company activity structure is linked to activities performed by other organisations in the network; thus economic performance is dependent on the productivity of others for others. From the network position perspective, activity links are perhaps the most important tool with which companies position themselves: they give access to other links developed by others, and thus link development gives access to an improved network position in the future (Håkansson – Snehota 1995, 130–131). All of the above-mentioned characteristics of the ARA–model are closely interrelated.

3.4.3 Network structure

Relationships in networks with only a few active organisations between them often develop over time to a point at which all actors have their own distinct identity. This development process often results in organisations forming bilateral links to other actors' resources and activities. These linkages are generally continuous rather than discrete in nature, thus promote structure stability in the network. Each relationship (linkage) in the network consists of a complex web of interactive relations between individuals in both organisations (Håkansson – Snehota 1989, 190–191).

Over time, the networking parties develop reciprocal functions to handle activities. Each link in the firm's network interface has its own "organ", custom-fitted to handle relationships with certain operating characteristics and designated personnel (Håkansson – Snehota 1989, 191). When both parties have made such adaptations[35], it is less likely that either of them will terminate the relationship or look for alternative partners (Kock 1992, 13).

The focal network structure (Figure 17) is often very stable, since firms operating in the network have a tendency to preserve the existing balance of power. The focal firm has control over the resources owned, and investments between firms ensure even further structure stability (Low 1996, 488). Network structures are indeed stable, but not static: network actors are active and, within the existing structure, current relationships change, new ones are formed and some are terminated (Easton 1992, 23). In the absence of

[35] In the vocabulary of transaction cost theory, these adaptations are referred to as asset-specific investments.

incentives that exceed the cost involved in terminating a network relationship and the associated commitments, the current network structure will be maintained (Low 1996, 488).

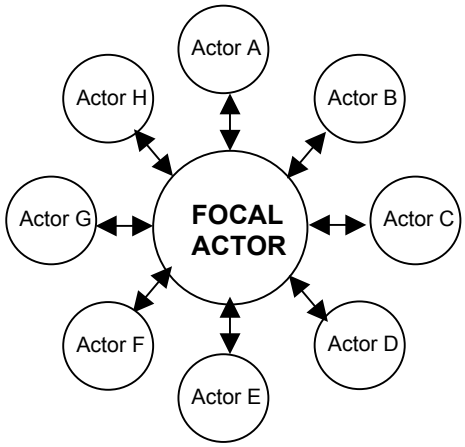

Figure 17. The focal network structure

Focal networks clearly illustrate the characteristic of network structures that is so often dominant: the unequal distribution of power. In such an environment, two basic, yet complementary, approaches to handling relations are possible: competition and co-operation (Easton 1992, 23). Co-operation is argued to be the dominant approach in networks, since resources owned by a particular firm are needed by another and vice versa. Network co-operation also enables a company to undertake operations that would otherwise be impossible for it to conduct alone. Strong network co-operation also prevents outside parties from sharing network resources (Low 1996, 479).

Network structures are the tool (for managing relationships) and the outcome (the result of interaction with others) of a world of interdependent economic actors (Low 1996). They are evolving and self-organising systems consisting of actors, with each one pursuing its individual goals in self-interest (≠ opportunism), and therefore the direction this constantly changing process takes can never be fully known (Low 1996, 472–473).

3.4.4 Network position and power

According to transaction cost theory and the relationship marketing/purchasing approach, companies are concerned with appropriate governance mechanisms and relationship types respectively. Network analysis approaches the same question from a broader perspective, recognising the web of interdependencies in which a single company is embedded. In the network approach vocabulary, the concept ‘network position’ is used in reference to the

exchange formation (i.e. governance mechanism and relationship type, in TCA and relationship marketing respectively).

The network position is a relative concept defined by other actors within the network structure (Håkansson – Snehota 1989, 196). In other words, the company network position, in many respects, is a function of the development of its resources through interactions with others in the network relationship (Low 1996, 479). As the network position of a particular firm is related to other firms in the network, companies operating in exchange relationships need to take into account the aims and strategies of other actors when pursuing their own aims and strategies (Johanson et al. 1995, 15). For instance, a company introducing a new supplier to its supplier network changes its position within the network structure.

Network position development could be considered an investment for the future: the process takes time and resources, and the created assets are not immediately available for utilisation. As this investment strengthens the network position of the firm, it also strengthens its bargaining position in the network. This bargaining position is related to the firm's ability to deploy its resources, and to the effectiveness of the organisation in handling relations with the firms in the network that desire them. In pursuing their strategic self-interests, firms also need to find a balance between the opportunities and the constraints that go along with the position in the network (Low 1996, 481).

The concept of network power is also closely connected to network position, and power is one of the central concepts in the network approach (Thorelli 1986, 38). Thorelli (1986, 38) defines power as "the ability to influence the decisions or actions of others." Low (1996), however, takes a more resource-centred view: "The power that accompanies the network position is indicated by the degree of control the firm has over the resources it owns and the desirability of these resources by others in the network". Such resources include technical, financial, marketing and raw-material resources. Simply, the more desirable these resources are, the greater the network power associated with the network position. The focal firm – the firm with clearly the greatest network power – controls access to resources owned by other companies in the network. From the focal firm's perspective, such power is an opportunity to increase or maintain the dependencies of other firms on it, and to reduce its dependence on other network actors (Low 1996, 483–484). In other words, network power and dependency are symmetrical concepts – one actor's increased network power will decrease that of other organisations (Kock 1992, 15).

3.4.5 Concluding remarks on the IMP-group/Industrial network approach

The industrial network approach views industries as networks of exchange relationships, and analyses the positions of firms in that network as well as in the traditional inter-firm dyads (see e.g., Easton 1992, 8). According to the network approach, a company's internal efficiency is no longer the decisive factor in determining its effectiveness. Its effectiveness and bargaining position in achieving its goals develop in the context of activities taking place between organisations within the network.

This industrial network approach to the study of organisational relationships also has its problems and challenges for researchers. The research findings and conclusions need to be viewed as situational insights into the focal company and its context in the focal network. The focal firm aspect works best for functions related to marketing and purchasing in a dyadic network: a more comprehensive network view would better contribute to overall strategy development. The approach is also best suited to describing and understanding network structures linking companies together, and therefore its usefulness in developing more concrete managerial solutions is questionable due to its lack of explanatory power. Given this lack of explanatory power, there is a need for complementary concepts to transform its achievements into practical solutions serving e.g. company management (Tikkanen 1997, 76–77). Thorelli (1986, 44) argues that the network paradigm should be viewed not as a substitute for any theories of the firm, but as a supplement, "a viewpoint with both normative and positive implications."

In an industrial environment, alternative suppliers are often scarce and products are highly differentiated (Lehtola 1997, 121). In situations characterised by stable relationships and varied transactions, the quality of the relationship determines the characteristics of the transactions that take place across it (Ghoshal – Moran 1996, 37). Lehtola (1997, 121) argues that the network approach is highly appropriate for studying a firm's interaction with its surrounding environment in business-to-business marketing and industrial purchasing. This type of analysis makes an implicit assumption that all transactions taking place in the business-to-business environment have relational characteristics. However, this assumption is questionable, as companies often engage in a wide range of transactions, some with relational characteristics and some without, e.g., spot trading at a commodity exchange.

It is evident that there are similarities between the concepts and "mentality" of relationship marketing and the IMP-group/industrial network approach. It has been argued, however, that the IMP researchers seldom perceive themselves as connected with the relationship marketing approach, although

the relationship marketers openly use IMP research as inspiration for their work (Gummesson et al. 1997, 14). Yet, in comparison with the relationship marketing school, network research has had a much broader functional orientation than simply marketing, and in fact much of the early research dealt with purchasing rather than selling (Mattsson 1997, 450–451). Nevertheless, it is evident that the IMP-group/Industrial network approach recognises multiple actors and the relationships between them (see e.g., Ritter 2000) in all three relationship perspectives (inter-organisational, inter-functional and intra-functional). In fact, on the theoretical level, the network approach does not differentiate between different relationship perspectives and considers individual relationships equal as long as they are part of the relevant network under investigation.

Logisticians and other supply-side researchers often use the concept 'supply chain' instead of 'network' when referring to links between different organisations. Christopher & Ryals (1999, 3) define the supply chain as "the network of organisations that are involved, through upstream and downstream linkages, in the different processes and activities that produce value in the form of products and services in the hands of the ultimate consumer." The management of the supply chain (i.e. supply chain management) is focused on co-operation and trust, and on recognition that, when properly managed, the whole may be greater than the sum of its parts (Christopher – Ryals 1999, 3). These definitions for supply chain and supply chain management contain aspects of both the network approach and relationship marketing. Given the true nature of the supply "flow", it would perhaps be more appropriate to use the term 'supply network management', since the concept 'supply chain' could easily be interpreted as a pipeline, rather than as a network of relationships.

3.5 Concluding remarks on the selected theoretical approaches

The unit of analysis in **transaction cost theory** is the transaction itself, regardless of the implications linked to the social aspects of individual transactions or other transactional relationships. The basis for exchange is derived from minimised transaction, production and governance costs. In principle, make-or-buy decision-making results in either internalised (hierarchy-based), or market-based transactions. In transaction cost terminology, different exchange formations are referred to as 'governance mechanisms', and the decision concerning the appropriate governance mechanism is made unilaterally by the firm in question. It appears as if transaction cost theory offers a relatively strong justification for a buyer-supplier relationship to exist (i.e. lower transaction costs), yet it is not

concerned with the "maintenance" of these hybrid forms of relationship between markets and hierarchies. However, it has been widely used as a framework and a source of theoretical inspiration in supply chain research.

In view of the scope of this study, transaction cost theory appears to be a powerful and effective theoretical framework for procurement considerations at the transactional end[36] of the relationship-type continuum. It is also applicable at the hierarchical end [37]. Typical research questions revolve around the efficient boundary of the firm (i.e. make-or-buy decision-making). In other words, there are some areas of application near the market and hierarchy ends of the relationship-type continuum, thus giving some support to the inter-organisational relationship perspective. Yet, this theoretical approach offers few concepts and tools for understanding the inter- and intra-functional relationship perspectives.

The **relationship marketing/purchasing approach** concentrates its analysis upon the dyadic relationships, in which individual transactions are simply episodes in the relationship. The social embeddedness of each relationship is also recognised, yet without concern for other relationships. Successful relational exchange results in relationship benefits (e.g. increased sales) and minimised transaction and production (including governance) costs. The implicit tone in this approach appears to be a preference for closer relationships rather than more market-oriented transactional arrangements. In relationship marketing/purchasing terminology, 'relationship type' is used to describe the exchange formation, and here the resulting decision is often bilateral as both the buyer and the supplier are involved. The relationship marketing/purchasing approach focuses on the relationship. It is not restricted to reducing costs, but also takes into account the possible benefits achievable from developed relational exchange.

The relationship marketing/purchasing approach has a strong focus on the more developed relationship types, but the dyadic approach (i.e. the narrow view of relationship marketing) fails to recognise the embeddedness of individual relationships in the surrounding environment. Yet, the inter- and intra-functional perspectives on relationships are recognised in the broader view of relationship marketing e.g. in the form of internal marketing. The framework would appear to be a suitable approach to procurement decision-making in the area of dyadic inter-organisational relationships on the relationship-type continuum. Research questions and decision-making typically concern appropriate partner selection and relationship type

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[36] The applicability of transaction cost theory is naturally not only limited to questions relating to buyer-supplier relationships and market-based transactions.

[37] It could even be argued that transaction cost theory has somewhat polarised applicability on the relationship-type continuum, for its greatest applicability is at both ends of the continuum, while it has limited explanatory or prescriptive power in terms of "hybrid" relationship forms.

determination. Despite offering concepts for describing and defining inter-organisational relationships, however, it offers very few effective management tools. For the most part, the rationale behind developed relational exchange would appear to be borrowed from transaction cost theory.

In principle, the **IMP-group/Industrial network approach** addresses questions similar to those addressed in the relationship marketing/purchasing approach, although within the network context. Here, individual relationships form a network in which the relationship is embedded in the social structures of the organisations in question, and in the network of other relationships. Consequently, the exchange-formation terminology in this theoretical approach refers to the company's position in the network rather than to individual relationship types. The network position itself is dependent not only on the focal company's decision-making, but also on changes elsewhere in the network, which have an impact upon the position of the focal company. The IMP-group/Industrial network approach recognises the range of different exchange formations and their interlinked nature, and that not all relationships are of equal importance.

The industrial network approach perceives individual relationships as being embedded in networks of individual relationships. This type of holistic analysis would appear to be suitable for highly developed buyer-supplier relationships, in which the partnership relationship, for example, could be included. In terms of relationship types, this approach is believed to be most suitable for buyer-supplier relationships ranging from a purely dyadic configuration towards an individual company (yet falling short of full vertical integration), where the network configuration is assumed to be relatively well established and identifiable. All in all, the IMP-group/Industrial network approach recognises all three relationship perspectives (inter-organisational, inter-functional and intra-functional). Typical research questions address network positioning and networks as a competence source. In sum, the IMP-group/Industrial network approach offers a number of concepts for describing networks and relationships, but very few tools for their management.

Some of the key characteristics of the three theoretical approaches are summarised in Table 3 in the light of this research on buyer-supplier relationships.

Table 3. Key characteristics of the theoretical approaches

Key characteristics	THEORETICAL APPROACH		
	Transaction cost theory	**Relationship marketing/purchasing approach**	**IMP-group/ Industrial network approach**
Unit of analysis	Transaction	Dyadic relationship	Dyadic relationships embedded in network context
Basis for exchange	Minimised transaction and production costs (including governance costs)	"Relationship benefits" and minimised transaction and production costs	"Relationship benefits" and minimised transaction and production costs. Not all relationships are equal.
Exchange-formation terminology	Governance mechanism	Relationship type	Network position
Exchange/relation-ship selection	Unilateral decision	Bilateral decision	Multilateral "decision"
Recognition of "embeddedness"	No (in respect of social aspects linked to transactions and other relationships)	No (with respect to other relationships)	Yes
Recognition of inter-functional and intra-functional relationship perspectives	Extensive discussion on different organisational forms, but without much concern for inter- and intra-functional relationships.	The broad view of relationship marketing recognises marketing and purchasing as cross-functional processes and the significance of internal marketing.	Yes
Supply chain perspective	Widely used theoretical framework in transaction level supply chain research. Not much concern for the relational elements of SCM.	Supply chain relationships recognised in a dyadic context. Focus mainly on relational elements, with less emphasis on transaction level.	Supply chain or supply chain networks. Focus mainly on relational elements, with less emphasis on transaction level.

Every researcher has to make choices concerning research. These choices include e.g. the problem definition, the choice of research method and the theoretical approach. Yet, it is obviously not sufficient simply to make choices, since the real challenge is to justify the decisions made. The challenge in this study is to give a plausible explanation why these three approaches for studying business-to-business exchange were selected.

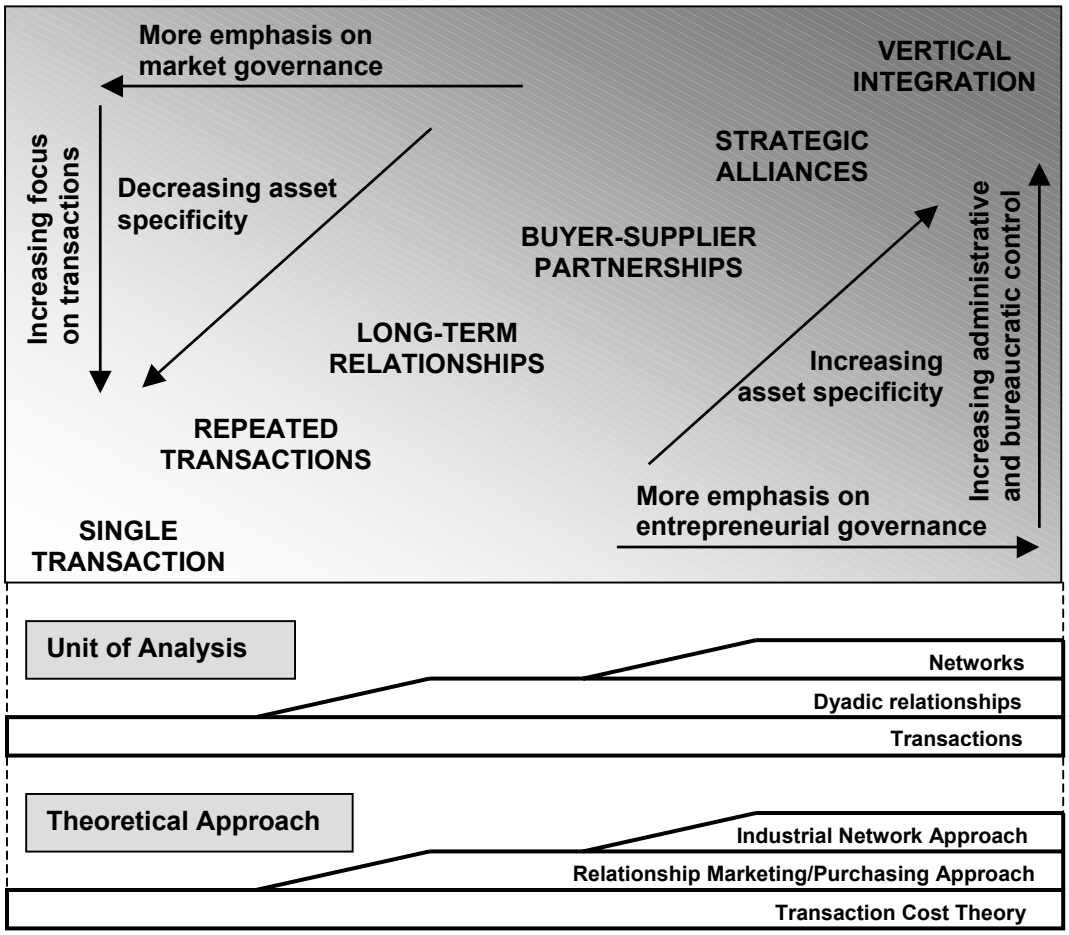
According to Möller (1994, 349), a researcher in the field of business exchanges must deal with multiple research approaches that are partly interdependent and overlapping. He or she must also take into account approaches and views that provide only a partial view of the phenomenon under study, and which are based on different theoretical sources and conceptual frames of reference. Finally, the approaches should have different units of analysis, which focus on issues at different aggregation levels.

Research on buyer-supplier relationships must never disregard the underlying cause of any relationship, the transaction. Any developed relationship type, including a partnership, is clearly merely a tool for managing complex exchange situations, and by no means an end in itself worth striving for. In some cases, however, the transaction itself is not a sufficient unit of analysis, and this is where the relationship – at least in dyadic and sometimes also in the network configuration – comes into its own. In

other words, the individual approaches offer only a partial view, but when they are applied simultaneously their shortcomings may be overcome, at least in part.

The theoretical approaches discussed in this thesis each have their unique, yet interlinked characteristics. The transaction cost approach is a very generic theory with applications in all areas of business. The relationship marketing/purchasing approach is more relationship-specific, with its primary area of applicability in buyer-seller dyads (with the research focus primarily on the marketer's perspective). The IMP-group/Industrial network approach is also, despite its origins in the purchasing (and marketing) of industrial goods, a generic approach, applicable in a wide range of industrial operations. It should also be noted that the differences between the theories can to great extent be attributed to differences in their ontological approach. Transaction cost theory appears to lie in the 'realist'-end of the scale with the world as treated as given and external to the observer, whereas both the relationship marketing and IMP-group/Industrial network approach perceive the reality as a product of one's mind. With this in mind, the theories don't seem that distant from one another. Figure 18 illustrates the relationship research framework, and the linkage between the relationship-type continuum and each of the theoretical approaches.

The cumulative aspects of the theoretical approaches are also illustrated in Figure 18. At the hierarchical extreme of a vertically-integrated company, all aspects of the theories discussed need to be taken into account when analysing the make-or-buy decisions in buying products or services. All in all, this relationship research framework offers researchers a point of departure. The idea is to offer a "rule of thumb", according to which that the more developed and complex end of the relationship-type continuum is under investigation, the more developed (and possibly also complex) relationship research strategies and approaches should be applied. (Seppälä 2001, 237)



Adapted from Seppälä (2001). the relationship-type continuum is based on Webster (1992, 5)

Figure 18. The relationship research framework: the theoretical approaches and subsequent units of analysis illustrated on the relationship-type continuum

Despite some similarities and cumulative aspects in the theories discussed, there are clearly conflicting elements as well. For example, the underlying assumption of opportunism as a basic characteristic of human nature in transaction cost theory suggests a short-term orientation (and self-interest with guile) in all market-based transactions[38]. The relationship marketing/purchasing approach emphasises trust, and suggests a long-term orientation to relationships (and transactions). The IMP-group/Industrial network approach recognises both short- and long-term orientation, since not all relationships in the network are equal. These conflicts arise partly from different theoretical sources and underlying assumptions (e.g. ontology).

It is assumed that the approaches selected for this study cover the phenomenon in question relatively well. Different units of analysis, sources of

[38] Transaction cost theory suggests market-based transactions for commodities involving low asset specificity. In contrast transactions involving high asset specificity are more appropriate for vertical integration.

theoretical inspiration and underlying assumptions concerning human nature, for example, are well represented. Moreover, they complement each other well in this area of research. Other possible approaches that could have been reviewed and discussed include political economy and organisational buying behaviour. The former focuses more on the channel aspects of interaction, while the latter lays emphasis on how organisations buy with only limited consideration of the buyer-supplier relationships, especially in terms of multiple perspectives. All in all, however, these two alternative approaches have some characteristics in common with the theoretical approaches already discussed.

4 EMPIRICAL APPROACHES TO RESEARCH ON BUYER-SUPPLIER RELATIONSHIPS

4.1 Empirical investigations

This chapter begins by reviewing some models and methodologies for research on inter-organisational relationship, and continues with an overview of recent work on inter-functional relationships. The scope is further narrowed in the last sub-section, which discusses empirical models of intra-functional relationships. Figure 19 below shows the inter-relationships and areas of emphasis in the different empirical research models.

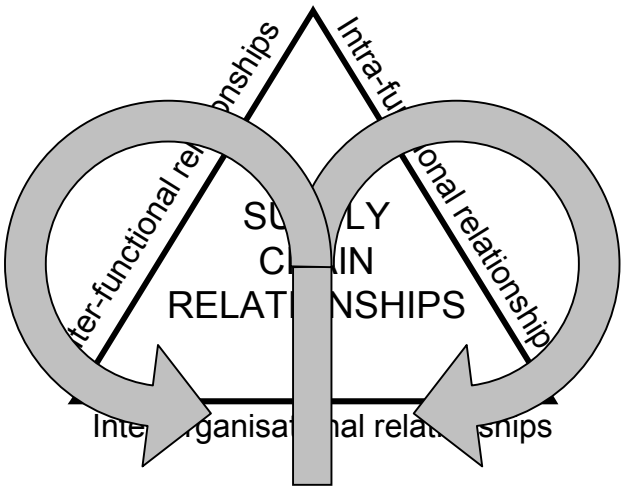


Figure 19. The positioning of the focal research area – inter-organisational relationships – in relation to the inter-and intra-functional perspectives

Inter-organisational relationships are in the focal area of interest in this study. The other two relationship perspectives are discussed specifically in relation to the inter-organisational relationships.

4.2 Models for assessing inter-organisational relationships

Numerous journal articles and textbooks have been written on inter-organisational relationships and relationship characteristics. The majority of these academic publications recognise the significance of the relationship in inter-organisational interaction and argue that, in favourable circumstances, “relationship marketing” and “relationship buying” are appropriate activities.

However, the underlying philosophy in the application of these developed relational strategies, e.g., partnerships, should be “fit-for-purpose” keeping in mind the business environment and exchange circumstances, as suggested by Kraljic (1983), Jackson (1985), Anderson & Narus (1991), Cooper & Gardner (1993), Heide (1994), Cox (1996) and Dyer et al. (1998).

There are relatively many examples of the projected and actual positive elements associated with relational exchange, such as reduced production and transaction costs, reduced risk and uncertainty, and increased flexibility (see e.g., Ellram 1991b, Lambert et al. 1996, Dyer et al. 1998 and Bensaou 1999). However, there are relatively few tools for assessing the actual status of inter-organisational relationships. Most of the models are relationship-lifecycle oriented and, in fact, offer no true assessment of the relationship itself. Some of them are focused on relationship initiation and development, closely resembling the relationship-life-cycle stages from initiation to dissolution (e.g., Dwyer et al. 1987, Landeros et al. 1995 and Ellram & Edis 1996). Some researchers approach developed relationships, e.g., partnerships, from the perspective of key success factors and barriers (e.g., Ellram 1991a and Graham et al. 1994), and describe their characteristics in moderate detail: yet they do not give systematic classifications or detailed descriptions of the building blocks, nor do they offer systematic tools to assess relationships. In fact, most of the widely-used inter-organisational models described in the current literature are only conceptual (see e.g., Dwyer et al. 1987, Wren & Simpson 1996), and there are relatively few empirical investigations on buyer-supplier relationships as such.

The terminology used to describe developed relational-exchange formations takes several forms in current literature. Varadarajan & Cunningham (1995, 283) identified, from numerous sources, a vast array of terminology, ranging from symbiotic marketing and strategic alliances via strategic partnerships and networks to quasi-integration strategies and coalition strategies, to mention a few.

Here, the intention is to review some contemporary relationship assessment approaches from current literature in the field of relationship marketing and partnership research. The various relationship constructs are also listed, and the respective research approach and methodology are discussed.

4.2.1 Anderson & Narus (1990): relationship constructs

In the field of marketing-channels research, Anderson & Narus (1990) constructed a model of distributor-firm and manufacturer-firm partnerships. They define this working partnership as “the extent to which there is mutual

recognition and understanding that the success of each firm depends in part on the other firm, with each firm consequently taking actions so as to provide a coordinated effort focused on jointly satisfying the requirements of the customer market place" (Anderson – Narus 1990, 42).

The aim of their study was two-fold. First a model was developed and then tested in the context of the distributor and manufacturing firms in a cross-section of industries. The model was developed not to assess manufacturer–distributor relationships as such, but to investigate the inter-relationships between different relationship constructs (e.g., trust, communication and relationship satisfaction) in the channel-relationship context.

Anderson & Narus list the relationship constructs they used, but fail to give a full description of how they empirically evaluated each one. The table below gives a sample of the type of relationship measures used to evaluate the relationship constructs on the distributor side.

Table 4. Relationship constructs for distributor firms

RELATIONSHIP CONSTRUCT	Example measure (evaluated on a seven-point scale)
TRUST (scale: don't trust Manufacturer X/trust Manufacturer X completely)	Based upon your past and present experience, how would you characterise the level of trust your firm has in its working relationship with Manufacturer X?
COMMUNICATION (scale: strongly disagree/strongly agree)	Manufacturer X lets our firm know as soon as possible of any unexpected problems with things such as lead time, delivery schedules, or product quality
CO-OPERATION (scale: strongly disagree/strongly agree)	Computed as a sum of: a) Our firm helps out Manufacturer X in whatever ways they ask b) Manufacturer X helps our firm out in whatever ways we ask
INFLUENCE BY PARTNER FIRM (scale: strongly disagree/strongly agree)	Manufacturer X has considerable latitude in deciding how much field sales assistance and technology support they give to our firm for their product line
INFLUENCE OVER PARTNER FIRM (scale: not at all/To a great extent)	To what extent does Manufacturer X follow whatever recommendations your firm makes regarding the marketing and selling of their product line?
FUNCTIONALITY OF CONFLICT (scale: considerably increased/considerably decreased)	Disagreements between Manufacturer X and our firm have _____ the productivity of our working relationship. (NOTE: This measure is evaluated on a five-point scale)
SATISFACTION (scale: strongly disagree/strongly agree)	Our firm's working relationship with Manufacturer X has been an unhappy one.
RELATIVE DEPENDENCE (scale: prohibitive/negligible)	Computed as the difference between: (a) In your judgement, the total costs to your firm in switching to a competing manufacturer's product line would be _____. (b) In your judgement, the total costs to Manufacturer X in replacing your firm with another distributor in your trade area would be _____. (NOTE: This measure is evaluated on a five-point scale)
OUTCOMES GIVEN COMPARISON LEVEL (scale: greatly above/greatly below)	The financial returns our firm gets from Manufacturer X's product line are _____ what we look for in distributing a product line. (NOTE: This measure is evaluated on a five-point scale)

(adapted from Anderson & Narus 1990, 49)

The research constructs used to evaluate the manufacturer and distributor perceptions of the relationship were not identical, but very similar in terms of both the relationship constructs and the measures. Two separate questionnaires were prepared, one for the distributor firms (see Table 4 above) and the other for the manufacturer firms. As was the case with the distributor-firm relationship constructs, Anderson & Narus do not give a detailed description of how they empirically evaluated each of the relationship constructs. Table 5

below gives a sample of the type of relationship measures used to evaluate the manufacturer firms' relationship constructs.

Table 5. Relationship constructs for manufacturer firms

RELATIONSHIP CONSTRUCT	Example measure (evaluated on a seven-point scale)
TRUST (scale: don't trust Firm X/trust Firm X completely)	Based upon your past and present experience, how would you characterise the level of trust your firm has in its working relationship with Firm X?
COMMUNICATION (scale: strongly disagree/strongly agree)	Firm X lets our firm know as soon as possible of any unexpected problems they are experiencing with such things as poor cash flow or other financial difficulties.
CO-OPERATION (scale: strongly disagree/strongly agree)	Computed as a sum of: a) Our firm helps out Firm X in whatever ways they ask b) Firm X helps our firm out in whatever ways we ask
INFLUENCE BY PARTNER FIRM (scale: a great deal/next to none)	Firm X exerts _____ influence over the way our company markets our product line through their firm. (Note: This measure is evaluated on a five-point scale)
CONFLICT (scale: strongly disagree/strongly agree)	Firm X and our company have significant arguments in our working relationship.
SATISFACTION (scale: strongly disagree/strongly agree)	Our company's working relationship with Firm X has been an unhappy one.
RELATIVE DEPENDENCE (scale: strongly disagree/strongly agree)	Computed as the difference between: (a) There are other manufacturers available to Firm X who sell product lines comparable to those of our company. (b) There are other distributors in Firm X's trading area that could provide comparable distribution for our company's products.
OUTCOMES GIVEN A COMPARISON LEVEL (scale: it has fallen short of expectations/it has greatly exceeded our expectations)	Overall, how would you characterise the results of your company's working relationship with Firm X?

(adapted from Anderson & Narus 1990, 51)

The unit of analysis was the firm (either manufacturer or distributor), and it was represented by two informants. The research data was collected using a mail-in questionnaire with a sample consisting of 249 distributor firms and 213 manufacturer firms[39]. There was no explicit one-to-one matching of the firms to allow for the manufacturer-distributor dyad to be the unit of analysis[40].

The research aim was to construct a distributor and a manufacturer working-partnership model. The model contains various interlinks between the relationship constructs described in the two tables above. In principle, both the distributor and the manufacturer models emphasise the importance of co-operation, trust and communication as the central relationship constructs (see Anderson – Narus 1990 for details). The developed working-partnership model is not positioned among other types of inter-organisational relationships, but Fontenot & Wilson (1997, 8) have since classified the

[39] Ganesan (1994) also conducted very similar research in the context of manufacturer-distributor relationships with the aim of identifying the antecedent of long-term orientation in buyer-seller relationships. Unlike Anderson & Narus (1990), Ganesan (1994) fully describes the research method and how each research construct was evaluated in a questionnaire format.

[40] In an earlier work by Anderson & Narus (1984), only the distributors' perceptions of the relationships were used to formulate a distributor–manufacturer working-relationship model.

Anderson & Narus working partnership as a long-term buyer-seller partnership on Webster's (1992) relationship-type continuum.

The Anderson & Narus model, however, appears rather adversarial in its approach to partnership relationships. This is especially apparent in the absence of commitment as a key variable. Dependence and power, rather than commitment, are perceived as the key constructs ensuring e.g. relationship continuity. Inter-organisational communication is also assumed only to be related to problem situations.

Instead of considering the perceived dependence on the working relationship, Anderson & Narus stress the importance of investigating the firm's perception of its dependence *relative* to its partner's dependence on the relationship. However, it is doubtful whether the research could have adequately captured the essence of relative dependence given the methodology that was applied. The unit of analysis in this study was the firm, and the focus was on its perceptions of the relationship rather than on the dyadic relationship between the manufacturer firm and the distributor firm. The relative dependence measure was based on one firm's perception of the other's dependence on this relationship. There is no guarantee that e.g. the distributor firm was able to accurately evaluate the manufacturer's dependence on itself.

Although both manufacturer and distributor firms were involved in the study, the researchers were not adequately able to capture the "bi-directional" nature of individual relationship constructs, such as dependence, co-operation and conflict. It could be argued that, in order to truly assess the nature of these constructs, one must be able to juxtapose the perceptions of individual firms in a dyadic context.

However, Anderson & Narus used two informants per company in their analysis, thus limiting the respondent bias, at least to some extent. The research method does not allow the researcher to control the answering situation, and e.g. prevent multiple informants from answering together. The authors also recognise the increased costs involved in conducting multiple-respondent research, even when using mail-in surveys. (Anderson – Narus 1990, 55–56)

4.2.2 Metcalf et al. (1992): the IMP interaction model

The principal objective of Metcalf et al.'s (1992) article is to operationalise the relationship constructs – exchange, co-operation and adaptation – that are identified in the IMP Interaction Model, and subsequently to formulate some research hypotheses concerning the interrelationships among them. Finally,

these hypotheses are tested in the context of commercial aircraft-engine manufacturing in the USA.

The study was conducted in an environment involving both the buyers and the suppliers. The purchasing side was represented by six US-based manufacturers of commercial aircraft engines. The purchased parts of interest in this study were castings, and the supplier side was represented by nine casting suppliers.

The research was carried out using multiple informants with buyer-seller relationships (actual one-to-one matching of the relationship counterparts) as the unit of analysis. Since organisational buying and selling often involve multiple functions, all functional areas (and personnel) participating in the buying and selling processes were identified and interviewed.

The IMP Interaction Model research constructs used to evaluate buyer-supplier relationships were operationalised using between two and five questions per construct. In most cases, a five-point scale was used in each question and construct (see Table 6). These relationship constructs and corresponding questions were adapted from Ford (1994, 103–104).

Table 6. The IMP Interaction Model: constructs and measures

IMP INTERACTION MODEL CONSTRUCT	Measure/Question (evaluated on a five-point scale)
PRODUCT IMPORTANCE (scale: neither important nor unimportant, important, very important, absolutely essential)	In terms of the success of the engine under consideration in this study, technical assistance (product quality, product service, product reliability, timely delivery) is… (NOTE: This measure is evaluated on a four-point scale)
	In terms of the success of the engine under consideration in this study, this casting is… (NOTE: This measure is evaluated on a four-point scale)
INFORMATION EXCHANGE (scale: strongly disagree/strongly agree)	The buyer/seller usually provides technical documentation in substantial detail.
	The technical information supplied by the buyer/seller is often inadequate.
SOCIAL EXCHANGE (scale: strongly disagree/strongly agree)	We like dealing with the buyer/seller.
	The buyer/seller has a good understanding of our problems as buyers/sellers.
	We have full confidence in the information provided to us by the buyer/seller.
	The buyer/seller generally has a poor understanding of how our company operates.
	It is difficult to make personal friends with purchasing people/salespersons and technical people from the buyer's/seller's company.
CO-OPERATION (scale: strongly disagree/strongly agree)	Purchasing/marketing people from the buyer's/seller's company co-operate closely with us.
	Purchasing people/salespersons from the buyer's/seller's company frequently contact us.
	Purchasing people/salespersons quickly respond to our requests for a call.
	The buyer/seller is particularly interested in following up how the seller's products are used.
ADAPTATION (scale: strongly disagree/strongly agree)	The buyer/seller is often interested in joint product-development activities.
	The buyer/seller is often receptive to/offers us new technical solutions.
	The buyer/seller often suggests that we jointly co-ordinate our production plans.

(Metcalf et al. 1992, 45, originally adapted from Ford 1984, 103–104)

The research hypothesis developed in this study concerned the interrelationships between the different relational constructs. The findings suggest, first of all, that information exchange and social exchange lead to co-operation. Second, co-operation between buyers and sellers affects their

willingness to make adaptations. Moreover, perceived product importance encourages adaptations (e.g., investments) on the part of either party. Finally, information exchange was also found to facilitate adaptation. (Metcalf et al. 1992, 38–39)

Although this research as such was not aimed at investigating the characteristics and status of individual buyer-supplier relationships, it could be used in this context as well. High scores on the constructs of the IMP Interaction Model (exchange, co-operation and adaptation) suggest a developed relationship, while low scores suggest a more conventional arm's-length type of buyer-seller relationship.

The research was conducted using multiple informants and involving both buyer and seller organisations. This type of approach would allow for a detailed level of analysis of the differences in perception between multiple parties involved in inter-organisational buying. It might have been worthwhile investigating whether the responses by the purchasing and R&D personnel varied with respect to the constructs of the IMP Interaction Model. In fact, the relationship data was collected from actual one-to-one buyer-seller relationships. The full data was consolidated according to the group responses from the buyer and seller organisations, and pooled in a single group (Metcalf et al. 1992, 37). While this increased the statistical validity of the test itself, it made it impossible to investigate the perception differences between the purchasing people and the R&D personnel, for example.

4.2.3 Morgan & Hunt's (1994) relationship constructs

Morgan & Hunt (1994) also approach relationship assessment from the perspective of relationship marketing. According to their definition (p. 22), "Relationship marketing refers to all marketing activities directed toward establishing, developing, and maintaining successful relational exchanges". They do not describe in detail what they mean by successful relational exchange.

The research was aimed at investigating the role of relationship commitment and trust as mediating variables for successful relationships and, as such, was not used to assess individual inter-organisational relationships or to identify different relationship types. The study was conducted in the context of automobile tyre retailing using a mail survey that produced 204 usable responses. The unit of analysis was the manufacturer–retailer relationship and its relationship characteristics.

The authors do not provide a comprehensive set of the measures used to evaluate their relationship constructs. Instead, as illustrated in Table 7 below,

they only give a sample of the types of measures/questions used to evaluate different relationship characteristics. This makes it more difficult to fully evaluate this research.

Table 7. Relationship constructs

RELATIONSHIP CONSTRUCT	Sample items (evaluated on a seven-point scale)
TRUST & OPPORTUNISTIC BEHAVIOR (scale: Strongly agree/strongly disagree)	In our relationship, my major supplier cannot be trusted at times.
	In our relationship, my major supplier can be counted on to do what is right.
	In our relationship, my major supplier has high integrity.
	To accomplish his own objectives, sometimes my supplier alters the facts slightly.
	To accomplish his own objectives, sometimes my supplier promises to do things without actually doing them later.
COMMUNICATION (scale: Strongly agree/strongly disagree)	In our relationship, my major supplier keeps us informed of new developments.
	In our relationship, my major supplier communicates well his expectations for our firm's performance.
CO-OPERATION & SHARED VALUES & FUNCTIONAL CONFLICT (scale: Not at all co-operative/very co-operative)	How would you characterise the cooperation between you and your supplier regarding the following activities? 1. Local/Regional Cooperative Advertising 2. Inventory Levels
(scale: Strongly agree/strongly disagree)	Please indicate the degree to which you believe that (1) your supplier would agree with the following statements, and (2) you would agree with the following statements. 1. To succeed in this business, it is often necessary to compromise one's ethics. 2. If an employee is discovered to have engaged in unethical behaviour that results primarily in personal gain (rather than corporate gain), he or she should be promptly reprimanded.
(scale: Strongly agree/strongly disagree)	In the future, differences of opinion between my supplier and me will probably be viewed as "just a part of doing business" and will likely result in benefits to both of us.
COMMITMENT & PROPENSITY TO LEAVE (scale: Strongly agree/strongly disagree)	The relationship that my firm has with my major supplier is something we are committed to.
	The relationship that my firm has with my major supplier is something my firm intends to maintain indefinitely.
	The relationship that my firm has with my major supplier deserves our firm's maximum effort to maintain.
(scale: very high/very low)	What do you think are the chances of your firm terminating this relationship within the next six months?
	What do you think are the chances of your firm terminating this relationship within the next year?
	What do you think are the chances of your firm terminating this relationship within the next two years?

(adapted from Morgan & Hunt 1994, 34–35)

The overall results of the research indicated that trust and commitment are the key for co-operative relationship success. In more specific terms, both commitment and trust are the key mediating constructs, and are an important aspect of the relationship-development process. Trust is assumed to lead to commitment, and both commitment and trust are antecedents of co-operation (see Morgan & Hunt 1994, 33 for details).

There are some limitations to this study, however. First of all, only a single informant per company took part in it, which might have biased the results, or rendered them superficial and unable to give a comprehensive picture of the relationship constructs. Second, the relationship constructs were evaluated only from the retailer's side of the dyadic relationships. Even though it was

not the purpose of the study to arrive at an in in-depth conclusion about the state of individual manufacturer–retailer relationships, it should be kept in mind that the nature of relationship constructs is often not one-sided. For example, the evaluation of the communication, co-operation and shared-value constructs from the manufacturer's side, too, might have given additional insights into the nature of the retailers' perceived relationship constructs. Moreover, the lack of an exhaustive list of constructs and the questions/measures applied does not allow for a full evaluation of this research, or for possible replication of this study in another setting.

4.2.4 Mohr & Spekman's (1994) partnership attributes

One example of research on partnerships is Mohr & Spekman's (1994) study on partnership-success factors, with respect to attributes, communication behaviour and conflict-resolution techniques. Mohr & Spekman (1994)[41] investigated the characteristics of partnership success in the context of manufacturer–distributor relationships. More specifically, the unit of analysis was the relationship between a computer dealer and one of its suppliers (i.e. a computer manufacturer). The research was conducted using a mail survey that produced 102 usable responses for analysis.

The partnership relationship was not explicitly positioned among other types of exchange relationship, whether transactional or relational. Yet, partnerships are loosely defined as "purposive strategic relationships between independent firms who share compatible goals, strive for mutual benefit, and acknowledge a high level of mutual interdependence" (Mohr – Spekman 1994, 135).

The research constructs used to evaluate partnership attributes were operationalised using between two and eight questions on a five-point scale for each partnership attribute (see Table 8). In contrast with the Morgan & Hunt (1994) study, for example, Mohr & Spekman provided a full list of relationship constructs and corresponding questions.

[41] Tuten & Urban (2001) have since continued to develop the Mohr & Spekman partnership model with in-depth interview-based research.

Table 8. Partnership attributes

PARTNERSHIP ATTRIBUTE	Question (evaluated on a five-point scale)
COMMITMENT (scale: strongly agree/strongly disagree)	We'd like to discontinue carrying this manufacturer's product (reverse-scored).
	We are very committed to carrying this manufacturer's products.
	We have a minimal commitment to this manufacturer (reverse-scored).
CO-ORDINATION (scale: strongly agree/strongly disagree)	Programs at the local level are well coordinated with the manufacturer's national programs.
	We feel like we never know what we are supposed to be doing or when we are supposed to be doing it for this manufacturer's product (reverse-scored).
	Our activities with the manufacturer are well coordinated.
TRUST (scale: strongly agree/strongly disagree)	We trust that the manufacturer's decisions will be beneficial to our business.
	We feel that we do not get a fair deal from this manufacturer.
	This relationship is marked by a high degree of harmony.
INTERDEPENDENCE (scale: strongly agree/strongly disagree)	If we wanted to, we could switch to another manufacturer's product quite easily (reverse-scored).
	If the manufacturer wanted to, they could easily switch to another reseller (reverse-scored).
COMMUNICATION QUALITY	To what extent do you feel that your communication with this manufacturer is: (scale: timely/untimely) (scale: accurate/inaccurate) (scale: adequate/inadequate) (scale: complete/incomplete) (scale: credible/not credible)
PARTICIPATION (scale: strongly agree/strongly disagree)	Our advice and counsel are sought by this manufacturer.
	We participate in goal setting and forecasting with this manufacturer.
	We help the manufacturer in its planning activities.
	Suggestions by us are encouraged by this manufacturer.
COMMUNICATION (scale: strongly agree/strongly disagree)	We share proprietary information with this manufacturer.
	We inform the manufacturer in advance of changing needs.
	In this relationship, it is expected that any information that might help the other party will be provided.
	The parties are expected to keep each other informed about events or changes that may affect the other party.
	It is expected that the parties will only provide information according to pre-specified agreements (reverse-scored).
	We do not volunteer much information regarding our business to the manufacturer (reverse-scored).
	This manufacturer keeps us fully informed about issues that affect our business.
	This manufacturer shares proprietary information with us (e.g., about products in development)
CONFLICT-RESOLUTION TECHNIQUES (scale: very frequent/infrequent)	Assuming that some conflicts exist over program and policy issues and how you implement the manufacturer's programs, how frequently are the following methods used to resolve such conflicts? Smooth over the problem Persuasive attempts by either party Joint problem solving Harsh words Outside arbitration Manufacturer-imposed domination

(adapted from Mohr & Spekman 1994, 151–152)

The research results indicated that co-ordination, commitment, trust, communication quality, information sharing, participation, joint problem solving, and avoiding the use of smoothing over problems or severe resolution tactics predicted success in a partnership relationship (Mohr – Spekman 1994, 145). A similar list of constructs associated with relationship success is to be found in e.g. Wilson (1995, 337).

Although this partnership analysis was not originally used to evaluate partnership relationships as such, it could be applied in this context as well. In principle, scoring high on each of the partnership-attribute statements indicates a strong and successful partnership. Correspondingly low scores on the partnership attributes characterise a weak and less successful partnership. Morgan & Hunt (1994) do not position their partnership relationship on any relationship-type continuum (e.g., Webster 1992).

Methodologically, this study is somewhat problematic, as the data on partnership attributes was collected only from the retailer side of the dyadic relationship. Without the manufacturer's perspective it can only give a one-sided picture of the partnership reality. Moreover, only one respondent per retailer was selected. Inter-organisational relationships can seldom be reduced to one that involves a single individual. A more comprehensive set of respondents per organisation would have added depth to the analysis.

4.2.5 Lambert et al. (1996): partnering component levels

Like Mohr & Spekman (1994), Lambert et al. (1996) also approached inter-organisational relationships from the perspective of partnership relationships. In general terms, they define the partnership relationship as "a tailored business relationship, based on mutual trust, openness, shared risk and shared rewards that yields a competitive advantage, resulting in business performance greater than would be achieved by the firms individually". However, like Cox (1996, 65), Lambert et al. (1996) define partnerships as a range of relationships between market-driven arm's-length types of trading relations and vertically integrated hierarchies, rather than as a unique relationship type (see Figure 20 below).

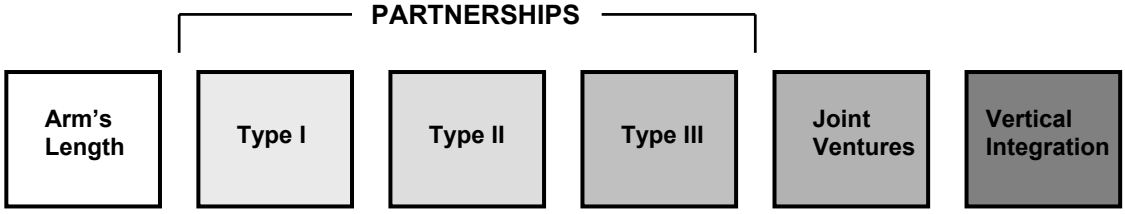


Figure 20. Types of relationship[42] (Lambert et al. 1996, 2)

Lambert et al. (1996) position different partnership-relationship types between arm's-length market relations and joint ventures and hierarchies. This

[42] Similar kind of relationship continua are also to be found in e.g., Webster (1992) and Cox (1996), which is mostly based on Coase (1937) and Williamson (1975 and 1985).

typology ranges from relatively market-driven and adversarial Type-I relations via long-term co-operative Type-II to Type III, which involves high levels of commitment, communication and trust. They also defined each type in more detail elsewhere (ibid., 3)[43].

The organisations involved in the **Type-I partnership** relationship consider each other as partners. To a limited degree, they also co-ordinate activities and planning. Typically this type of partnership has a short-term focus and involves only one division or functional area within each organisation.

Rather than merely co-ordinating activities, organisations involved in **Type-II partnerships** aim at integrating their activities. The partnership has a long-term horizon, although it is not expected to last indefinitely. It also involves multiple divisions and functions from both firms, thus indicating the inter-organisational and inter/intra-functional nature of this relationship type.

Each organisation involved in a **Type-III partnership** views the other as an extension of and an integrated part of their own firm. This is reflected in the willingness to engage in a significant level of operational integration, which could also be assumed to involve high levels of cross-organisational and both inter- and intra-functional co-operation. There tends to be no scheduled end date for this type of partnership.

In addition to merely classifying partnerships, Lambert et al. (1996) also defined a set of partnership components and partnering-component levels, which correspond to the above-mentioned partnership types (see Table 9). The assessment of each partnership component may range from low via medium to high, thus indicating the strength of the relationship-component.

[43] The Lambert et al. (1996) Partnership Model has also been applied in practice (see Newbourne (1997).

Table 9. Partnering component levels

PARTNERSHIP COMPONENT		Low	Medium	High
TRUST	**Trust**	Trust is limited to belief that each partner will perform honestly and ethically	Partner is given more trust than others, viewed as "most favoured" supplier	There is implicit, total trust; trust does not have to be earned
COMMUNICATION	**NON-ROUTINE**	Very limited, usually just critical issues at the task or project level	Conducted more regularly, done at multiple levels; generally open and honest	Planned as a part of the relationship; occurs at all levels; sharing of both praise and criticism; parties "speak the same language"
	DAY-TO-DAY Organisation	Conducted on an ad-hoc basis, between individuals	Limited number of scheduled communications; some routinisation	Systemised method of communication; may be manual or electronic; communication systems are linked
	Balance	Primarily one-way	Two-way but unbalanced	Balanced two-way communication flow
	Electronic	Use of individual systems	Joint modification of individual systems	Joint development of customised electronic communications
SCOPE	**Share**	Activity of partnership represents a very small share of business for each partner	Activity represents a modest share of business for at least one partner	Activity covered by relationship represents significant business to both parties
	Value-added	Relationship covers only one or a few value-added steps (functions)	Multiple functions, units are involved in the relationship	Multiple functions and units are involved; partnership extends to all levels in both organisations
	Critical activities	Only activities which are relatively unimportant for the partner's success	Activities that are important for each partner's success are included	Activities that are critical for each partner's success are included
PLANNING	**Style**	On ad-hoc basis	Regularly scheduled	Systematic: Both schedule and ad hoc
	Level	Focus on projects/tasks	Focus on process	Focus on relationship
	Content	Sharing of existing plans	Performed jointly, eliminating conflicts in strategies	Performed jointly and at multiple levels, including top-management; objective is to mesh strategies; each party participates in the other's business planning
RISK/REWARD SHARING	**Loss tolerance**	Very low tolerance of loss	Some tolerance of short-term loss	High tolerance of short-term loss
	Gain commitment	Limited willingness to help the other party gain	Willingness to help the other party gain	Desire to help other party gain
	Commitment to fairness	Fairness is evaluated by transaction	Fairness is tracked year to year	Fairness is measured over the life of the relationship
JOINT OPERATING CONTROLS	**Measurement**	Performed measures are developed independently and results are shared	Measures are jointly developed and shared; focused on the individual firm's performance	Measures are jointly developed and shared; focused on relationship and joint performance
	Ability to make changes	Parties may suggest changes to the other's system	Parties make changes to the other's system after getting approval	Parties may make changes to each other's system without getting approval
COMMITMENT	**Commitment to each other's success**	Commitment of each party is to a specific transaction or project; trust must be constantly "re-earned"	Commitment is to a longer-term relationship	Commitment is to partner's long-term success; it prevails across functions and levels in both organisations
CONTRACT STYLE	**Time frame**	Covers a short time frame	Covers a longer time frame	Contracts are very general in nature and are evergreen, or alternatively the entire relationship is on a handshake basis
	Coverage	Contracts are specific in nature	Contracts are more general in nature	Contract does not specify duties or responsibilities; rather, it only outlines the basic philosophy guiding the relationship
INVESTMENT	**Financial**	There is low or no investment between the two parties	May jointly own low-value assets	High-value assets may be jointly owned
	Technology	No joint development of products/technology	There is some joint design effort and there may be some joint R&D planning	There is significant joint development: regular and significant joint R&D activity
	People	Limited personnel exchange	Extensive exchange of personnel	Participation on the other party's board

(adapted from Lambert et al. 1996, 12)

In the above partnering component level descriptions, low corresponds to a Type-I partnership, scoring high on the majority of partnering components reflects Type-III partnership status, and a majority of medium scores corresponds to Type II. This classification is applicable to both establishing new partnerships and diagnosing existing relationships. (Lambert et al. 1996, 13)

It is not only the components and corresponding partnership types, but also the drivers and facilitators, in terms of motivating and enabling elements for successful partnership formation and maintenance, that are also considered important. Partnership drivers are defined as the compelling reasons to partner, which may include asset/cost efficiencies, customer service, marketing advantage and profit stability/growth. Partnership facilitators, on the other hand, include supportive environmental factors that enhance partnership growth, such as corporate comparability, shared competitors and shared end users. (Lambert et al. 1996, 4-8)

The findings of Lambert et al. (1996) are based on detailed case studies of 18 relationships, with the dyadic relationship as the unit of analysis. All in all, 60 in-depth interviews were conducted with representatives of both companies engaged in the relationships. In their methodological choice, the authors addressed some frequently-cited criticism[44] of partnership research, which could broadly be interpreted to apply to all empirical research on relationships.

Some partnership research has relied only on the other party's perception of the relationship, and as Lambert et al. (1996) rightfully argue, "Future research on partnerships must have the partnership dyad as the minimum unit of analysis". The use of mail surveys as the primary research method may also result in misinterpretation of the questions by the respondents. Although, e.g. mail surveys in principle allow for large number of respondents, researchers have typically relied on too few informants, specifically when only one informant per company is involved.

4.2.6 Sinclair et al. (1996): characteristics of partnership models

One representative of the evolutionary approach to inter-organisational relationships is Sinclair et al.'s (1996) classification of different models of collaborative relationships between customers and suppliers. They investigated the array of different collaborative-relationship types ranging from the dichotomous arm's-length relationship to vertical integration.

The authors identified four different models of collaborative relationships, which they tested empirically in a manufacturing-industry context: the demands model, the audits model, the supplier-development model and the partnership model. The unit of analysis in the investigation was the firm and its activities relating to the supplier relationship. The research sample was collected using a mail-in questionnaire resulting in 190 usable responses from manufacturing firms with plants in Britain. Of the total number of respondent

[44] See also Weitz & Jap (1995) and Seppälä (2001) for similar argumentation.

firms, nearly 80% were British, while 10% were of other European and 6% of US origin.

Sinclair et al. (1996) characterised each of the collaborative-relationship models in terms of four dimensions: verification, support activities, the development of joint activities, and bounded relationships. No explicit definition of these constructs is provided, but their key characteristics in each relationship model are implicit in Table 10, which describes the relationship models in terms of these four dimensions.

The empirical relationship models discussed earlier relied on very similar descriptive dimensions, mostly of behavioural orientation, such as trust, commitment and shared values, as well as more tangible characteristics such as co-operation, communication and risk/reward sharing. The Sinclair et al. (1996) dimensions, although different in terms of terminology, could also be considered to portray similar characteristics to those of the other models.

Table 10. Collaborative-style relationship models and model characteristics

ACTIVITY	**COLLABORATIVE-RELATIONSHIP MODEL**			
	Demands Model	**Audits Model**	**Supplier-Development Model**	**Partnership**
VERIFICATION	Output and delivery specification: ex post through initial selection may use BS/ISO standards	Move to ex ante verification covering output from manufacturing and quality control processes	Move to verification of inputs to control processes: high rating required for performance measures	Reduced verification but monitoring, spot checks; may be market testing at intervals
SUPPORT ACTIVITIES	Basic information only	Extended information on future orders; loan of tools, dies; minor investment, limited training, learning visits possible	Sharing of systems expertise, diffusion of management techniques, e.g., SPC, TQM; training and visits intensified.	More likely to be mutual, two-way, with resource support
JOINT ACTIVITIES DEVELOPMENT	Nil	Exploring scope for extending product range, flexibility potential; limited problem solving on technical matters	Joint development in R&D; joint problem-solving teams: new-product development, process improvement	More emphasis on joint development, tackling problems of a more open-ended kind; increased information sharing e.g., on costs
BOUNDED RELATIONSHIPS	Closely defined contract for specific goods and time period	Limited assurance of continuing orders subject to performance; prospect of expanded trade	Increased sense of flexibility, inter-dependence over defined range of activity; time horizon open	Expected time horizon unlimited; problem solving extended to joint learning; governance structure developed

(adapted from Sinclair et al. 1996, 66)

The relationship models and their characteristics were gathered from a number of journal articles and other sources (see Sinclair et al. 1996 for details). The authors argue that relationship development takes an evolutionary path from more simple and adversarial relationships to more collaborative partnership-like models. In principle, the “demands model”, indicates a more adversarial and arm’s-length supplier-relationship type, while the “partnership” characteristics indicate a more developed and collaborative relationship type.

The models were tested to see whether real-world relationships between customers and suppliers would display these characteristics. In short, this empirical investigation showed that, of the respondent firms, 20 used the demands model, 121 the audits model, and 42 the supplier-development model: some of the last-mentioned displayed partnership characteristics[45] (Sinclair et al. 1996, 72).

In the empirical part of the study the authors admit that the respondents may have been biased towards companies that had paid particular attention to their supplier relations (Sinclair et al. 1996, 67). Methodologically, too, the study is somewhat problematic, as conclusions were drawn about inter-organisational relationships based only on the buyer's perspective. Moreover, the use of single informant per company may not provide an accurate picture of even the buyer's operations in inter-organisational relationships. Sinclair et al. (1996, 61–62) discuss the role of culture and cultural match in relation to partnerships in their article. Yet, in the analysis section, they do not address the role-respondent culture (British, other European and US) at all when interpreting the respondent data. They also stress the importance of trust as the basis for relationship development (e.g., pp. 58 and 73), but fail to include it explicitly in their relationship-model characteristics.

4.2.7 Janda et al. (2002): relational orientation

The Janda et al. (2002) study aims at identifying the impact of relational orientation in buyer-supplier relationships in increased purchased-product quality, both reduced acquisition and possession costs, and finally their relationship to satisfaction. The authors defined relational orientation as an integrated construct comprising five key aspects: supplier flexibility, supplier assistance, information provided to the supplier, supplier monitoring, and expectations of continuity (Janda et al. 2002, 413). They developed a model and a set of research hypotheses on the basis of relational orientation, product quality, possession costs, acquisition costs and satisfaction constructs.

The empirical investigation was conducted in the context of US-based manufacturing firms. Only the buyer firms were represented, and only by a single informant (i.e. purchasing executive), in spite of the fact that the unit of analysis was the dyadic buyer-supplier relationship. The research method was survey-based with 157 usable answers. (Janda et al. 2002, 414–415) As in many of the other studies reviewed above, Janda et al. (2002) provide only a

[45] It remains unclear what kind of relationship models the remaining 7 firms had.

sample of the items used to measure each of the relational-orientation constructs. Table 11 shows only those of the model and sample measures.

Table 11. Relational-orientation elements

ELEMENT OF RELATIONAL ORIENTATION	Sample Measure/Question (evaluated on a seven-point scale)
SUPPLIER FLEXIBILITY (scale: strongly agree/strongly disagree)	This supplier is flexible in response to requests we make.
SUPPLIER ASSISTANCE (scale: strongly agree/strongly disagree)	The supplier makes an effort to help us during emergencies.
INFORMATION PROVIDED TO SUPPLIER (scale: strongly agree/strongly disagree)	We keep our supplier informed of production plans.
SUPPLIER MONITORING (scale: strongly agree/strongly disagree)	We monitor suppliers' inventory levels.
EXPECTATION OF CONTINUITY (scale: strongly agree/strongly disagree)	We expect our relationship with this supplier to last a long time.

(adapted from Janda et al. 2002, 415)

The results of this study suggest that relational orientation is positively related to purchased-product quality. In addition, in light of the Janda et al. (2002) study, increased relational orientation result in decreased acquisition and possession costs. Ultimately, all these constructs would appear to lead to relationship satisfaction.

This study only involved the buyer's side of the relationship, with only a single informant providing the relationship characteristics. As in other studies with similar characteristics, perhaps more balanced results would have been achieved had the buyer also been involved. The use of multiple informants could also have added value to the study.

4.2.8 Abratt & Kelly (2002): partnership-success factors

Key-account management and the perceptions of suppliers and their key-account customers regarding the success factors of customer–supplier partnerships are the focal point of interest in Abratt & Kelly's (2002) study. The research population consisted of suppliers and their customers with key-account status in South Africa (Abratt – Kelly 2002, 470). The industries represented included medical, retail and banking. In total, 98 key-account customers and 92 key-account suppliers returned usable responses in this survey-based study with only a single informant per company involved. The unit of analysis was both the buyer's and the supplier's perceptions of key-account management strategy. The companies involved were selected on the basis of industry information, and through corporate referrals, which of companies that had implemented key-account management at least a year previously (Abratt – Kelly 2002, 470).

The purpose of the Abratt & Kelly (2002) study was not to assess buyer-supplier relationships as such. However, in addition to elements focused on assessing perceptions of the key-account management programme, the measures applied also have characteristics that could be used to evaluate buyer-supplier relationships. Table 12 below lists all the research questions used in the Abratt & Kelly (2002) study, grouped when possible to represent trust, communication, co-operation, risk/reward sharing and commitment. Each question was evaluated on a five-point Likert scale, and the same ones were used to evaluate both buyer and supplier perceptions.

Table 12. Success factors in customer–supplier partnerships

RELATIONSHIP COMPONENT	Question (evaluated on a five-point scale) scale: 1=strongly disagree/5=strongly agree)
TRUST	3. The forming of close interpersonal relationships between key-account managers and their key-account customers is essential to the success of the long-term partnership.
	5. Customer–supplier partnerships usually result in a breach of contract.
	13. Key-account managers must have strong interpersonal skills, e.g., the right kind of personality and reliability.
	15. The key-account manager must be seen to have a high level of integrity in order to be trusted by the key-account customer.
COMMUNICATION	10. It is important for key-account managers and their key-account customers to share confidential information concerning issues that may influence their operation.
CO-OPERATION	1. Key-account managers must have the ability to identify problems and provide solutions within their key accounts.
	2. The key-account manager should have a sound knowledge of the customer's strategic direction.
	6. It is important for the key-account manager to anticipate the customer's future needs.
	8. The key-account manager must understand the customer's main concerns.
	9. The key-account managers must be familiar with who their key-account customers' competitors are, and what impact they have on their businesses.
	21. Key-account customers are usually aware that their main suppliers have created a unique way of managing the relationship between themselves and their key customers.
RISK/REWARD SHARING	7. It is possible for the key-account customer to quantify the additional value-added services that the key-account manager provides to them.
COMMITMENT	4. It is important for executive management (besides the key-account manager) to become involved in the customer's business.
	17. When necessary, key-account managers commit their company resources to their key customers, i.e. equipment, knowledge and personnel.
	19. Executive management plays an essential role in the customer–supplier relationship.
Others	11. Key-account managers must have well-honed negotiation skills
	12. Key-account customers understand the reason for the development of customer–supplier partnerships.
	14. Key-account managers are generally well suited to the appropriate key-account customer.
	16. Key-account managers have the necessary authority and mandate to deal with the customer's problems and to provide the appropriate solutions.
	18. Key-account customers are willing to accept additional value-added benefits (other than the cost of the product or service) when negotiating long-term contracts with their main suppliers.
	20. It is important for the key-account customer to understand the managerial practices and principles of key-account management.
	22. Key-account customers are only interested in what the product or service will cost when dealing with their main suppliers.

(adapted from Abratt & Kelly (2002, 471) by allocating each question to the relationship-component categories)

The research results suggest that both suppliers and buyers have similar perceptions of the key success factors in the customer–supplier partnership. In

addition to some key-account management specific conclusions the results suggest that both buyers and sellers consider communication (i.e. the sharing of confidential information), trust and commitment as important key success factors in a partnership relationship. (Abratt – Kelly 2002, 474–475)

Unlike many other researchers on inter-organisational relationships, Abratt & Kelly (2002) involved both buyers and suppliers in evaluating the relationship constructs. They also fully described the questions and measures they applied in their study of partnership-success factors. Both the buyer and supplier responses were grouped and analysed statistically. However, one-to-one matching of individual buyer and supplier responses and more detailed investigation of some of the paired relationships might have provided additional insights into the focal area of interest. The study was conducted in a single-informant setting. Almost by definition, key-account management is a concept revolving around, if not single, then a limited number of individuals. Yet, one might assume the implications of key-account management programmes to extend beyond the key-account manager, which would perhaps also call for a greater number of informants to be involved.

4.2.9 Other inter-organisational relationship assessment models

Stuart & McCutcheon (1995) investigated possible **problem sources in establishing supplier alliances**. This study compares perceptual differences between matched samples of buyers and suppliers engaged in a relationship. Supplier alliances are characterised by the buyer e.g. providing more information about future order quantities, upcoming design changes and long-range plans. The supplier is also typically more involved in the R&D activities, and the buyer commits a larger share of its purchasing volume over an agreed period of time to the supplier. The authors rightfully argue that both buyer and supplier should have similar perceptions concerning the level of alliance, as illustrated in Figure 21 below.

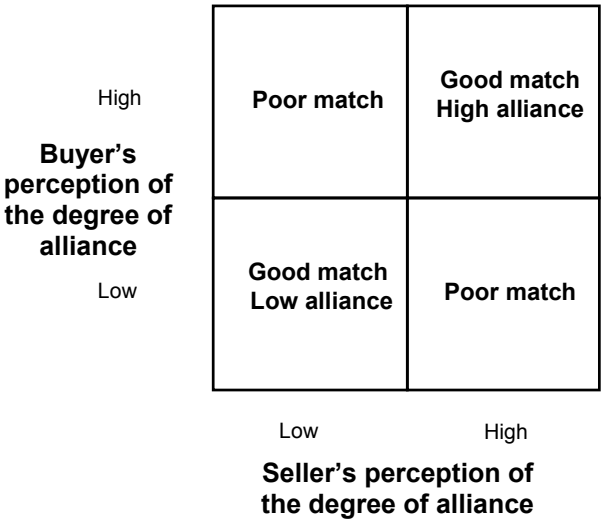


Figure 21. Possible buyer-supplier-alliance perceptions (Stuart – McCutcheon 1995, 4)

Similar thinking has been put forth already earlier by Krapfel et al. (1991) in their buyer-seller relationship type and management-mode mapping. The foundation of this study was in the concept of relationship value as the basis for the determination of relationship type. Despite attempts to operationalise the concepts developed, the study is mostly concerned with concepts and definitions, and no empirical relationship investigation is included. Hogan (2001), on the other hand, also developed a measure for "expected relationship value", based on the assessment of the probability of benefits from cost-reduction, just-in-time and early-supplier-involvement programmes.

The unit of analysis in the Stuart & McCutcheon study was the paired buyer-supplier relationship. The empirical investigation was conducted in Midwest, USA, and the questionnaire respondents were selected from a local well-known industrial catalogue. The original sample consisted of 980 purchasing executives, and ultimately 88 paired buyer-supplier relationships from various industries and types of firms were used in the analysis. (Stuart – McCutcheon 1995, 6)

There were only two measured relationship constructs, which were evaluated using multiple survey questions on a five-point Likert-type scale. The first measure was the extent of joint problem solving that occurred, and the other was the extent to which the achieved benefits were shared. (Stuart – McCutcheon 1995, 6)

Ellram (1995) introduced a five-phase **managerial guideline for the development and implementation of purchasing partnerships**. Although this study does not have an empirical part, it illustrates the whole chain of

necessary steps for establishing, and also maintaining, partnership relations with suppliers.

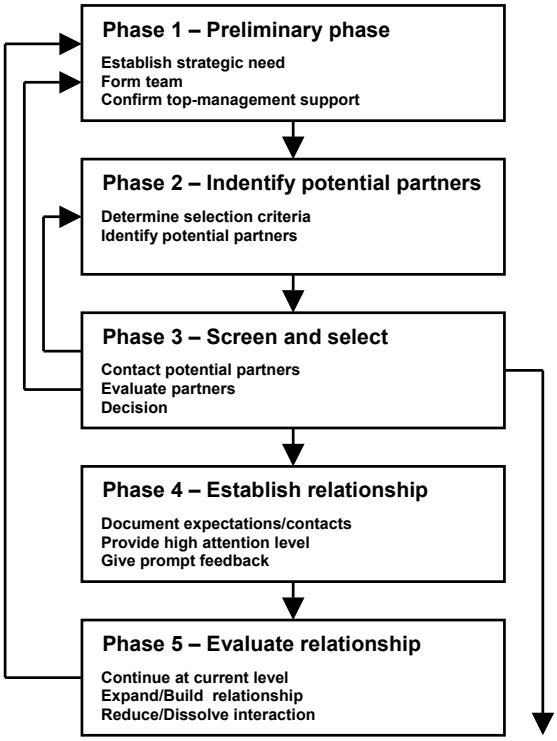


Figure 22. Five phases in the development and evolution of purchasing partnerships (Ellram 1995, 12)

Ellram (1995, 14) stresses the importance of establishing a solid foundation "on which to build a strong, ongoing relationship based on mutual trust, sharing, and commitment. A partnership will work only if it is beneficial to both parties." In the establishment phase of the five-phase model, the relational "soft" elements of the relationship appear to be of critical importance to successful partnership implementation. However, at the final – yet on-going – phase of the guideline, the relationship is only evaluated on the basis of "hard" performance criteria such as quality, reliability and cost (Ellram 1995, 14). In other words, Ellram's guideline does not evaluate its foundation of "soft" relationship elements in any way once a partnership has been established. A combination of both soft and hard criteria should give a more accurate evaluation of the economic performance of the relationship, and an indication of the state of the relational characteristics of the partnership.

Japanese buyer-supplier relationships have been a relatively popular area of research in the past two decades. For example, Hines (e.g., 1996a and 1996b) actively investigated **network sourcing** e.g. in the context of the Japanese automobile industry. However, instead of focusing on a single dyadic buyer-supplier relationship, he investigated supplier networks in multiple industries

and formulated a list of typical network-sourcing characteristics. According to Hines (1996a, 19), the network-sourcing model is "derived from observations of the best practice buyer-supplier relationships from around the world, but particularly from Japan".

Network sourcing is characterised by "a tiered supply structure with a heavy reliance on small firms", where the network members are engaged in close, long-term relations characterised by high levels of openness, trust and profit sharing. In addition, the interaction between the buyers and the sellers is not limited to buying and selling, as the relationships often involve high asset specificity and bilateral research and development activities[46]. (Hines (1996b, 15)

Despite extensive research on the subject of network sourcing – primarily in Japanese industry – the results are more descriptive than of solid practical use in analysing buyer-supplier relationships. Instead of focusing on single buyer-supplier relationships, the network-sourcing model describes the characteristics of a whole network of supplier relationships centred on one focal company.

The network sourcing model has been claimed to be highly effective (Hines 1996a, 7), yet the recent track records of Japanese industry and automobile makers have demonstrated that network sourcing may also fail to produce superior results in times of serious economic down-turn. One consequence of this was Renault's recent acquisition of Nissan[47] (Doran 2000, 24). In addition, the applicability of the "Japanese model" beyond the Japanese or similar cultural environment and industrial structure has been questioned (Turnbull et al. 1992).

Methodologically, the Hines et al. (1996b) study involves both buyer and seller organisations, but it only used single informants. Moreover, the authors' do not provide even a sample of the questions used to evaluate the two relationship constructs under investigation. The methodology described in the article does not allow the reader to reuse the same research questions, or to assess the validity of the research conducted.

4.2.10 Concluding remarks on inter-organisational relationship assessment models

The inter-organisational relationship assessment models presented above are typical examples of how the empirical relationship research has been

[46] For a more comprehensive list of network-sourcing characteristics, see Hines (1996b, 15).

[47] It should also be noted that the previously loss-making automobile maker Nissan returned to profitability after one year of Renault ownership.

approached and conducted in recent years. Some of the studies rely on mail-in questionnaires with large numbers of respondents, and some on case-study based interviews with fewer informants.

Some partnership research has relied only on the other party's perception of the relationship, and Lambert et al. (1996) rightfully argue, "future research on partnerships must have the partnership dyad as the minimum unit of analysis". Mail surveys as the primary research method may result in respondents misinterpreting the questions. Although, in principle, such surveys allow for large numbers of respondents, partnership research has typically relied on too few informants, sometimes involving only one per company.

Details of the operationalisation of the relationship constructs are, in some cases, left undisclosed. For example, Anderson & Narus (1990), Morgan & Hunt (1994), Stuart & McCutcheon (1995) and Janda et al. (2002) provide, at best, only sample questions for each relationship construct. This seriously limits the reader's opportunity to evaluate the research.

The results of studies on the inter-relationships between different relationship constructs have hardly reached a consensus. Some researchers argue that trust leads to communication, while others have found that communication leads to trust. For example, Dwyer et al. (1987, 23) implicitly hypothesise that trust causes communication, whereas some writers argue that communication leads to trust (Morgan & Hunt 1990, 33). Anderson & Narus (1990, 54) claim that co-operation is the causal antecedent of trust, whereas Morgan & Hunt (1994) posit that commitment and trust are the antecedents of co-operation. For some, trust and commitment are the key variables in making relationships work, while others stress dependence and do not even recognise commitment as a key variable.

There are several elements in the characteristics of a developed partnership (Type III in the Lambert at al. (1996) typology) indicating that, in order to investigate very developed relationships, one must look beyond the dyadic relationship between the parties and also investigate the "inner workings" of the organisations involved in the relationship. For example, Lambert et al. (1996) suggest that partners in a very developed Type-III partnership do their planning jointly and at multiple levels, even to the extent that they participate in each other's business planning. Communication occurs on all levels, and the parties "speak the same language". Both parties are also highly committed to their partnership across functions and levels on both sides. The scope of the Type-III partnership involves multiple functions, units and levels in both organisations. It is worth noting that, somewhat surprisingly, Lambert et al. (1996) for the most part, and Janda et al. (2002) to some extent, recognised the role of developed inter-organisational relationships in enabling and supporting successful supply chain management activities.

Organisations engaged in Type-III partnership relationships are active on all levels of the organisation and across both functions and units. They "speak the same language", are committed to the relationship and jointly plan their activities, both internally in their respective organisations, functions and units and externally with their relationship partner. Consequently, Type-III partnerships (inter-organisational relationships) would appear to necessitate very high consensus within the participating organisations and units (inter-functional relationships), and also within functions (intra-functional relationships). In other words, from a methodological standpoint, partnership research should clearly move beyond inter-organisational dyadic relationships to take into consideration the inter-functional and intra-functional relationship perspectives as well.

Similar argumentation is also to be found in the literature on relationship marketing that focuses more on the seller's side of the relationship. "In addition to communication with customers, it is essential that a company establish intrafirm communication, particularly among all individuals and corporate functions that play direct roles in managing relationships with specific customers or customer groups." (Parvatiyar – Sheth 2000, 22) This argument should be equally applicable to suppliers and the management of supplier relationships.

The buying centre, whether it is a single firm or a set of functions involved within a firm, often consists of more than one person. These individuals are embedded in relationships with the seller firm and within the buying firm itself (Backhaus – Büschken 1997, 14).

All in all, it would appear that the use of multiple informants is a must in research on developed relationships, not only between organisations but also within them, in order to produce a more comprehensive picture. Investigations of the inter-relationships between different relationship constructs also appears to produce conflicting results, and all in all, there appears to be limited consensus on which relationship constructs are really applicable to the business relationship context.

4.3 Models for assessing inter-functional relationships

"Organisational buying behavior is a complex process (rather than a single, instantaneous act) and involves many persons, multiple goals, and potentially conflicting decision criteria. It often takes place over an extended period of time, requires information from many sources and encompasses many inter-organisational relationships" (Webster – Wind 1972, 14–15), as well as inter-functional relationships. "The buying center includes all members of the

organisation who are involved in that process" and "their relationships with one another involve all the complexities of interpersonal interactions" (Webster – Wind 1972, 15). In the mid-1980s, "marketers have focused mainly on information needs and choice criteria and have not examined information flows between and among other organisational units and the buying center". There had been little attempt to conduct research on the interaction between the buying center and other organisational units. (Spekman – Gronhaug 1986, 52)

There are some typical areas of collaboration between purchasing and design personnel. These highly product-design-oriented areas of collaboration include developing specifications and interchangeable parts, part standardisation and simplification, value analysis, and part substitutions and exclusions (Dowlatshahi 1992, 23). From the R&D perspective, concurrent engineering is an activity involving not only suppliers, but also other company functions such as purchasing (O'Neal 1993, 6).

In their conceptual study, Narus & Anderson (1995) discuss the role of the team-based approach to managing collaborative relationships such as partnerships. Gupta et al. (1986) developed a conceptual framework or model for studying the R&D and marketing interface in the product-innovation process, but it was not tested or applied empirically. Wynstra et al. (1999; 2000) developed a conceptual framework and discussed both driving and enabling factors for purchasing involvement in product development. Many empirical studies on inter-functional relationships and interaction have focused on the interface between R&D and marketing, (e.g., Gupta et al. 1985). Griffin & Hauser (1992) investigated the patterns of communication between marketing, engineering and manufacturing. Song et al. (1997; 1998) investigated the antecedents and consequences of cross-functional co-operation and joint involvement between marketing, R&D and manufacturing across different product-development stages. From the organisational perspective, Murphy & Heberling (1996) discussed the relationship between purchasing and R&D in new-product development, and argued for a shift from functional orientation to "integrated product teams".

However, there appear to be very few empirical studies on inter-functional relationships that view such activities from the perspective of purchasing/procurement. Nevertheless, the intention in the following sub-sections is to review more closely some recent empirical studies on inter-functional relationships. Each study is evaluated e.g. in terms of its focal area of investigation, the unit of analysis, the research method, and both the research constructs used and the measures applied.

4.3.1 Kahn (1994): interdepartmental interaction and collaboration

Kahn (1994) approaches the inter-functional aspect in company operations from the perspective of interdepartmental integration, defined as consisting of both interaction and collaboration activities between the participating departments. Interaction is defined to include activities and forums such as committees, meetings, telephone calls, and memorandums & reports. Collaboration, on the other hand, involves e.g. collective goals, mutual understanding and shared resources in an informal manner. "In the collaboration philosophy, continuous relationships between the departments are stressed, not just transactions between departments." (Kahn 1994, 140–141)

In the context of product-development activities, his study aims at investigating the impact of interaction and collaboration on product development performance. The unit of analysis is the relationship between functional managers in marketing, R&D and manufacturing, with no specific one-to-one matching of individual parties to a relationship.

The empirical research was conducted using a survey-based research method. The mail survey was sent to 860 electronics-industry companies. After two mailings there were, in total, 514 managers participating, of which 177 were marketing managers, 157 were manufacturing managers, and 180 were R&D managers. The constructs used to measure interaction were adapted from some previous studies on interdepartmental relationships (see Kahn (1994, 143) for details). The table below lists the constructs and measures used in the evaluation.

Table 13. Interdepartmental integration and collaboration constructs

INTERACTION & COLLABORATION CONSTRUCTS	**Measure (evaluated on a five-point scale)** (Never, Seldom, Occasionally, Often, Quite Frequently)
MEETINGS During the past 3 months, to what degree did your department interact with the other two departments in regards to the below activities?	Meetings
	Committees/Task forces
	Phone conversations
	Phone mail
	Electronic mail
DOCUMENTED INFORMATION EXCHANGE During the past 3 months, to what degree did your department interact with the other two departments in regards to the below activities?	Exchange of forms
	Exchange of reports
	Exchange of memorandums
	Exchange of fax materials
COLLABORATION During the past 3 months, to what degree did your department pursue the following activities with the other two departments?	Achieve goals collectively
	Have a mutual understanding
	Informally work together
	Share ideas, information, and/or resources
	Share the same vision for the company
	Work together as a team

Adapted from Kahn (1994, 151). Measures for product-development and management performance have been excluded from the table.

In short, the results suggest that collaboration plays a major role in both successful product development and product management, in contrast to previous studies stressing the importance of interaction alone. High levels of collaboration (not only interaction) predicted successful inter-departmental integration and performance. (Kahn 1994, 147)

The Kahn (1994) survey was developed to evaluate interaction and collaboration in interdepartmental product development. Only single informants, department managers, were used to provide the relationship data. It may very well be that department heads are not the best informants to provide details of e.g. interdepartmental electronic-mail exchange and mutual understanding in some lower-profile collaborative research project.

Despite the emphasis on the relationship, concepts such as trust and commitment were not explicitly studied. Moreover, without one-to-one matching of the respondents and more detailed questions, it is very difficult to e.g. determine the extent of mutual understanding. The score on mutual understanding measure may be high even though both respondents may have provided answers in the spirit of "be reasonable – see it my way", and thus did not have genuine mutual understanding. An alternative research method may have allowed this kind of problem to be by-passed. Nevertheless, this type of study, with a full description of the methods and measures used, allows other researchers to fully evaluate the research method and to replicate the study in a different context.

4.3.2 Trent & Monczka (1994): the performance of cross-functional sourcing teams

Cross-functional sourcing teams and their performance are the focal point of interest in Trent & Monczka's (1994) study. Cross-functional sourcing teams are defined as consisting of personnel from at least three company functions, working together to achieve some purchasing- or materials-related assignment. The study[48] aims at identifying the factors that affect the success of such a team[49]. (Trent – Monczka 1994, 4) The unit of analysis is the cross-functional sourcing team and not the relationships between the company functions of the team members.

The empirical investigation was conducted using a survey-based research method. The questionnaire was sent to 727 individuals in 18 US-based firms

[48] This study is part of a larger research project on cross-functional-sourcing-team performance conducted during 1992-1993 by researchers at Michigan State University (Trent – Monczka 1994, 4).

[49] Trent also later investigated the concept of leadership (Trent 1996) and the role of individual and collective team effort in cross-functional sourcing teams (Trent 1998).

from industries ranging from farm equipment to computing devices. Of this population, 107 cross-functional sourcing teams were identified. Different surveys were prepared for each of the three recipient types: team member, team leader and external rater. (Trent – Monczka 1994, 4–5)

Trent & Monczka do not aim in their article to present detailed statistical analyses, but they rather focus on the key exploratory findings and conclusions from the research project (Trent – Monczka 1994, 6). The performance of the cross-functional sourcing teams was evaluated on a nine-point scale using the dimensions and questions/statements presented in Table 14 below.

Table 14. Cross-functional sourcing team effectiveness dimensions

EFFECTIVENESS DIMENSION	Question (evaluated on a nine-point scale)
GENERAL OVERALL TEAM PERFORMANCE	Quantity or amount work produced by the team.
	Quality or accuracy of work produced by the team.
	Team's reputation for work excellence.
	Efficiency of team operation.
	Morale of team personnel.
	Team's ability to communicate and coordinate activities across functional boundaries.
	Team's ability to work with other's outside the team.
	Team's ability to meet timing and task scheduled targets.
	Team's ability to meet executive management's performance expectations.
INNOVATION PERFORMANCE	Team's innovation effectiveness.
SUPPLY-BASE MANAGEMENT PERFORMANCE	Team's ability to support reduced product-development cycle time for new products.
	Team's ability to improve delivery-performance time from suppliers.
	Team's ability to reduce material-ordering cycle-time between buyer and supplier.
	Team's ability to support inventory reduction.
	Team's ability to support standardisation of purchased items and/or finished products.
TIME-REDUCTION PERFORMANCE	Team's ability to reduce purchased item costs.
	Team's ability to improve purchased item quality.
	Team's ability to support the increased use of supplier technical abilities.
	Team's ability to develop procurement strategies that directly support business-unit strategies.
	Team's ability to support the achievement of new product-performance targets.
	Team's ability to achieve best-in-class supplier selection.
	Team's ability to improve supply-base responsiveness.
	Team's ability to provide access to new product and process technology before competitors have access to the technology.
	Team's ability to develop supplier-performance capabilities.
	Team's ability to achieve supply-base optimisation targets.
	Team's ability to support early sourcing and supplier participation during product design.
	Team's ability to foster the development of new technology by suppliers for company use.
	Team's ability to establish strategic relationships with suppliers.

(adapted from Trent – Monczka 1994, 11)

The Trent & Monczka questionnaire was used to assess sourcing-team effectiveness, and was not as such applied in evaluating the relationship

between different functions participating in the cross-functional sourcing team. However, there are elements that are linked to relational elements between the participating functions, and also between the buyer and supplier organisations. Yet, elements such as trust and commitment are missing from their effectiveness dimensions.

Methodologically, this study evaluates the cross-functional sourcing team and its effectiveness only on the team level, and does not even mention the functional areas involved. Further investigation into the interplay between individual cross-functional sourcing-team members might have provided additional insights into the subject.

4.3.3 Song et al. (1997): cross-functional co-operation

Song et al. (1997) investigated the antecedents and consequences of cross-functional co-operation in new-product development (later also referred to as NPD) between R&D, manufacturing and marketing. They developed a structural model for successful cross-functional new-product development consisting of internal facilitators, external forces, cross-functional co-operation and NPD performance. A survey instrument was used to measure the cross-function NPD research-model constructs. The table below gives a full list of the research questions they used in their survey.

Table 15. Antecedents and consequences of cross-functional co-operation

ANTECEDENT AND CONSEQUENCE CONSTRUCTS	**Measure (evaluated on a 0-10 scale)** (Scale: 0=Strongly disagree… 10=Strongly agree)
INTERNAL FACILITATORS	Formal evaluation criteria for teamwork exists
	Team members' evaluations are based on team performance
	The functions share equally in the rewards from a successful new product
	Top management promotes team loyalty over functional loyalty
EXTERNAL FORCES	Predictability of competitors' product-design changes
	Predictability of technological changes
	Predictability of market demands
CROSS-FUNCTIONAL CO-OPERATION	People from all three departments interact
	Open communication among all three departments
	Similar goals and objectives among the three departments
	Overall satisfaction with interdepartmental relationships
	There is a give-and-take relationship among the three departments
PERFORMANCE	The NPD program has met our objectives
	The NPD program has been successful
	Compared to our competitors, our NPD cycle time is shorter
	Compared to our competitors, our new-product quality is higher

(adapted from Song et al. 1997, 47)

This study was conducted in the context of Mexican high-technology firms. The research data was collected using a mail-in survey. Usable responses were

received from 291 R&D managers, 122 manufacturing managers and 185 marketing managers, with an effective company response rate of 66% (598/900). (Song et al. 1997, 41)

The results of this study suggest that external forces do not significantly affect cross-functional co-operation or internal facilitators. In the NPD context, inter-functional co-operation was found to be positively related to performance. As expected, the internal facilitators (i.e. cross-functional metrics and risk/reward mechanisms) were found to positively affect the cross-functional co-operation as well as the resulting performance outcomes. (Song et al. 1997, 43–44) This study did not utilise concepts such as trust and commitment.

Only a single informant per department was involved in this study, which may have resulted in a less-than-full picture of the true extent of cross-functional co-operation. On the positive side, the authors give a very detailed description of the research, which allows the reader to evaluate the methods and constructs used.

4.3.4 Morgan & Piercy (1998): interdepartmental dynamics

The Morgan & Piercy (1998) study aimed at extending our knowledge of inter-functional relationships involving marketing and other functions, especially interaction with the quality department. The unit of analysis was the dyadic relationship between marketing and quality departments. All in all, quality in the organisation is the dominant theme in the study.

The empirical investigation was conducted in the UK with multiple industry representation. The data-collection method was a pooled response mail-in survey, which was mailed to the general managers, the marketing managers and the quality managers at the level of the strategic business unit (SBU). The total number of usable responses was 1018, including 298 general managers, 351 marketing managers and 398 quality managers[50]. Of the total number of respondents, 171 SBUs returned all three questionnaires, which would have allowed for matching and further analysis of the responses on the individual SBU level as well.

The research constructs used to evaluate the interdepartmental dynamics between the marketing and quality departments were operationalised using multiple questions for each construct (see Table 16 for details).

[50] There is some discrepancy in the figures for the total number of respondents, since 298 + 351 + 398 ≠ 1018.

Table 16. Constructs for interdepartmental dynamics

INTERDEPARTMENTAL CONSTRUCTS	Measure (evaluated on a seven-point scale)
INTERDEPARTMENTAL CONNECTEDNESS SCALE: Strongly disagree ←→ Strongly agree	Members of one department feel comfortable telephoning members of the other
	Members of one department are easily accessible to the other
	The marketing and quality people here talk "different languages", which makes it difficult to communicate
	Both departments volunteer information and ideas that they feel affect the other
	Individuals in one department will only contact someone in the other when it is strictly necessary
INTERDEPARTMENTAL COMMUNICATION FREQUENCY SCALE: Never ←→ Very frequently	Individual face-to-face contact
	Meetings between teams
	Telephone calls
	Written memos and reports
	Electronic mail
INTERDEPARTMENTAL CONFLICT SCALE: Strongly disagree ←→ Strongly agree	Tensions frequently run high when members of the two departments work together
	People from either of these departments dislike having to work with those in the other
	There are no disagreements between the two departments over the way services are provided between them
	There is often tension over the specific terms of the working relationship between the two departments
	Members of both departments feel that the goals of their respective departments are in harmony with one another
	The objectives pursued by the quality department are often incompatible with those of the marketing department
	One department would not deliberately interfere with the other in order to further its own viewpoint of interest
SENIOR MANAGEMENT QUALITY LEADERSHIP Managers and employees believe that our senior executives… SCALE: Strongly disagree ←→ Strongly agree	are committed to quality improvements
	fail to accept responsibility for quality improvement
	clearly understand the quality-improvement process
	do not incorporate quality improvement into their own role
	only pay lip service to quality improvement
	are seen to be actively involved in quality improvement
QUALITY PLANNING THOROUGHNESS SCALE: Strongly disagree ←→ Strongly agree	We use knowledge and expertise from different functional areas
	We use knowledge and expertise from different levels of staff
	We use information from a number of different sources (e.g., consultants)
	We use information relating to our external customers (e.g., complaints, warranty)
	This organisation provides training supportive of effective quality planning
	This organisation uses a number of motivational factors to encourage good planning
	The time allowed to formulate our strategic quality plan is adequate
HIERARCHICAL PARTICIPATION IN QUALITY PLANNING SCALE: Never ←→ Very frequently	Unit senior managers
	Unit middle managers
	Unit junior managers
	Unit non-management employees
FUNCTIONAL PARTICIPATION IN QUALITY PLANNING SCALE: Not at all ←→ Very strongly involved	Production/operations
	Marketing
	Finance
	Customer service
	Sales
CONTROL SYSTEM CONGRUENCE SCALE: Strongly disagree ←→ Strongly agree	In all parts of my business unit there is a strong link between the quality strategy pursued and the quality-performance indicators widely used
	In all parts of my business unit the quality-performance indicators used have no discernible relationship with the current competitive strategy
	In all parts of my business unit everyone gets useful feedback concerning progress toward the achievements of the quality strategy
	In all parts of my business unit everyone's formal rewards (pay, promotion, etc.) are directly linked to the achievement of the quality strategy
	In all parts of my business unit everyone who contributes to the achievement of the quality strategy receives informal rewards (e.g. "brownie points")

Adapted from Morgan – Piercy (1998, 205–206). Measures for other non-relational constructs, e.g., financial performance and market performance, were excluded from this table.

The research constructs used were primarily adapted to quality-related relationship issues and to the role of quality in the organisation's planning and decision-making. However, with little adaptation, these same constructs could be used to study other inter-functional activities and relationships. The authors also provided full details concerning each of the research constructs and measures used, thus allowing other researchers to replicate the study and to fully evaluate it.

Morgan & Pierce's (1998) study on quality-related issues involved multiple functional areas, and not only the quality department. However, the respondents all occupied managerial-level positions in the company, somehow furthering the assumption that managers are most aware of the inter-functional activities taking place between the marketing and quality departments. There were also multiple company responses involving the general manager, the marketing manager and the quality manager. This opportunity to further analyse and compare one-to-one responses at the business-unit level was not exploited.

4.3.5 Ellinger et al. (2000): interdepartmental integration

The principal objective of the Ellinger et al. (2000) study[51] was to investigate the role of interdepartmental integration between logistics and marketing departments (dyadic-relationship context) in both the company's overall and distribution-service performance.

The empirical data was collected using a mail survey. The sample (N=309) consisted of US-based manufacturing firms representing industries ranging from paper/packing to computers/communication. For the majority of the companies involved, only the logistics managers took part in the survey, thus the unit of the analysis was the dyadic relationship from the logistics manager's perspective. However, for 30 companies also the marketing managers responded to the survey allowing the unit of analysis to be the dyadic relationship from both marketing and logistics departments' perspectives. (Ellinger et al. 2000, 6–7; 13)

The research constructs used in this study were adapted from earlier studies on interdepartmental integration (e.g., Kahn 1994). Table 17 describes in full detail each of the constructs used to evaluate perceived interdepartmental relationship integration and effectiveness. The distribution-service and firm-performance constructs have been excluded from the table.

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[51] This study is very similar to that of Kahn (1994) and Ellinger (2000) in its approach and in the concepts/constructs used.

Table 17. Interdepartmental-integration constructs

INTERACTION CONSTRUCTS	Measure (evaluated on a five-point scale)
INFORMATION EXCHANGE During the past six months, how often did the Logistics Department interact with the Marketing Department in regard to the following activities? (Scale: 1=Never… 5=Extremely Often)	Exchange of reports
	Exchange of memorandums
	Exchange of fax materials
CONSULTATION During the past six months, how often did the Logistics Department interact with the Marketing Department in regard to the following activities? (Scale: 1=Never… 5=Extremely Often)	Committees/Task forces
	Phone conversations
	Phone mail
	Electronic mail
COLLABORATION During the past six months, how often did the Logistics Department engage in the following activities with the Marketing Department? (Scale: 1=Never… 5=Extremely Often)	Achieving goals collectively
	Developing a mutual understanding of responsibilities
	Informally working together
	Sharing ideas, information, and/or resources
	Working together as a team
	Conducting joint planning to anticipate and resolve operational problems
	Making joint decisions about ways to improve overall cost efficiency
PERCEIVED EFFECTIVENESS OF INTERDEPARTMENTAL RELATIONS During the past six months, to what extent… (Scale: 1=Not al all… 5=To a Great Extent)	…has marketing carried out its responsibilities and commitments in regard to logistics?
	…has the relationship between logistics and marketing been productive?
	…has the time and effort spent in developing and maintaining the relationship with marketing been worthwhile?
	…have you been satisfied with the overall relationship between logistics and marketing?

(adapted from Ellinger et al. 2000, 9–10)

The relationship constructs used in this study focused mainly on communication and co-operation, but elements such as collective goals and the sharing of ideas, information and/or resources were also included. Yet, the constructs do not include relational elements such as trust and commitment.

The research results suggest a strong positive relationship between collaboration, perceived effectiveness and distribution-service performance. However, there appears to be a slightly negative association between information exchange and perceived relationship effectiveness.

With respect to the relationship constructs, the 30 dyadic relationships between logistics and marketing revealed some disparity between the two functional areas[52]. In fact, only one of the seven collaboration constructs was significantly correlated. Similarly, the responses concerning two out of the four relationship-effectiveness constructs correlated between marketing and logistics managers.

Only single informants in each company department were involved in this study. The reliability of the single-informant responses was also tested by involving both marketing and logistics managers in part of the data. These results clearly suggest that the single-informant response does not give an accurate picture of the state of the dyadic relationships, especially concerning

[52] See Ellinger et al. (2000, 13) for details.

the relational constructs. Full-scale matching of the respondents in both departments over the whole data may have been beneficial. Despite its shortcomings, however, this study and how it was conducted are reported on a very detailed level, thus allowing the reader to at least evaluate the methods and constructs used.

4.3.6 Other empirical inter-functional relationship assessment models

In the field of **buying center research** Johnston & Bonoma (1981a; 1981b) developed some central descriptive buying center concepts that also have an inter-functional dimension. These two studies, based on the same data, are not directly concerned with relationships between the different functions involved in the buying center. The empirical investigation was carried out using both quantitative (Johnston – Bonoma 1981a) and qualitative methods (Johnston – Bonoma 1981b) to analyse data on 62 purchases (both capital equipment and industrial services in each company) provided by 241 informants.

The concepts used to describe the composition of the buying center were vertical involvement, lateral involvement, extensivity, connectedness and centrality. Vertical involvement refers to the number of levels in the organisation's hierarchy that have influence within the buying center. Lateral involvement is the measure of the number of different departments and divisions in the buying center, while extensivity refers to the total number of individuals involved in the buying center. Connectedness refers to the number of links between individual members of the buying center as a proportion of the theoretical maximum number of links. Finally, centrality is the measure of all the purchasing manager's communications sent and received weighted according to the total number of buying-center members. (For more details on each of the measures, see Johnston – Bonoma 1981b, 254–255)

The more relationally-oriented results suggest e.g. that both vertical and lateral involvement in general increased as the purchase increased in complexity and importance, but there was no effect on connectedness. The purchase characteristics had no significant effect on the connections between the different parties involved in the buying center. (Johnston – Bonoma 1981a, 153)

The interaction between marketing and other functional units is the focus of interest in Ruekert & Orville's (1987) study. The principle aims of the study were to develop **a conceptual framework of marketing interaction with other functional units,** and then to test this framework empirically in a single-case company setting involving three autonomous business divisions. The unit of analysis is the dyadic relationship between marketing and the other

functions involved, using multiple informants. The conceptual model consists of several constructs with a limited focus on the relationship elements, with the exception of communication and co-operation/co-ordination (see Figure 23). (Ruekert – Walker 1987, 1–3)

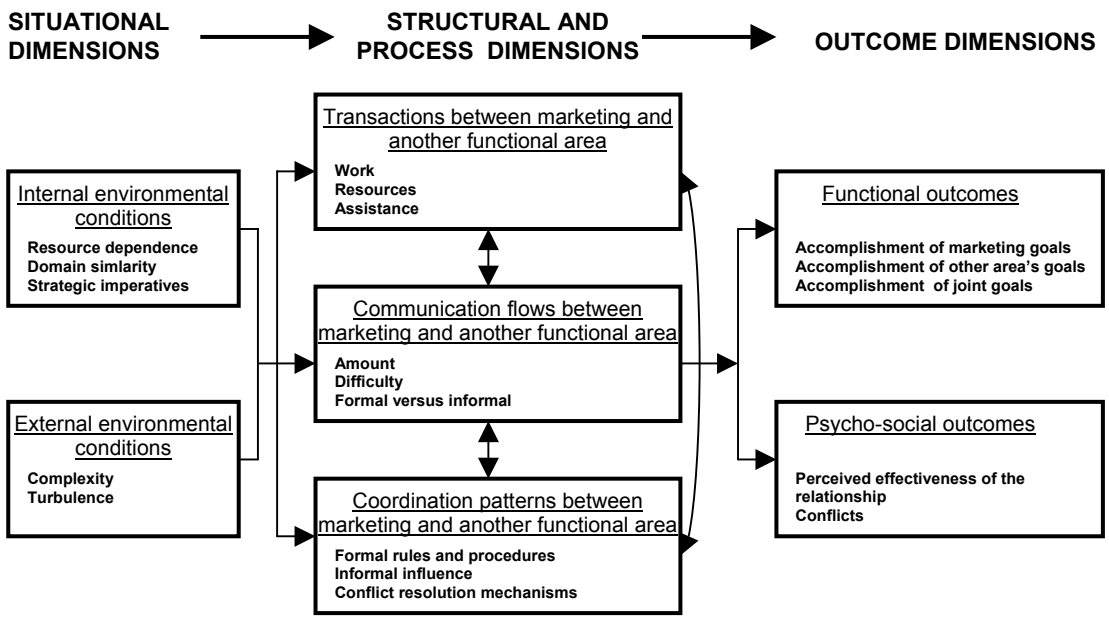

Figure 23. A framework for assessing interaction between marketing and another functional area (Ruekert – Walker 1987, 3)

Fourteen propositions were developed on the basis of the model interrelationship. These research constructs were evaluated using a mail-in survey. All of the measures are listed in Ruekert & Walker (1987, 15–18). The survey questionnaire was sent to two groups and produced 151 usable responses from individual employees in marketing management, sales management and other marketing functions. Members of the production, R&D and accounting functions also completed the same questionnaire. (Ruekert – Walker 1987, 8–9)

The research results suggest numerous interrelations between the constructs. The purpose of this study was to investigate the interrelationships between the individual research constructs, and not as such to evaluate individual inter-functional relationships.

St. John & Young (1991) investigated **inter-functional strategic consistency** between purchasing, production planning and production. Although this study claims to investigate the relationships among these functions (St. John – Young 1991, 16), the empirical investigation was more concerned with e.g. the decision-making priorities of each company function involved. In this study, the term relationship has very little to do with concepts

such as trust, communication, co-operation, risk/reward sharing and commitment. Moreover, the unit of analysis is not, in fact, the relationship between different functional managers, but the disposition of each functional manager in certain pre-specified theoretical decision scenarios.

This survey-based study required managers of the respective functions to rank in order of importance a list of company goals and a number of trade-off decision scenarios. The total sample consisted of 15 firms (overall response rate of 15%), which were randomly selected from a list prepared by Dun & Bradstreet. (St. John – Young 1991, 17–18) Although this was not specifically mentioned, one might assume that the firms were US-based.

Overall, the results suggest that agreement often exists between functional managers on long-term strategic goals and company visions, but when faced with routine problems, the managers tend to take action irrespective of the common corporate goals or visions. (St. John – Young 1991, 20)

4.3.7 Concluding remarks on inter-functional relationship assessment models

Most of the current research on inter-functional relationships presented above appears to have both marketing and R&D as their focal areas of interest. With the exception of St. John – Young (1991) and Trent & Monczka (1994), limited attention is given to purchasing as such. Relatively few of the studies incorporated inter-organisational elements into their constructs, and most of them focus only on intra-firm activities without concern for inter-organisational activities/relationships.

The research method used in most of these studies was the mail-in survey-based questionnaire, with single informants representing the functional areas. Each functional area involved in the study was generally represented, but there was no one-to-one matching of individual parties to the relationship. Some of the studies used the "snowballing" technique in identifying appropriate informants (Trent – Monczka 1994), and did not rely only on formal organisational charts and managerial-level informants (c.f. Ellinger et al. 2000).

It is evident from Ellinger et al. (2000) that involving both parties in a relationship and partially matching the individual responses provides interesting results that may often show limited consistency. Relying solely on the other party's perceptions may not offer an accurate description of the phenomenon under study. Most of the studies described here offer a detailed description of the constructs used, and of the measures used to evaluate them.

This allows other researchers to truly evaluate the research, and possibly replicate the findings in another environment.

The research constructs used in the above-mentioned studies are mainly focused on information exchange and collaboration/co-operation. These two constructs cover all forms of communication and meetings, as well as joint target setting and achieving goals collectively. Trent & Monczka (1994) also recognise "soft elements" such as team morale and reputation, which are mostly missing from the other studies. The results of the Song et al. (1997) study suggest that the firm's evaluation criteria and reward structures have a strong direct role in determining the degree of cross-functional co-operation.

Some of the studies discussed, especially that of Trent & Monczka (1994), also consider elements outside of the cross-functional team by incorporating supplier-related issues into the research constructs. Especially in purchasing and marketing, inter-functional relationships do not exist in isolation.

4.4 Models for assessing intra-functional relationships

Multiplant and multinational companies are often faced with the problem of determining the correct degree of centralisation and decentralisation in their operations. For example, in the field of purchasing, a trade-off often exists between capturing synergies (e.g., better prices) and maintaining local interest, capabilities and control in terms of business-unit cost development, problem situations and maintaining relationships with (local) suppliers (Faes et al. 2000, 539–541).

Intra-functional co-ordination and relationships carry significance mainly in the middle of the centralisation-decentralisation continuum, where some degree of autonomy allows for local decision-making, and centralised corporate requirements necessitate interaction with other units or the head office. In the case of interaction with other units, the purchasing function is often organised in a matrix formation, whereas when there is a strong head-office-centered organisation, the interaction and the relationships often occur between local units and the head office, with limited interaction between local units.

The local activities in the procurement function typically involve e.g. the purchasing of services or products that are not covered by corporate-level purchasing agreements. On the other hand, activities that necessitate interaction with other units often include defining and communicating local requirements to the head-office or unit responsible for negotiating corporate-level purchasing agreements. (Matthyssens – Faes 1996, 507)

There appear to be no reported empirical investigations – or research as such – into intra-functional co-ordination or relationships in the current marketing literature. Relationship research in this area has apparently been focused on issues involving multiple functional areas in company operations, such as marketing, new-product development and purchasing. There is no evidence that activities involving multiple company units and locations, but only a single functional area, have aroused the interest of the marketing/purchasing research community.

4.5 Concluding remarks

The literature suggests that organisations engaged in very developed relational exchange are active on all levels of the organisation and across both functions and units. They "speak the same language", are committed to the relationship and jointly plan their activities, both internally in their respective organisations, functions and units, and externally with their partners (see e.g., Lambert et al. 1996, 12). All in all, developed relational exchange (e.g., partnerships) tends to increase the requirements for intra-organisational integration[53] (Turnbull et al. 1992). Correspondingly, one would assume that recent empirical investigations on buyer-supplier relationships applied methodologies that could capture, or at least recognise, the inter-organisational, inter-functional and intra-functional perspectives.

However, the examples of current empirical studies on inter-organisational relationships presented in this chapter, with the exception of Lambert et al. (1996) address – at best – the dyadic relationship between the buying and selling organisation. Often only single informants were involved in each company, and in some cases only one party to the relationship was represented. Similar conclusions may be drawn from the review of recent empirical inter-functional studies.

It is not difficult to agree with Spekman (2000, 26), who has "always been less than satisfied with aggregation of individual scores to reflect buying center measures". Similar criticism could also be applied to research on buyer-supplier relationships in terms of the perspectives discussed in this chapter. The grouping of respondent answers does not allow the one-to-one matching of individual parties to the relationship, for example.

With respect to the research constructs and measures applied, it was somewhat disappointing to observe that quite a number of the studies do not fully disclose the measures used to investigate the research constructs. This

[53] Here, intra-organisational integration could be considered to cover both inter- and intra-functional activities.

seriously limits the opportunities to replicate the studies or, most importantly, to fully evaluate the studies and the research and methods applied.

Moreover, research results concerning different relationship constructs have hardly reached a consensus. Most of the studies apply concepts such as communication and co-ordination/collaboration/co-operation. Only a few of them also address some more abstract concepts such as trust and commitment, especially in the context of inter-functional relationships. The findings concerning the inter-relationships between the relationship constructs are also somewhat mixed.

All in all, it would appear as if the use of multiple informants is a must in research on developed relationships between organisations, and also within them, in the quest to capture a more comprehensive picture. Inter-relationships between different relationship perspectives should also be given more attention in future research in this field.

5 A BUYER-SUPPLIER RELATIONSHIP ASSESSMENT MODEL

5.1 Buyer-supplier relationship and relationship components

The range of different types of relationship between buyers and suppliers is vast, and it is evident that some types are more suitable in certain exchange situations than others. The more developed relationships (including partnerships) are clearly simply tools for managing complex exchange situations[54], and by no means ends worth striving for in themselves.

Given the number of individual relationship types, and also the numerous definitions, the task of drawing crystal clear lines of demarcation between different relationships is considered difficult, if not impossible. The goal in this study is not to identify individual relationship types, but rather to develop a relationship assessment model (later also referred to as RAM), and to investigate the relationships under study from inter-organisational, inter-functional and intra-functional perspectives. This will be done by first developing the model from literature sources and then applying it in practice in a case company setting.

This approach does not allow for specific one-to-one mapping of relationship types and individual relationship components (and their more exact specifications), however. It rather gives an indication of where, on the relationship continuum, a particular relationship lies, and – most importantly – what appear to be the focal areas for improvement if the parties involved aspire to develop it.

For the purposes of this study, information on a number of success factors, preconditions and criteria for partnership relationships was collected from several academic journals from recent years in order to establish a general set of criteria for a developed relationship. These articles represent a range of different applications for partnership relationships, but none of the empirical models investigated in this study were included in this investigation into the components of partnership relationships. However, none of the empirical investigations are in contradiction with the above-mentioned sources. Table 18 summarises the aspects and criteria that are closely related to developed relationships, as documented in the seven recent academic journal articles in

[54] E.g., involving joint development activities and the transfer of R&D knowledge.

question. Each of the relationship components is assumed to be equally weighted.

Table 18. Relationship components and preconditions for success

RELATIONSHIP COMPONENT	Akacum & Dale 1995	Brown et al. 1994	Ellram 1991a Ellram & Edis 1996	Landeros et al. 1995	Graham et al. 1994	Maloni & Benton 1997
TRUST	Mutual trust	Trust	Mutual trust	Trust		
COMMUNICATION AND INFORMATION EXCHANGE	Information exchange	Communication	Multi-level interaction and communication Openness	Open and candid communication	Information sharing	
CO-OPERATION	Co-operation Shared goals Joint problem solving		Shared goals	Co-operation	Joint planning	Mutual planning and problem-solving efforts
RISK/REWARD SHARING					Risk/reward sharing	Long-term, interdependent planning and operations
COMMITMENT	Long-term relationship	Long-term relationship	Top-management commitment at both companies Long-term perspective	Mutual understanding and commitment Top-management support	Long-term commitment	
OTHERS		Strategic fit			Role specification Establishing ground rules	

See also e.g., Spekman et al. (1998), Mohr & Spekman (1994) and Wilson (1995)

In this study, trust, communication, co-operation, risk/reward sharing and commitment were selected for the relationship assessment model. Naturally, one could argue with this component selection. For example, satisfaction is not explicitly mentioned, but the characteristics of this construct are built into both co-operation and risk/reward sharing.

These components form the basis of the conceptual analysis model for this investigation of buyer-supplier relationships in an inter-organisational, inter-functional and intra-functional context. The components of this conceptual analysis model (selected relationship components) are defined and operationalised in the following sub-sections. Despite their distinct qualities, all of the relationship components are more or less interlinked.

Although this analysis model is built on concepts and terminology from to do with inter-organisational relationships, the same terminology is believed to be equally applicable in inter-functional and intra-functional contexts. This notion is also supported by e.g. Kahn (1996, 147), who argues that collaborative interdepartmental integration involves predominantly informal processes based on trust, mutual respect and information sharing, the joint ownership of decisions, and collective responsibility for outcomes.

5.2 Relationship component definitions

Below each relationship assessment model component is presented in more detail. Each component is discussed in terms of the inter-organisational, inter-functional and intra-functional relationship perspectives.

5.2.1 Trust

Trust – a concept that is perhaps self-explanatory, yet difficult to define – is an essential part of a successful relationship. Anderson & Narus (1990, 45) define trust as "the firm's belief that another company will perform actions that will result in positive outcomes for the firm as well as not take unexpected actions that result in negative outcomes." In addition to this perceived credibility aspect, the other dimension is the concept of benevolence. Doney & Cannon (1997, 36) define benevolence as the extent to which one party is genuinely interested in the other party's welfare, and is also motivated to seek mutual gains. If one party believes that a partner is trustworthy without being willing to rely on that partner, trust is limited (Moorman et al. 1993, 82). In the light of this definition, it remains unclear whether any company pursuing a multiple-supplier strategy could still have trusting relations with one or more of them.

Commitment and trust provide the key to co-operative relationships (Morgan – Hunt 1994, 31). According to Ellram & Edis (1996, 28), "Mutual trust forms [the] basis of [a] strong working relationship", which could be interpreted as meaning that without trust there is no true partnership relationship. Other research has indicated that trust facilitates co-operation (Hawes et al. 1989, 2). Trust builds up over time as the relationship develops, and in the case of some trust-related problems, it takes a considerable amount of time to achieve trusting relations again.

In this study, trust is evaluated in both the short and the long term: these aspects could also be categorised as transactional- and relationship-level trust, respectively (for similar[55] thinking, see Ring & Van de Ven (1994, 93)). In the short-term-transactional sense, trust is believed to be present when both parties honour verbal agreements and do not find it necessary to have everything agreed in writing (and in a written contract). However, Ring & Van de Ven (1994, 93) also suggest that reliance on trust developed at the interpersonal level may be conditioned by legal systems or organisational role

[55] Ring & Van de Ven (1994, 93), while making use of other authors' contributions in the field of management and sociology, view trust as a construct based on a) confidence in the predictability of one's expectations, and b) confidence in another's goodwill.

responsibilities, mitigating the ability of the parties to rely on it as a matter of first preference. This results in a paradoxical situation. "Although long-term inter-organisational relationships may be based on trust, the existence of preventative formal contracts may help to ensure the buyer that trust is well-founded (and vice-versa)" (Handfield – Bechtel 2002, 371).

A certain level of trust is required in the performance of day-to-day transactions in the first place. In the long run, and on the relationship level, trust is evaluated in terms of the willingness of both parties to invest in the relationship or to enter into a similar kind of relationship again. In the latter sense, trust is closely associated with commitment from both parties, and with how credible each side considers such commitment. All in all, it has to be emphasised that trust is a concept based on perceptions (Hawes et al. 1989, 1).

In order to connect trust to a larger framework, it is necessary to compare different types of governance. Dyer & Singh (1998, 669) distinguish between two basic types of governance used by relationship partners. Traditionally, third-party enforcement (e.g., legal contracts) may be used to establish what has been agreed, and then possibly to enforce these contracts by using some third-party. The governance mechanisms suggested in transaction cost economics fall primarily into this class. The other basic types – self-enforced governance mechanisms – are further divisible into formal and informal types. Formal types often involve financial and investment hostages, for example, when the partners may make symmetrical relationship-specific investments. Informal self-enforced governance types basically include goodwill, trust and embeddedness in each other's operations, in other words the self-enforcing mechanisms that are argued to be more effective than the third-party governance mechanisms involving costly contracting, monitoring and enforcing activities. (Dyer – Singh 1998, 669–670) Ring & Van de Ven (1994, 105) also suggest that informal psychological contracts increasingly compensate or substitute for formal contractual safeguards as reliance on trust among parties increases over time.

Trust is argued to reduce the likelihood of relationship termination (Morgan – Hunt 1994, 26), but research (Doney – Cannon 1997, 46) has also suggested that trust (in the supplier) has little or no relevance for buyers[56] in selecting suppliers. In general, buyers appear to base their supplier selection on hard objective measures related to the product offered, rather than on more subjective measures such as relationship characteristics (including trust).

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[56] This argument (based on Doney & Cannon's research in the US – "buyers' disregard trust and focus solely on product-related factors" in selecting suppliers) prompted strong disagreement from the Pegasus Vice-President, Sourcing.

Trust is a concept that is applicable to all three perspectives of buyer-supplier relationships. Although concepts such as relationship termination and credible hostages may at first appear only to be applicable to inter-organisational relationships, they also influence both inter- and intra-functional relationships. A key person may wish to be reassigned within the company, or even to leave it altogether.

5.2.2 Communication and information exchange

In developed relationships (e.g., partnerships), communication and information exchange need to be open and candid at all organisational levels and across functional areas. Anderson & Narus (1990, 44) define communication as "formal and informal sharing of meaningful and timely information between firms" (see also Ballou et al. 2000, 16). Biong & Selnes (1995, 493) link communication to a broader perspective, and define it as "two way exchange of strategic and operational information necessary to enhance mutual learning and efficiency of transactions within the relationship."

Communication from both sides should be consistent, since in these cases the opposite side might lose sight of expectations, and problems will result (Landeros et al. 1995, 8; Ellram 1991a, 40 and 43). The information shared between partners must include both strategic and technical information in order to facilitate decision-making and joint planning (Graham et al. 1994, 14), to encourage joint problem solving (Spekman 1988, 78), and to reduce uncertainty as well as to increase control (Maloni – Benton 1997, 422). Open communication also helps to build mutual trust and deeper understanding of the partner's business and way of working (Ellram 1991a, 43). Communication between partners helps relationship development, fosters trust, and provides information about each partner's needs and knowledge of their operations, thus facilitating co-operative and collaborative activities (Parvatiyar – Sheth 2000, 6–7). Finally, since business relationships are maintained and developed between human beings, one cannot disregard the significance of personal face-to-face interaction in developed relationships.

5.2.3 Co-operation

Co-operation refers to situations in which parties work together to achieve mutual goals (Anderson – Narus 1990, 45). This definition has definite win-win overtones, and Spekman (1988,78) goes even further by stating that co-operation is built on a win-win model. Whipple and Frankel (2000, 22) also

claim that successful “win-win” has in its scope both hard performance-orientated elements and a soft people-orientated focus.

Co-operation in developed relationships is not limited to the customers buying and the suppliers selling, as one would perhaps describe it in traditional, arm’s-length buyer-supplier relationships. For example, in partnership relationships, suppliers are often involved at an early stage of product and design changes in order to maximise their potential contribution and, naturally, to be kept informed of all future developments (Ellram 1991a, 40). Furthermore, other joint activities, such as joint manufacturing-process development, as well as traditional buying and selling, could be considered typical partnership characteristics. One could also argue that developed co-operation between the two parties requires joint planning and goal setting, and perhaps even joint strategy setting. Joint strategy setting could, at one extreme, result in the customer adopting a single sourcing strategy and, at the other, in the single supplier dedicating most of its operations and production capacity to a single customer.

Joint problem solving could also be considered a developed-relationship characteristic (Akacum – Dale 1995, 39): in a study on partnership relationships between computer manufacturers and their dealers, joint problem-solving efforts (avoiding “harsh words”, and “smoothing over problems”) predicted relationship success (Mohr – Spekman 1994, 145). Moreover, co-operation has also been shown to lead to trust (Anderson – Narus 1990, 54).

Spekman et al. (1998) make a distinction between the terms ‘co-operation’ and ‘collaboration’, and suggest movement from the former to the latter. Along similar lines, Mentzer et al. (2000) refer to co-operation as “dating” and to collaboration as “marriage”. In this study, despite some differences in interpretation, the two terms are treated as more or less equal concepts.

5.2.4 Risk/reward sharing

Risk/reward sharing is closely linked to the co-operative arrangements in which the parties have engaged. In developed relationships, risks are jointly taken and rewards are shared between the parties on a win-win basis (Ellram 1991a, 40; see also Anderson & Narus 1990, 45; Spekman 1988,78). In addition, the supplier (or even the relationship) performance is measured in order to determine whether risks or rewards are attributable to failure or success respectively. In fact, in order for any relationship to flourish in the long term, there have to be benefits to both partners, and these benefits of close collaboration must naturally exceed those achievable if the parties were

to work independently. The value to be shared comes in many forms, such as in technology, market access, information, lower operating costs for the buyer and supplier, and further, lower prices. (Wilson 1995, 342)

This relationship element is also applicable in e.g. inter-functional co-operative activities. However, according to Trent & Monczka's (1994) study on cross-functional sourcing teams, there is virtually no empirical evidence of cross-functional performance evaluations or reward systems. Apparently, the performance of individual team members is often evaluated by the functional manager, and there is no formal performance assessment for individuals participating in cross-functional sourcing teams (Trent – Monczka 1994, 9). All in all, the performance criteria and the compensation systems[57] should reward both team results as well as individual performance (Murphy – Heberling 1996, 18).

5.2.5 Commitment

Long-term commitment has been reported to be one of the key success factors in developed relational arrangements. "Commitment refers to an implicit or explicit pledge of relational continuity between exchange partners" (Dwyer et al. 1997, 19). Morgan & Hunt (1994, 23) describe commitment as an enduring desire to maintain a valued relationship, and trust that the other party will also work to maintain it. According to Graham et al. (1994, 16), there appears to be a trend towards increased success in partnership-strategy implementation after three years of a partnership-type relationship.

For example, a partnership must be built on strong commitment by both parties if it is to work (Ellram 1991a, 39), and what are especially important are top-management commitment and a philosophy that encourages partnerships (Ellram 1991a, 40–41). Relationship-specific investments, having limited value outside the business relationship, could also be considered an indication of commitment. Moreover, commitment to the relationship is an applicable concept in intra-functional and inter-functional relations.

5.3 Relationship components and theoretical approaches

The theoretical approaches to research on buyer-supplier relationships reviewed in Chapter 3 also offer some characteristics and definitions of components of the relationship assessment model. In the following, each

[57] Firms need to consider metrics and the measurement system very carefully to empower the organisation to meet set targets and ensure compliance with strategies (see Hauser & Katz (1998)).

theoretical approach is briefly discussed in terms of the components of trust, communication, co-operation, risk/reward sharing and commitment.

5.3.1 Relationship components and transaction cost theory

Trust is one of the key components of a developed relationship. The original transaction cost theory, however, fails to recognise trust (and social control as opposed to fiat as a control mechanism) (Ghoshal – Moran 1996, 25; Ring – Van de Ven 1992, 484), rather considering opportunism to be the fundamental behavioural characteristic of economics actors (Williamson 1997, 8). In the spirit of transaction cost theory, written contracts and third-party enforcement rather than trust appear to be the preferred practice. It is also noteworthy that Ghoshal & Moran (1996, 42), for example, called for the inclusion of trust in the transaction cost framework.

Since the individual transaction is the basic unit of analysis in transaction cost theory, **communication** between the partners is primarily associated with the characteristics of the transaction. Furthermore, information is often distributed asymmetrically, which gives rise to e.g. opportunism (Williamson 1985, 47–48). In the context of transaction cost theory, **co-operation** between exchange partners also focuses on the transaction itself, i.e. mainly buying and selling. Thus, both the buyer and the seller aspire to maintain their independence in all areas of business. Consequently **risk and reward sharing** are not recognised in the transaction cost framework.

Asset specificity could be considered an aspect somewhat related to the last relationship component – **commitment**. Highly transaction-specific investment in one particular supplier's products and services could be considered a display of commitment to the relationship in question. It must be noted, however, that, according to the original transaction cost theory, a buyer–supplier relationship that involves transactions of high asset specificity in an environment characterised by high uncertainty and opportunism is destined to become a single vertically-integrated organisation of unified ownership (Williamson 1985). Here, the questionable assumption is that opportunism does not exist within a hierarchy (see e.g., Granovetter 1985, 500–501; Johanson – Mattsson 1987, 42).

5.3.2 Relationship components and relationship marketing

Relationship marketing is, by definition, concerned with relationships, and the partnership is but one relatively developed relationship type: consequently all

relationship components are recognised in the relationship marketing literature. Central concepts in relationship marketing include trust, commitment, interdependence, interaction and mutual satisfaction (Parvatiyar – Sheth 2000, 27). **Trust** and **commitment** are also clearly recognised as the factors that mostly affect relationship success and failure (e.g., Morgan & Hunt 1994). For Parvatiyar & Sheth (2000), interdependence and interaction reflect both co-operation and communication in the relationship, and mutual satisfaction could be categorised under risk/reward sharing of relationship costs and benefits. Buttle (1996a, 5) also recognises the **risk/reward sharing** component by emphasising that relationship marketing/purchasing is by no means a philanthropic activity.

Wilson (1995, 337) also identified several relationship variables. Those included in the relationship assessment model are trust, **co-operation** and commitment, although mutual goals and performance satisfaction could also be considered to belong to the risk/reward sharing category. In Wilson's terminology, social bonds refer to communication and information exchange, but Anderson & Narus (1990) and Dwyer et al. (1987), for example, explicitly included **communication** in their relationship models. Interdependence is *per se* a component of a relationship of any type, but power is argued not be a relevant criterion for many long-term buyer-supplier relationships (see e.g., Morgan & Hunt 1994, 22). In the broad sense, adaptation is part of co-operative behaviour, and non-retrievable investments (i.e. specific assets), together with structural bonds and shared technology, contribute to commitment (Wilson 1995, 337–339).

5.3.3 Relationship components and the IMP-group/industrial network approach

Not all relationships in the network are equal, as some are highly developed and others are purely transactional, if relational at all. Although the network approach focuses on networks rather than on individual relationships, the more developed relationship types also recognise the components of the relationship assessment model.

As in the relationship marketing/purchasing approach, **trust** is also a central element in the more developed range of relationships in the network. "Trust may be viewed as confidence in the continuation of a mutually satisfying relationship and in the awareness of other parties of what this requires of their performance as network members" (Thorelli 1986, 41). Trust as such is based on reputation, which is especially relevant in the network context, and on past performance. It is also built over time through social bonding and personal

friendship in day-to-day operations, and this further extends to mutual feelings of belongingness and dependence (Thorelli 1986, 41; Håkansson – Snehota 2000, 77). The other components (**communication, co-operation, risk/reward sharing** and **commitment**) are also recognised, although in a network context (in addition to the dyadic aspects) that implies the idea of connectedness and interdependence.

5.3.4 Concluding remarks

The central theme in this study is the developed buyer-supplier relationship (e.g., partnership) and the components that comprise a developed relationship type. Table 19 below summarises the key characteristics of each of the theoretical approaches discussed in relation to the relationship components.

Table 19. The relationship components in light of the theoretical approaches

RELATIONSHIP COMPONENT	THEORETICAL APPROACH		
	Transaction cost theory	**Relationship marketing/purchasing approach**	**IMP-group/ Industrial network approach**
Trust	Trust is not recognised and instead opportunism dominates. Contracts and third-party enforcement are used as substitutes for trust.	Trust (in addition to mutual commitment) forms the basis for a relationship.	Trust (in addition to mutual commitment) forms the basis for a developed relationship, yet not all relationships in the network are equal.
Communication and information exchange	Communication is limited to the characteristics of the transaction. Information is often distributed asymmetrically (bounded rationality).	Communication is extensive and associated with a wide range of co-operative processes.	Communication is a part of the interaction process in the relationship. In the network context, indirect communication may also affect the relationship in question.
Co-operation	Co-operation is limited to exchange.	Co-operation is a part of the exchange and other joint interaction processes in the relationship.	Co-operation is part of the interaction process in the relationship, but also in the network context.
Risk/reward sharing	Risk/reward sharing is not recognised.	Risk/reward sharing (i.e. mutual satisfaction) is essential as it forms the rationale for developed buyer-supplier relationships.	Risk/reward sharing (i.e. mutual satisfaction) is essential as it forms the rationale for developed relationships.
Commitment	High asset specificity (i.e. high relationship-specific investment) may be interpreted as a display of commitment in a buyer-supplier relationship.	Commitment (in addition to trust) forms the basis for a relationship.	Commitment (and trust) forms the basis for a developed relationship, yet not all relationships in the network are equal.

Source: Seppälä 2001

Each of the theories discussed recognises some relationship components. Transaction cost theory focuses only on the transactional aspects of the relationship components, not recognising the relational aspects involved in exchange situations. The relationship marketing/purchasing approach takes into account the relational aspect, but only in the dyadic context. The relational view should perhaps also include the transactional aspects of the

relationship. Finally, the network approach takes a holistic view and perceives individual relationships as a part of a larger network, but the transactional and dyadic aspects are (or at least should be) recognised as well. In conclusion, the relationship-research model appears to have theoretical validity.

5.4 Relationship components and empirical approaches

Chapter 4 reviewed some empirical approaches to research on buyer-supplier relationships from inter-organisational, inter-functional and intra-functional perspectives. This contemporary research and the relationship constructs are discussed below in relation to the relationship assessment model and its constructs: trust, communication, co-operation, risk/reward sharing and commitment.

5.4.1 Relationship components and empirical inter-organisational assessment models

Most of the empirical inter-organisational relationship assessment models discussed in this report recognise at least some of the constructs used in the buyer-supplier relationships-assessment model developed in this chapter. However, there certainly are differences in the constructs applied.

Both **co-operation** and **communication** in different forms were the most recognised relationship constructs. The terminology used for the former ranges from co-operation and co-ordination to planning/scope. Co-operation is also considered to include concepts such as conflict-resolution techniques, adaptation and participation. The concept of information exchange was considered equal to communication. **Trust** was also among the more frequently-used constructs in this review of empirical studies. Somewhat surprisingly, the level of **commitment** attracted relatively little interest. In the relationship assessment model, commitment is also considered to include investment (in the relationship), propensity to leave and, to some extent, dependence and interdependence and contract style, which were also included in some of the empirical investigations. Only one empirical study made any mention of **risk and reward sharing** in buyer-supplier relationships.

Other constructs used in the empirical inter-organisational investigations included concepts such as participation, influence, satisfaction, conflict functionality and social exchange, all of which were only mentioned in single studies.

5.4.2 Relationship components and empirical inter-functional assessment models

The recent empirical studies on inter-functional relationships discussed in this paper used relatively few constructs to evaluate relationships and integration between different functional areas. The most widely-used construct was **communication**, also in the form of meetings and documented information exchange. **Co-operation** (also referred to as collaboration, consultation and general overall team performance) was also used. Commitment and risk/reward sharing were implicit in only single study. Elements of **commitment** could be identified in constructs such as planning thoroughness, senior-management leadership and hierarchical participation. Characteristics of **risk/reward sharing** were to be found in constructs such as control-system congruence and interdepartmental conflict. However, there was no mention of **trust** in any of the studies.

Other constructs used in the empirical inter-organisational investigations included concepts such as perceived effectiveness of interdepartmental relations and supply-base management performance, which were mentioned in a few studies.

5.4.3 Relationship components and empirical intra-functional assessment models

There appear to be no reported empirical investigations into intra-functional relationships or co-ordination in the current marketing literature. There is thus little to discuss in terms of relationship constructs. However, one could assume that, in reality, there is little difference in research approach or in the constructs applied in research on inter-functional and intra-functional relationships.

5.4.4 Concluding remarks

The focal area of interest in this study is a developed buyer-supplier relationship from inter-organisational, inter-functional and intra-functional perspectives. Table 20 below summarises the discussion on the buyer-supplier relationship assessment model and the constructs used in relation to the recent empirical investigation on inter-organisational, inter-functional and intra-functional relationships.

Table 20. The relationship components in light of the empirical approaches

RELATIONSHIP COMPONENT	EMPIRICAL APPROACH		
	Inter-organisational relationship models	**Inter-functional relationship models**	**Intra-functional relationship models**
Trust	Inter-organisation trust was mentioned in e.g., Anderson & Narus (1990), Morgan & Hunt (1994), Mohr & Spekman (1994), Lambert et al. (1996) and Abratt & Kelly (2002).	Not mentioned in any of the studies.	Not covered in the empirical investigations in marketing.
Communication and information exchange	Communication is one of the basic building blocks in inter-organisational relationship studies. It was used in e.g., Anderson & Narus (1990), Metcalf et al. (1992) Morgan & Hunt (1994), Mohr & Spekman (1994), Lambert et al. (1996) and Abratt & Kelly (2002).	Communication is the most frequently applied relationship construct in the studies reviewed and it appears to form the foundation of any inter-functional relationship. It was used in e.g., Kahn (1994), Trent & Monczka (1994), Song et al. (1997), Morgan & Piercy (2000) and Ellinger et al. (2000).	Not covered in the empirical investigations in marketing.
Co-operation	The most frequently-used construct was co-operation, with mentions in e.g., Anderson & Narus (1990), Metcalf et al. (1992), Morgan & Hunt (1994), Mohr & Spekman (1994), Lambert et al. (1996) and Sinclair et al. (1996).	Co-operation was also among the most frequently-used relationship constructs, e.g., Kahn (1994), Trent & Monczka (1994), Song et al. (1997), Morgan & Piercy (2000) and Ellinger et al. (2000).	Not covered in the empirical investigations in marketing.
Risk/reward sharing	Surprisingly, only Lambert et al. (1996) mentioned the constructs risk and reward sharing in inter-organisation relationships.	Inter-departmental goal congruence and common targets were covered in Song et al. (1997) & Morgan & Piercy (2000).	Not covered in the empirical investigations in marketing.
Commitment	Relatively few studies recognised relationship commitment, the counterpart to trust. Commitment was evaluated in Morgan & Hunt (1994), Mohr & Spekman (1994) and Lambert et al. (1996).	Top-management commitment and managerial involvement were considered in both Song et al. (1997) and Morgan & Piercy (2000).	Not covered in the empirical investigations in marketing.

The relationship constructs used in the buyer-supplier relationship assessment model are also relatively well recognised in current empirical relationship research, although there are differences between the different relationship perspectives. For example, somewhat surprisingly, concepts such as trust and commitment have attracted very little interest in inter-functional relationship research. However, all in all, the model developed in this study compares relatively well with other existing assessments in terms of the relationship constructs used.

5.5 The relationship assessment model

It is considered difficult, if not impossible, to quantify (in the absolute sense) abstract concepts such as trust and commitment, and an indicative four-point scale (0–3) is used instead of an absolute scale for evaluating each relationship

component. It has to be noted that this scale does not allow for statements such as "trust in relationship A is twice that in relationship B".

For the present study, multiple informants were interviewed in order to obtain a comprehensive picture of the relationships from inter-organisational, inter-functional and intra-functional perspectives for all parties. In the process of determining each relationship component, individual informants' perceptions were weighted on the basis of their involvement in the sourcing activities. The most influential party in **Manufacturing (Procurement)** is the Component Manager, who is responsible for commercial issues globally. The **R&D** Component Expert is responsible for technical co-ordination in all Pegasus business units. The **Service (Purchasing)** Strategic Purchaser is globally responsible for co-ordinating the after-sales spare-parts purchasing. Table 21 below demonstrates the use of this model. It should be noted that the relationship component characteristics are cumulative, in other words, a score of three cannot be achieved without satisfying all the preceding relationship component conditions.

Table 21. Use of the relationship-research model

RELATIONSHIP COMPONENT	RELATIONSHIP COMPONENT SCORE			
	0	1	2	3
Trust	The respondent indicated no trust in the other party.	Verbal agreements are honoured. Trust limited to day-to-day transactions.	Willingness to enter into co-operative arrangements and trust that the other party will not take advantage of our vulnerability.	Benevolence, willingness to re-enter into new co-operative arrangements.
Communication and information exchange	The respondent has not engaged in communication toward the other party, or has been very reluctant to do so.	Communication with the other party is limited to transaction-specific issues.	Frequent and consistent communication about the business outlook and relationship issues (both technical and commercial aspects).	Communication that supports the building of trust, co-operation and mutual learning.
Co-operation	No co-operation toward the other party or co-operation is done very reluctantly.	Co-operation toward the other party is limited to e.g. buying/selling.	Early involvement in e.g. product design and joint manufacturing process development. Some joint problem solving.	Joint goal and strategy setting (including role specifications). Working together for mutual goals. Problems are solved co-operatively, keeping in mind the long-term benefits of the business relationship.
Risk/reward sharing	Relationship risks and rewards are not shared. Both parties aim to maximise their rewards and minimise risks in an opportunistic manner.	No joint risks (e.g., co-operative projects) are taken, thus no risk/reward-sharing schemes are in place. Possibly only traditional performance metrics are in place, e.g., costs, delivery accuracy and quality.	Co-operative projects are initiated (i.e. risks are taken), yet risk- and reward-sharing principles and metrics are not jointly established. Each party aims to minimise risks and maximise profits in the short term.	Risks and rewards of the relationship are shared between partners according to the win-win principle.
Commitment	The party is not committed to the relationship.	Involvement limited to operational level (e.g., buyers'/sales agents). Short-term perspective.	Long-term perspective. Involvement of all relevant company functions (e.g., R&D and sales/procurement).	Serious top-management commitment to the relationships. Relationship-specific investments possible.

Table 21 shows how the market-orientated (e.g., arm's-length-relationship) characteristics are associated with the left-hand column with relationship component scores of close to zero. More developed relationships (e.g., partnership relationships) are positioned towards the right-hand side of the table, with both parties scoring close to three on relationship component values. In principle, the greater the sum of both parties' relationship component scores, the closer the relationship. Moreover, the absolute values of both parties' relationship component scores should also be taken into account.

Let us assume that, in some sample relationship, one party scores two and the other also receives two points for the co-operation component. This leaves us with a total relationship score of four for co-operation and a gap of two points between the two parties. The gap and the relationship score in this example are equal to a relationship in which one party scores one point and the other scores three points for the same component. However, the relationship itself between the parties is far from equal. See Figure 24 below for an illustration of these two cases.

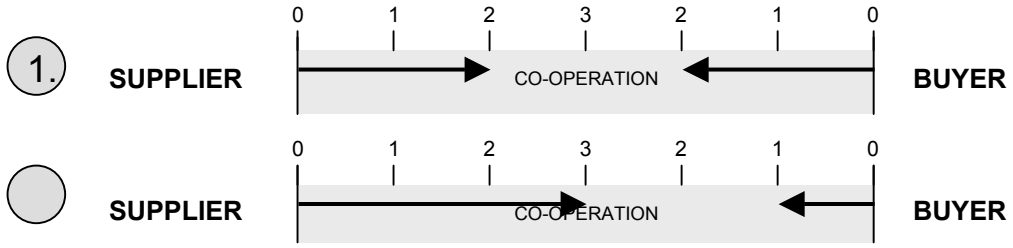

Figure 24. Gap analysis comparison

In the first case, both parties may be engaged in co-operative development projects, and the outlook for the development of a mutually satisfying relationship is good. In the second case, the seller may be extremely interested in co-operation, and may be engaged in the early design stages while working towards the "common good" of the relationship. The buyer, on the other hand, is only interested in buying the products, and has little concern for the buyer's co-operative activities or for long-term plans concerning the relationship.

5.5.1 Relationship presentation format

Each of the components of the buyer-supplier relationship assessment model (RAM) is first described in words. Then, on the basis of the description, a relationship component score is determined using the scheme described in Table 21. Communication frequency between the participating functions and individuals is also presented using a scheme similar to that developed by Griffin & Hauser (1992, 368: see Figure 25 below).

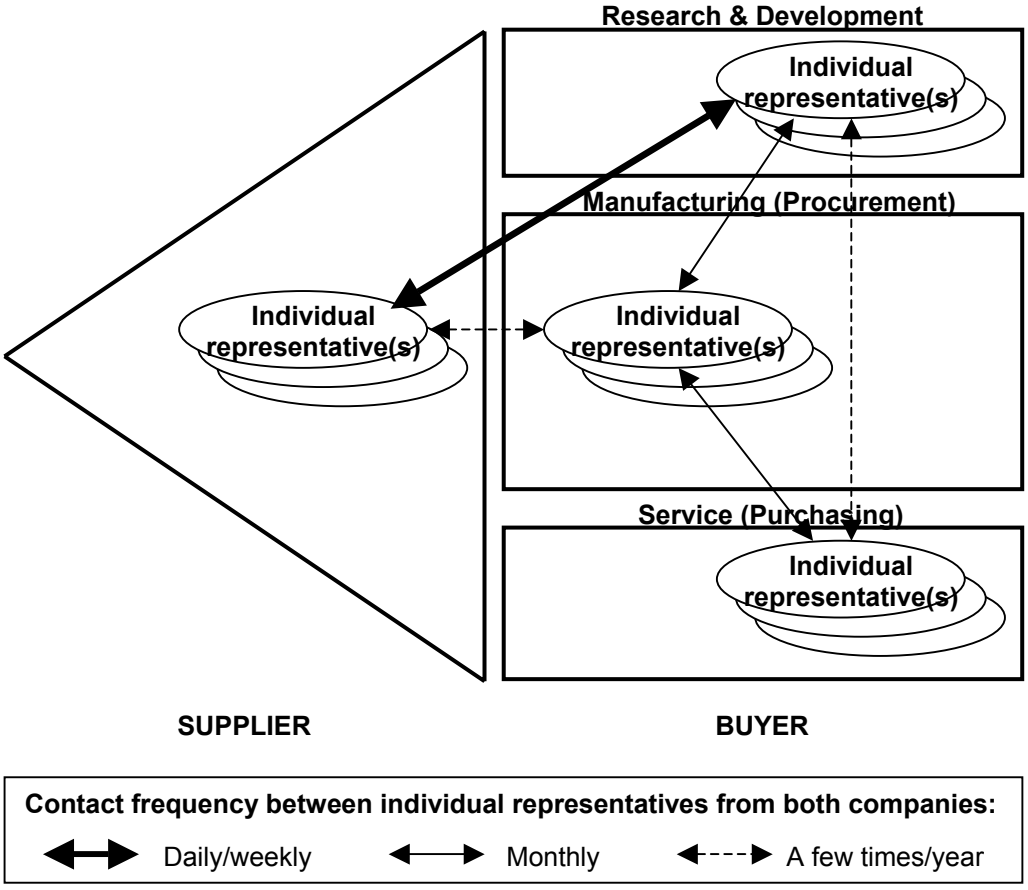

Figure 25. An example of relevant relationships between buyer and supplier representatives

It must be noted that in the above figure the intra-functional relationship perspective e.g. between the individual representatives of the manufacturing (procurement) function is not illustrated. In practice two types of relationship-presentation schemes are used. On the more detailed level, a table-like format shows the relationship component scores for each of the participating company functions and organisations. On the aggregate level, the individual scores are summed to represent the total relationship score. In both cases, the dyadic and bi-directional nature of relationships is maintained. Figure 26

represents the detailed-level table-like relationship component score presentation scheme.

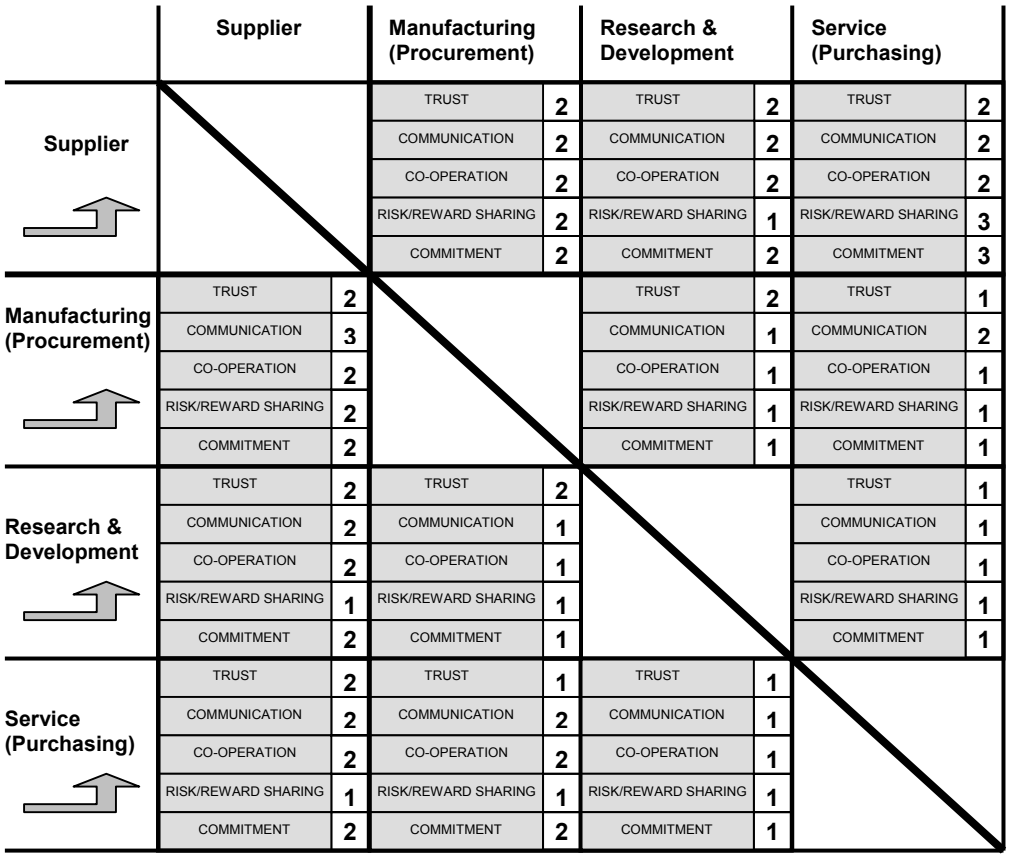

Figure 26. An example of buyer – supplier relationship component scores

This basic table-like format with its various modifications serves as the primary presentation format for the components of the individual relationships between the different parties involved. It is worth noting that that this example table does not contain the intra-functional relationship dimension.

On the more aggregate level, the relationship components are summed to allow for more effective comparison between the relationships and the different perspectives. Figure 27 shows an example of the supply chain context presentation. Again the intra-functional perspective is not illustrated in the figure below.

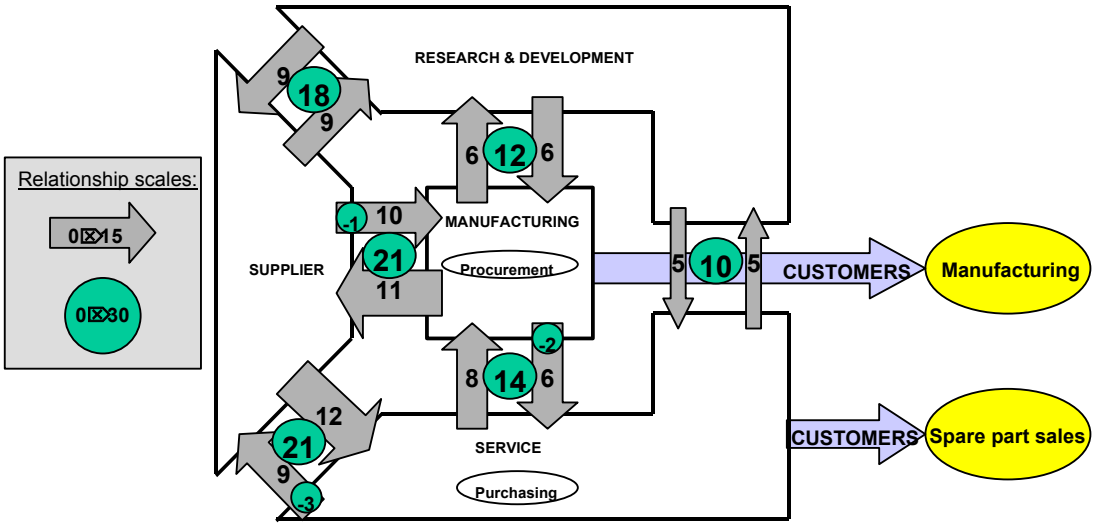

Figure 27. An example of buyer – supplier relationships in a supply chain context

The larger circles between the arrows indicate the overall relationship score. In principle, the greater the score of both parties, the closer the relationship. The arrows indicate the aggregated relationship component scores for each of the participating functions and organisations in relation to one another. The lower the score, the less developed the relationship is from the perspective of the party from which the arrow comes. The difference between the different relationship component perceptions is indicated in the small circle within the arrow.

5.6 MSU: 21st Century Supply Chain Benchmarking Tool

The primary research method in this study is qualitative. Extensive interviews were conducted in order to determine the characteristics and eventually the relationship component scores for each buyer-supplier relationship in different relationship perspectives. In addition to the qualitative approach, also quantitative methodology was applied by using the Michigan State University 21st-century Supply Chain Benchmarking Tool (see Bowersox et al. 1999) to measure the extent of supply chain integration and, ultimately, to gain an alternative view of the focal area of research using an alternative research method.

Researchers at Michigan State University have developed a benchmarking tool to measure supply chain integration. This tool is based on extensive and continuing research on supply chains mainly in the North American context. The benchmarking tool is aimed at measuring individual companies'

integration into supply-chain operations both externally with customers and suppliers, as well as internally between functions, for example.

This benchmarking tool was originally intended to be used to evaluate six supply-chain competencies, each of which indicate different perspectives on supply chain integration. The competence areas are relationship integration, measurement integration, technology and planning integration, material/service-supplier integration, internal integration, and customer integration. These competency areas are evaluated using a survey instrument consisting of 100 questions evaluated on a five-point Likert-scale. The scale ranges from 1=Strongly disagree; 2=Disagree; 3=Neither agree nor disagree; 4=Agree and 5=Strongly agree. The original framework does not recognise the "can not answer / don't know" option, but the original survey instrument was modified for this study to allow for easy answering on an MS Excel spreadsheet, and this option was also added. For more information on the MSU benchmarking tool and its intended use, see Bowersox et al. (1999). Appendix 4 gives some information and the key results of the Ojala et al. (2000) study using the MSU benchmarking tool.

In this study, each benchmarking-tool survey question was looked at individually to determine its suitability to measure the constructs of trust, communication, co-operation, risk/reward sharing and commitment in the relationship assessment model. Appendix 3 lists the individual benchmarking survey questions and the constructs. All of the constructs except trust formed part of the benchmarking survey questionnaire. This benchmarking tool was only used to assess the level of supply chain integration from the perspective of some Pegasus representatives, and most, but not all, of the interview participants took part in the survey. Moreover, the level of analysis in the survey was not that of individual buyer-supplier relationships, but it was on the firm level. In other words, this approach does not allow for 100% one-to-one matching of the research results produced by the relationship assessment model and MSU benchmarking. All in all, the supply-chain benchmarking tool was used to determine what kind of picture of the focal area of research would be formed using alternative methodology.

The complete benchmarking survey with 100 questions was sent to 109 Pegasus respondents using email in early 2000, and this resulted in 84 usable responses. This data was fully used and reported in both Seppälä – Vafidis (2000) and Ojala et al. (2000). However for the purposes of this study, 12 respondents who took part in the original interviews also returned usable benchmarking-survey responses. Responses were received from all three Pegasus business areas participating in the study. Appendix 2 also lists the MSU benchmarking participants in the right-hand column.

In order to make the evaluation scale of both the relationship assessment model and the MSU benchmarking tool comparable, it is necessary to set both evaluations on the same scale. In this case, a scale ranging from 1 to 5 was chosen. The results of the comparison are presented together with the findings related to the relationship assessment model in Chapter 11.

5.7 The use of power in relationships

Power in social relationships could be defined as "the ability of agents to place their wishes and interest above those of other agents in social interaction" (McDonald 1999, 49). The five relationship components presented above do not include the concept of power. It is probable that proponents of the resource-dependency theory, for example, are not very comfortable with the absence of this aspect from the analysis, but "in circumstances where the parties to an exchange can and do contract in a farsighted way", the concept of power has little to contribute to the study of contract (Williamson 1997, 12–13) and relationships. Furthermore, Morgan & Hunt (1994, 22) argue that it is commitment and trust that are central to successful relationships, rather than power and its ability to "condition others"[58], while Davies (1996, 21) even claims that "the power paradigm precludes any true notion of partnership". Ballou et al (2000, 15), however, view power and trust as two alternative mechanisms for generating co-operation. All in all, power appears to have a much more limited role than is commonly believed, a discovery that also surprised Stuart & McCutcheon (1995) in their study on strategic supplier alliances: "…lack of influence of power relationships was surprising, to say the least. Despite the presence of some very large firms in the study, power perceptions were not significant" (Stuart – McCutcheon (1995, 8), see also Tuten & Urban (2001, 158–159)). Williamson (1997) also illustrates this in a forceful way, specifically in the context of long-term buyer-supplier relationships, by demonstrating that dependency and power are variable concepts.

Let us assume that a supplier has made specific investments to support the buyer's special needs. In a situation of falling demand, the buyer exercises his power, and signals (to the supplier) that prices must be reduced or the purchase order (i.e. the supply-contract) will be cancelled. In this case, the supplier, with his non-redeployable assets, has no choice but to cut his prices if he wishes to maintain the business and to earn returns on the specific assets. In

[58] In all fairness, it must also be recognised that the use of power is common in day-to-day business operations and relationships. Therefore, the analysis of its use could also offer interesting insights into relationship dynamics along the temporal dimension.

the case of sharply rising demand, however, the buyer asks the supplier to increase production and to supply more products. The supplier is able to exercise his power and to comply only if the buyer is willing to pay a substantial premium on the products supplied. If the dependent buyer cannot find less expensive sources of supply, the new terms of trade and price increases have to be accepted. (Williamson 1997, 24–25)

In conclusion, it could be said that power is not considered a significant element in "true partnership relationships", where risk and reward sharing is a central operating principle. Yet, one must recognise the day-to-day business reality, in which power is often used in pursuit of selfish goals, even in cases in which mutual risk and reward sharing would result in long-term benefits for both business partners.

Power also has significance in supply chain integration, for example (see Maloni & Benton 2000), but its use in long-term dyadic relationships is limited. McDonald (1999) argues that a power imbalance between the two parties poses a great risk to the success of a developed buyer-supplier relationship. In fact, this is also believed to be one of the reasons for such a limited number of (reported?) successful and mutually beneficial partnership relationships. Perhaps this is where the long-term perspective comes into play, and over time the changing balance of power may reduce the likelihood of exploitative relationship behaviour.

6 PEGASUS ORGANISATIONS INVOLVED IN STRATEGIC SOURCING

6.1 Pegasus Corporation

The case company, Pegasus Corporation, is a multi-national firm specialising in the manufacture of heavy industrial goods for two primary market segments. The company's annual turnover in 1999 was approximately two billion euros. The overall Pegasus production strategy is primarily assembly focused, and consequently components sourced from outside suppliers make up over 60% of the manufacturing costs. Strategic sourcing is a multi-functional activity and it involves several company functions (i.e. business areas) and locations, primarily in Europe.

The business areas that are mainly involved in strategic sourcing activities are Manufacturing (Procurement), Research & Development and Service (Purchasing). Manufacturing (Procurement) is responsible for procurement in the factory business area for the manufacture of new products. Research & Development is responsible for R&D and for the design of the end product and most of the components purchased by both Manufacturing (Procurement) and Service (Purchasing) from suppliers. The Pegasus Service business area is responsible for end-product servicing, and its sub-function – Service (Purchasing) – handles all spare-part purchases. Figure 28 illustrates the case-company business areas involved in this study.

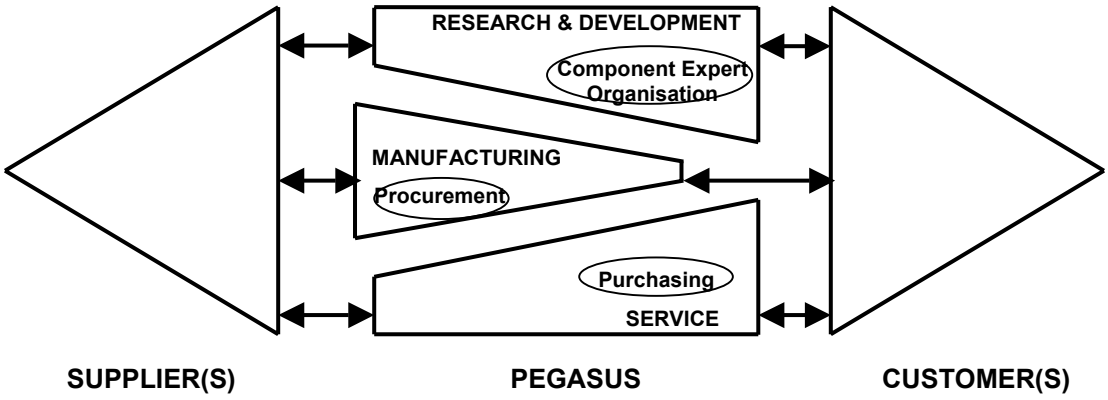

Figure 28. Case-company business areas involved this study

Each of the business areas involved in sourcing operations is presented in more detail below, with specific focus on the participant organisational groups and levels. It should be noted that the business area names used in this study

do not correspond fully to the terminology used internally in the case company.

6.2 Manufacturing (Procurement)

Sourcing is not a separate business area or function in the Pegasus organisation. On the strategic level, it is a cross-functional activity involving Manufacturing (Procurement), Research & Development and Service (Purchasing). In addition, "tactical level" decision-making involves all three business areas. Manufacturing (Procurement) and Service (Purchasing) have more or less identical procurement activities on the operative level, despite somewhat different terminology concerning the personnel involved, for example. Research & Development is not directly involved in operative-level procurement activities. Figure 29 illustrates the six hierarchical decision-making levels in sourcing, procurement and purchasing in the Pegasus Manufacturing (Procurement) organisation, and in relation to other business areas/functions.

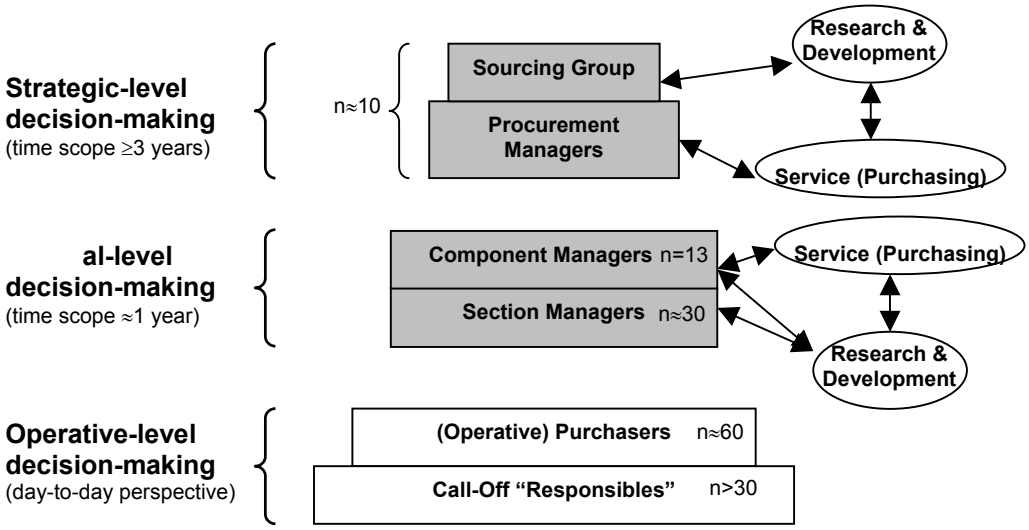

Figure 29. Pegasus sourcing/procurement organisation and its decision-making in relation to Manufacturing (Procurement), R&D and Service (Purchasing) in 1999 (the areas relevant to this study are highlighted in grey)

The **sourcing group** at the top of the hierarchy is the corporate-level co-ordinating organ for sourcing activities in Manufacturing, Research & Development and Service. Procurement Managers from each Pegasus product factory, the Service Strategic Purchasing Manager, the R&D Concept Engineering Assistant Director and the Manufacturing business area's Vice-President, Sourcing form the sourcing group. Sourcing group meetings take

place monthly in one of the product factories in rotating sequence. In principle, the sourcing group is the primary organisation responsible for setting strategic sourcing goals for each component, in accordance with the corporate goals and requirements. The sourcing group also monitors the work of each Component Manager.

In the organisational matrix, **Procurement Managers** (n=8) report to both the respective Product Factory President (or in the case of Service to the Service Business Area President) and Vice-President, Sourcing. With the exception of those in Factory C and Factory E, each Procurement Manager is also Component Responsible. Component responsibility is assigned on the grounds that the Component Managers work under the Procurement Manager, and primarily includes co-ordinating sourcing group and Component Manager decision-making, and communicating between the strategic level (the sourcing group) and the tactical level (Component Managers).

In total, 25 components are under Component Manager co-ordination. Each **Component Manager (CM)** (n=13) has between one and four components in his/her operative co-ordination and leadership responsibilities for the Pegasus product factories and Service Purchasing, in co-operation with product factory Section Managers, R&D Component Experts and Service (Purchasing) representatives. Strategic-level decision-making is subject to approval from the sourcing group before action is taken. This is achieved by drawing up component action plans formulated by the Component Managers, and annually approved for use by the sourcing group. The Component Managers report to the Component Responsibles (i.e. the Procurement Managers): they are part of the product-factory procurement department, and in principle their Section Manager duties for the respective product factory are limited to their own CM components.

Each Pegasus product factory has a procurement department in its organisation, and each has divided its procurement (and purchasing) responsibility into strategic, tactical and operative tasks.

Each product factory and Service (Purchasing) organisation has both operative and strategic purchasers. **Section Managers (SM)** (n≈30) and Component Managers (both also being strategic purchasers) work under the supervision of the factory Procurement Manager, who reports to the Factory President for his and the procurement department's overall performance. Each strategic purchaser (Section Manager) has certain components within his/her realm of co-ordination and responsibility. The Section Managers are primarily responsible for negotiating annual supply agreements with the suppliers of their components for the use of the Operative Purchasers, unless the component in question is co-ordinated in the Component Manager organisation. Annual supply-contract negotiations for CM components are the

Component Manager's responsibility. In addition, the strategic purchasers (both CMs and SMs) are expected to look for and develop new suppliers. The only day-to-day purchasing task that the strategic purchasers (both CMs and SMs) have is the ordering of test and prototype components for Research & Development. In this operative capacity, the Section Managers are expected to work in co-operation with R&D representatives.

The globally operating Pegasus **Process Development Expert** is stationed in the procurement department of Factory A. His primary task is to develop the supplier network and to carry out **MEP-projects** (Manufacturing by Extended Partnership) in co-operation with the Manufacturing (Procurement) Component Managers and other experts (drawn mainly from Factory A production). MEP-projects are joint development projects carried out by Pegasus together with its suppliers. The ultimate goal is to improve the suppliers' manufacturing process, and thus to increase competitiveness and profitability for both parties. The projects are carried out in cross-functional expert teams from both organisations, and any rewards are shared equally between them.

In the Manufacturing business area, the **Operative Purchasers** ($n \approx 60$) report to the shop-floor managers in the factory. Their main duty is to make sure that the production process has a sufficient supply of components available in all situations. They utilise any annual supply agreements that the Component or Section Manager in strategic procurement may have reached, otherwise they order components as they see fit, in accordance with product-factory guidelines (e.g., from approved suppliers). Operative Purchasers also make 12-month consumption forecasts for certain key components, based on sales and other data, and communicate their requirements to suppliers every three months. They are primarily responsible for day-to-day purchasing operations. In Service (Purchasing), they work in a very similar manner for spare-part sales. They are, in most cases, in more frequent contact with suppliers than CMs and SMs on issues concerning daily business. However, the focus in this study is only on the strategic level, thus operative contacts between Pegasus and the suppliers were not studied.

On the factory floor, **stock personnel** ($n>30$) carry out call-off duties as well as their main duties in the warehouse. Some low-value and high-volume components ("C-components" on the ABC component classification) have been transferred from the control of operative purchasing to call-off. Stock levels or other indicators give the trigger to the call-off persons to make "automated" purchase orders. Each of these call-off purchase orders is entered into the product-factory information system either by hand or by a bar-code reader. Every evening the manufacturing information system generates purchase orders, which are automatically sent to suppliers by fax.

6.3 Research & Development

Research & Development is a separate business area in the Pegasus corporate structure. The development process is basically divided into two interlinked stages. The **Component Experts** are responsible for new concept and product development, with limited direct focus on some specific product types. Each one is responsible for a certain product section, all of which each contain closely interlinked components. These Component Experts are stationed in Factory A and Factory C respectively, and some are also internal technical auditors, who are also expected to supervise design work in other company R&D units.

Product groups, on the other hand, are responsible for the development of a particular product, such as Pegasus 38, by applying the new concepts and developments that emerge from the Component Experts. Each Pegasus product has a product group in the respective factory. The R&D organisation is currently undergoing changes in respect to its internal way of working, and Figure 30 gives the overall picture as it stands, with the focus on the groups that are mainly involved in strategic sourcing.

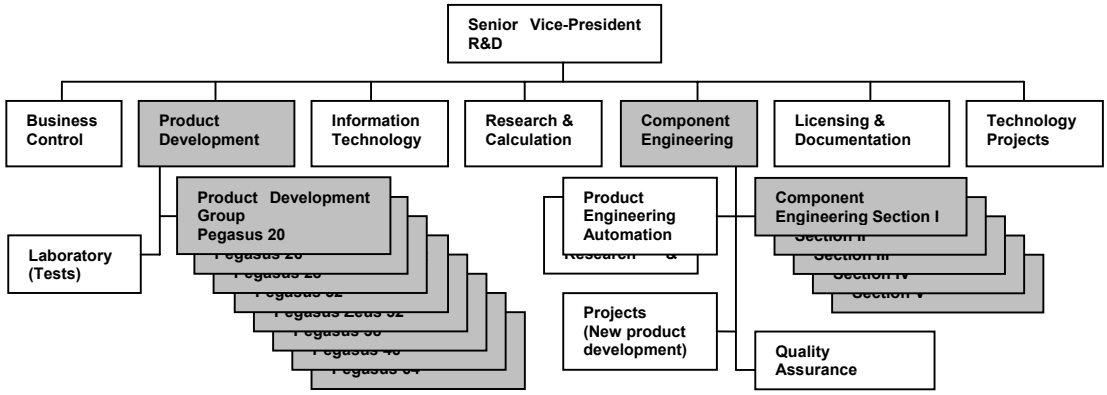

Figure 30. Pegasus R&D organisation: product groups and Component Experts

Figure 29 does not give a complete and detailed picture of the Pegasus R&D organisation. However it does illustrate the organisational positioning of the five component-engineering Section Managers (i.e. Component Experts) who are – at Pegasus R&D – the primary parties involved with suppliers and other Pegasus business areas in strategic sourcing. Figure 30 illustrates the role of the Component Expert in the Pegasus R&D organisation.

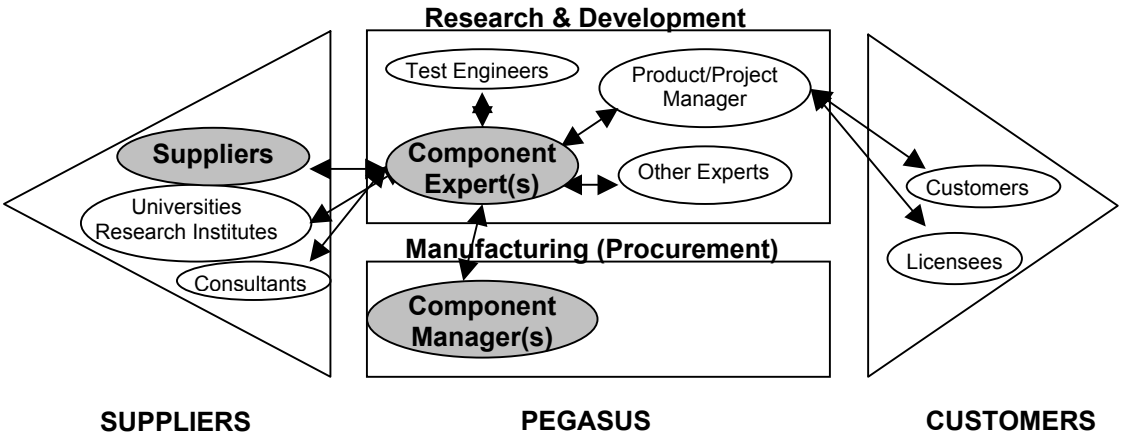

Figure 31. Pegasus R&D organisation in the supply chain in relation to both inter- and intra-company relations (the areas relevant to this study are highlighted in grey)

The parties mainly involved in strategic sourcing are highlighted in bold in the figure. In addition to his local design work, the Component Expert is also responsible for co-ordinating the design work of his counterparts working on the same components in other Pegasus R&D locations, which closely reflects the system followed in the internal technical-auditor organisation. This organisation is, to a certain extent, analogous to the Component Manager organisation in Manufacturing (Procurement). According to the Pegasus R&D Concept Engineering Assistant Director, the aim of this new Component Expert organisation is, in the first place, to make intra-R&D co-operation more efficient, and thus not focus specifically on cross-organisational or cross-functional co-operation and integration.

Pegasus R&D and some suppliers have entered into a **technology co-operation agreement**. This agreement sets the general terms of conduct in joint research and development projects between buyer and supplier, including the responsibilities and practices concerning confidentiality, for example. In addition to establishing general terms from a technological perspective, it also sets guidelines for prototype costs (50% higher than the unit prices for production delivery), and grants exclusive purchase volume to the supplier for some pre-set time period starting from the first delivery of production parts. It could be assumed that Manufacturing (Procurement) is also heavily involved in these negotiations.

6.4 Service (Purchasing)

In principle, the Service (Purchasing) organisation is very similar to that which is in place in the manufacturing business area: it is also divided into strategic and operative purchasing. The **Service Strategic Purchasers** work under the strategic purchasing manager, who represents Service (Purchasing) in the sourcing group meetings, and are globally responsible for the strategic purchasing of non-portfolio product components. Portfolio products are still in production, and thus require components for both the production process and spare-part sales; non-portfolio products are no longer in production and demand is only for spare-part sales. Most Service (Purchasing) Strategic Purchasers are stationed in Factory A and Factory B.

Not all component groups selected for corporate-sourcing co-operation have a respective Strategic Purchaser in the Service (Purchasing) organisation. In certain cases, there is only an operative-level purchaser for some components, and the strategic work and co-ordination for Service is in the responsibility of the respective Manufacturing (Procurement) Component Manager. Service (Purchasing) currently has three Component Managers.

Operative-level purchasing in Service is carried out in the materials-management organisation. Responsibility in Service (Purchasing) is divided into product parts and installation equipment, product parts being those that are built on the product as it leaves the factory, and installation equipment referring to auxiliary components in the product installation. Operative purchasing is carried out locally in each Service product company, in response to changes in stock levels and requests from Service spare-part sales.

7 THE PEGASUS – BELLONA RELATIONSHIP

7.1 Introduction to the Pegasus – Bellona relationship

In this chapter the Pegasus – Bellona buyer-supplier relationship is described and evaluated in the inter-organisational, inter-functional and intra-functional perspectives using the buyer-supplier relationship assessment model developed in Chapter 5. The inter-organisational data is presented in a summarised form: the detailed data is to be found in Seppälä (2001).

Pegasus has only two beta suppliers in its supplier portfolio, and only one is under investigation here; several Pegasus representatives argued that there were no major differences between the two suppliers, thus only Bellona was selected.[59]. Table 22 illustrates the supply relationship between Bellona and each Pegasus product factory and Service (Purchasing).

Table 22. Bellona's supply relationships with each Pegasus Product Factory and Service.

Supplier	Share of Pegasus' beta purchasing volume supplied by the supplier.	Pegasus' share of supplier's total sales.	**Component**	**PRODUCT FACTORY**					**SERVICE**
				A	**B**	**C**	**D**	**E** License support and Service	
BELLONA	60%	15%	Beta	X	X	X	X	X	X

The letter X marks a relation and a minus sign ('-') indicates no relation.

Bellona has been a beta supplier for Pegasus since the late 1970s. It is almost completely owned by a foundation operating in the Stuttgart area in south-western Germany. The management of this company is closely linked to Aphrodite[60] – a big automotive supplier, which also happens to supply alphas to Pegasus. In 1998 Pegasus accounted for approximately 15 percent of Bellona's large-size beta business. In addition to handling both automotive and large-size applications, Bellona manufactures other components for the automotive industry: its turnover in 1998 was approximately 1.7 billion euros and it had 19 400 employees. It is currently supplying all Pegasus product factories involved in this study, along with some Pegasus licensees and Service (Purchasing). In 1999 Bellona ranked as the sixth biggest supplier for Pegasus in terms of purchased value.

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[59] From the reseacher's standpoint there was no access to the other beta supplier.

[60] Aphrodite is not among the suppliers studied here.

7.2 Inter-organisational relationships

7.2.1 Trust

Both Bellona and Pegasus representatives perceived each other as trustworthy business partners. Some problems had occurred, such as the Pegasus 32 beta problem[61] with Service (Purchasing), but apparently these had not had a major effect on the current trusting relations between the two companies. In the transactional sense, trust was present, yet it was impossible to evaluate it on a more general long-term level, or to determine whether both parties perceived each other's commitments as truly credible. The Bellona decision to compensate some costs associated with the replacement of Pegasus 32 beta components without proper (any?) legal grounds could be interpreted as a case of Bellona honouring commitments and thus contributing to the trusting long-term relations between the two companies.

7.2.2 Communication

Communication between Pegasus and Bellona representatives took place almost daily between all Pegasus business areas and the Bellona representatives. On Bellona's side mainly the technical sales person (i.e. account manager) was involved. On the strategic level communication concerned technical and commercial issues between the two parties. The most active parties from Pegasus were the R&D Component Expert, the Manufacturing (Procurement) Component Manager and the Service (Purchasing) Section Manager. In principle, Bellona had a single point of contact for all of the three Pegasus business areas, and this person was thus in daily contact with Pegasus. Face-to-face meetings took place approximately every two months. Alongside the technical sales representatives, the Bellona director responsible for large-size beta business was also very well aware of the developments in the Pegasus relationship, as were the other Bellona representatives working on Pegasus products and sales (concerning the Medusa-brand betas).

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[61] In the mid-1990s, there was a problem concerning Bellona beta designs for the Pegasus 32. As a result, Pegasus Service replaced the betas in almost all Pegasus 32 products that were already with the end customers. By way of compensation, Bellona agreed to give considerable discounts on future beta purchases, although there were no legal grounds for such an offer. It was as if Bellona agreed to bear at least some of the costs associated with the replacement operation as a sign of good faith and commitment to the relationship.

Most Pegasus representatives perceived Bellona to be reactive in its communication with Pegasus, since most of the information that was needed had to be specifically asked for and sometimes the response time was slow. In terms of quality and quantity, the information requested was considered sufficient. According to the Pegasus representatives, the information quality had also recently improved. The Bellona representatives, on the other hand, were satisfied with the communication and information they received from Pegasus. Only very seldom had there been inconsistency in terms of requirements and expectations from either side.

Figure 32 illustrates the relevant lines of communication and co-operation in the inter-organisational relationships between Pegasus and Bellona.

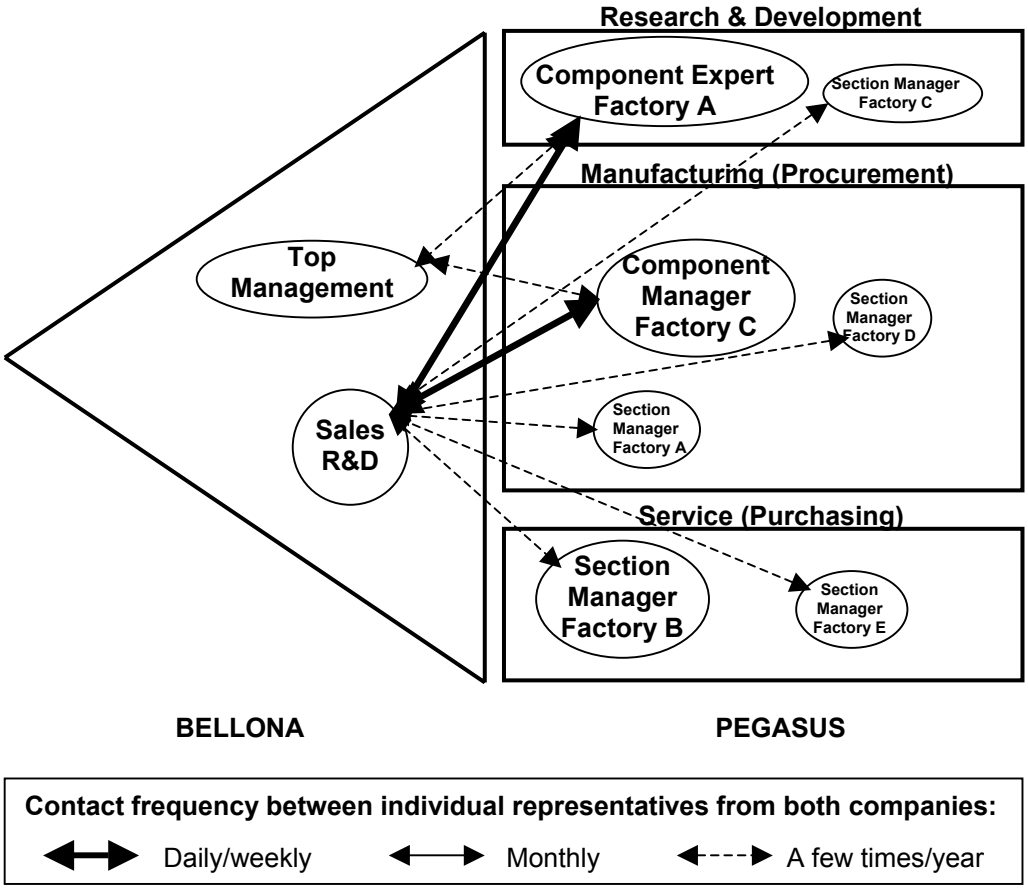

Figure 32. Relevant inter-organisational relationships between the Pegasus and Bellona representatives

The above figure shows the relatively active involvement by all three Pegasus business areas in this inter-organisational relationship. Bellona was supplying betas for both Pegasus and Medusa brand products and this was also evident in the channels of communication between the two companies.

7.2.3 Co-operation

Bellona and Pegasus engaged in a number of joint development projects and co-operation, besides maintaining a traditional buyer–supplier relationship. The joint MEP-project[62] saw Bellona and both Pegasus Manufacturing (Procurement) and Service (Purchasing) attempting to reduce both costs and lead-time in the Bellona production process. As of April 1999, however, the project had not resulted in the expected cost savings. Bellona and Pegasus Research & Development were also (in 1999) engaged in a project to develop a new beta type in which the nodular cast iron used at that time was to be replaced with steel as the beta skirt material.

With the exception of the Pegasus 32 and Pegasus 26[63] issues, Bellona and Pegasus had not experienced serious problems in this business relationship. Both of the above issues were jointly addressed, although the Pegasus 26 problem was not yet fully resolved (in 1999). Both parties bore some of the costs associated with the replacement of faulty betas in the Pegasus 32-case.

Bellona had not entered into a technology co-operation agreement with Pegasus, although according to Pegasus Research & Development representatives, the level of co-operation was very similar to that in relationships that have been reinforced with formal agreements. Despite their developed co-operation and joint development projects, the two organisations had not engaged in any joint strategy or goal setting concerning this business relationship.

7.2.4 Risk/reward sharing

Both the risks and the rewards were, at least in principle, shared in the MEP-project, as both Pegasus and Bellona personnel participated in the joint effort to reduce the costs and lead-time of Bellona's production process. Unfortunately, as of April 1999, the MEP-project had not been successful, but any projected savings were to be shared equally between the two parties. Both parties were at liberty to use their gained knowledge with other customers and suppliers as they saw fit.

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[62] MEP = Manufacturing by Extended Partnership, see Chapter 6.2 for details.

[63] In one instance, a problem occurred in the design of Pegasus 26 betas. The Bellona design did not work in an actual Pegasus product application; Bellona had already ordered several hundred pieces of raw material according to their design, and Pegasus eventually ended up paying for 300 pieces, although these betas could not be used in the Pegasus product. The question of design ownership and responsibility for design faults arose. According to the Bellona representatives, the reasons for this design fault were far more complex than the "Bellona made a design error" explanation offered by the Pegasus Factory C R&D representative.

The risks and rewards in R&D co-operation were also shared to a certain extent, as both Pegasus and Bellona representatives contributed. Pegasus participated by arranging field tests in its products, and communicated these results to Bellona. Bellona designed the betas according to specifications supplied by Pegasus Research & Development. Then, if the design was a success and Pegasus managed to sell products equipped with these steel betas, Bellona would recover the costs of research and development along with some premium to justify the development risk. If, on the other hand, the products with the new steel betas did not sell, Bellona would bear the loss on the development work done specifically for Pegasus. However, Bellona had the opportunity to share some of the development costs with its other customers currently engaged in simultaneous joint research and development on the steel beta concept. Pegasus, on the other hand, had limited opportunities to share its development costs with its other suppliers.

The resolution of the Pegasus 32 problem could also be interpreted as a form of risk and cost sharing. Both parties contributed to the solving[64] of this problem (i.e. a risk that became a problem).

Bellona's overall performance was measured in terms of price level, delivery accuracy and quality. When its performance sufficiently met expectations, it was "rewarded" by Pegasus in the form of a share of the procurement volume. If, on the other hand, Bellona failed to meet the set criteria it would be punished by having to pay a penalty fee (e.g., for late deliveries) and/or by having to take a reduction in its share of procurement volume, which was a more long-term solution. This performance-measuring system applied to both Manufacturing (Procurement) and Service (Purchasing). Pegasus, on the other hand, was expected to pay for each shipment on time. If it failed to do so, a penalty fee (i.e. interest on late payment) was imposed.

7.2.5 Commitment

The Manufacturing (Procurement) Component Manager primarily handled commercial issues in co-operation with the Bellona technical sales representative. Bellona's large size beta business area managers only participated in annual supply-contract negotiations. The Service (Purchasing) Section Manager was also often involved in the negotiations on Pegasus after-market betas. Executive-level involvement from Manufacturing (Procurement) and Service (Purchasing) was very limited. This business relationship was

[64] The Pegasus Vice President, sourcing, requested that the specifics of the solution to this problem were left out of this thesis.

initiated in the 1970s, and had in principle allowed for long-term development into a partnership. Nevertheless, the supply-contract was only valid for one or two years at a time, and there was at least a theoretical chance of discontinuing the relationship. According to the Manufacturing (Procurement) and Service (Purchasing) representatives, neither of the parties had made any relationship-specific investments to their business relationship other than in working time and the costs of the travelling involved. One could nevertheless argue that the costs incurred during the course of the as yet unsuccessful MEP-project were difficult to cover outside this business relationship making it a very relationship-specific investment.

Pegasus Research & Development and Bellona held annual R&D strategy meetings on technology developments, despite the fact that the two companies had not formally entered into a technology co-operation agreement. A number of representatives – including executives – from both companies were present at these meetings. Both Pegasus Research & Development and Bellona had made very few relationship-specific investments in the design and production of Pegasus betas, and Bellona carried most of the costs. The Pegasus-specific designer at Bellona could also, to a certain extent, have been considered relationship-specific, as his duties only included Pegasus beta research and development. It could also be argued that Bellona had made a considerable investment in this business relationship by covering some of the costs of the Pegasus 32 problem.

7.2.6 Relationship component scores

Figure 33 below illustrates the relationship component scores between Bellona and different Pegasus business areas involved in this inter-organisational relationship. On the Bellona side, the most active party was the Technical Sales Person. All three Pegasus business areas were involved with the R&D Factory C Component Expert, the Manufacturing (Procurement) Factory A Component Manager being the most active. The Service (Purchasing) Factory B Section Manager was also involved.

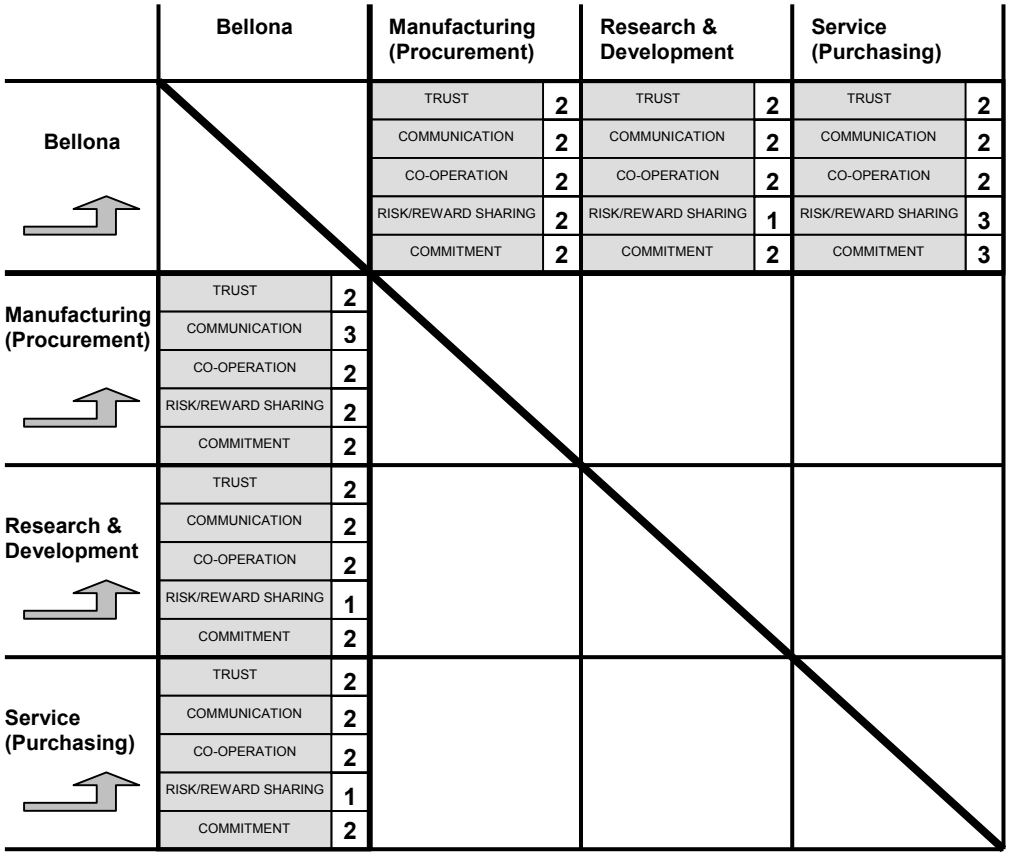

Figure 33. Relationship component scores of the Bellona – Pegasus business area relationship

Note that each relationship component score presented here represents "an average" of individuals participating in the inter-organisational relationships. What should be kept in mind is their role in the Pegasus sourcing organisation on the one hand, and their actual involvement in this inter-organisational strategic sourcing relationship on the other.

7.3 Inter-functional relationships

In this section, the inter-functional relationships in beta sourcing between Manufacturing (Procurement), Research & Development and Service (Purchasing) are analysed using the relationship assessment model.

7.3.1 Manufacturing (Procurement) – Research & Development

7.3.1.1 Trust

Lack of trust was not a concern in the relationship between the Factory A Manufacturing (Procurement) beta Section Manager and the R&D Component Expert. Verbal agreements were honoured and, all in all, the relationship functioned well. Trust was also present in the relationship between the Factory C Manufacturing (Procurement) Component Manager and the Factory A R&D Component Expert. The same also applied to the relationship between the Manufacturing (Procurement) Factory C Component Manager and the local R&D Section Manager.

7.3.1.2 Communication

The primary parties engaged in inter-functional communication in beta sourcing were the R&D Component Expert and the Manufacturing (Procurement) Section Manager in Factory A, despite the fact that the Manufacturing (Procurement) Component Manager was stationed in Factory C. However, the Factory A R&D Component Expert was satisfied with this arrangement and practice of communication, where information from Manufacturing (Procurement) was communicated primarily through the local Factory A Manufacturing (Procurement) Section Manager. All in all, the decision-making authority in sourcing issues was considered to be equally divided between Research & Development and Manufacturing (Procurement).

The Factory A R&D Component Expert was not very well informed of the decisions made in Manufacturing (Procurement), as he did not receive copies of purchasing contracts or of the component summary reports and action plans[65]. He was familiar with the product specifications and the technical aspects of the action plan, but he would have appreciated other information concerning prices, for example. This information had to be specifically requested when needed for price comparisons and other purposes relevant to the design process.

Locally in Factory C, the Manufacturing (Procurement) Component Manager and the local R&D Section Manager communicated several times a week on strategic sourcing issues such as supplier relations and design developments. However, the Factory C Research & Development

[65] Component action plans and summary reports were the primary tools for component purchasing and supplier-related planning in Manufacturing (Procurement).

representative had never seen the component action plans or the summary reports formulated by the Manufacturing (Procurement) Component Manager. When asked, he said he was familiar with the R&D-related information included in these reports. Some reports and minutes of Factory C Research & Development meetings were sent to the Factory C Manufacturing (Procurement) Component Manager. The R&D Section Manager specifically requested information on strategic planning, and called for joint long-term strategic goal setting in sourcing activities.

The Manufacturing (Procurement) Factory C Component Manager was in contact with the Factory A R&D Component Expert approximately four times a year by telephone and e-mail on Pegasus-group level sourcing issues. He did not think that this was satisfactory, as he had very limited knowledge of what actions Factory A Research & Development had taken or would be taking, or of its sentiments towards suppliers. Nevertheless, every time he contacted the respective Component Expert in Factory A, technology-related assistance and support were given willingly in a co-operative manner. The two parties met approximately twice a year. As far as other information was concerned, the Manufacturing (Procurement) Component Manager had never received any reports or minutes of Factory A R&D meetings or other decision-making forums.

The Factory D Manufacturing (Procurement) Section Manager had once met the Factory A R&D beta Component Expert, but otherwise communication with Factory A Research & Development took place via the Pegasus 64 Product Group Leader in Factory D. In the opinion of the Factory D Manufacturing (Procurement) Section Manager, this type of communication worked well, as he had also received some reports and minutes of meetings. Communication regarding the old products manufactured in Factory D took place locally between local Research & Development and Manufacturing (Procurement).

Figure 34 below illustrates the lines of communication and co-operation between the Manufacturing (Procurement) and Research & Development representatives in inter-functional beta sourcing.

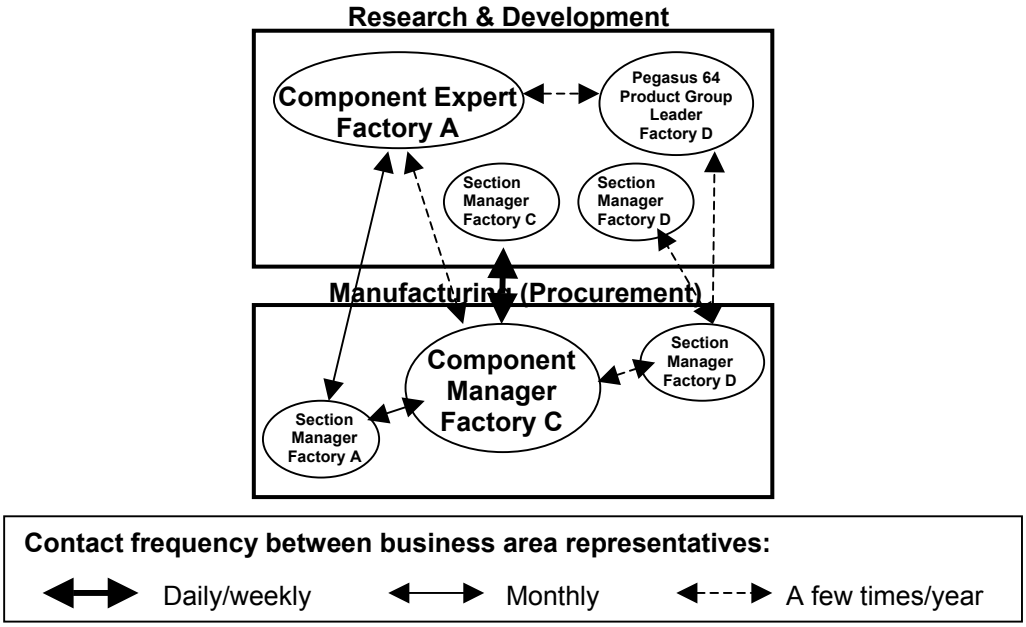

Figure 34. Manufacturing (Procurement) and Research & Development representatives and their inter-functional relationships in beta sourcing

7.3.1.3 Co-operation

Both the Factory A R&D Component Expert and the Manufacturing (Procurement) Section Manager were satisfied with the bilateral co-operation in the sourcing process. For example, the R&D Component Expert claimed not to accept visitors from beta suppliers without notifying or inviting Manufacturing (Procurement) representatives well in advance, and vice versa. However, in the opinion of the Factory C Manufacturing (Procurement) Component Manager, Factory A Research & Development lacked the "Pegasus group-level attitude". Factory A Research & Development was also perceived to be the dominant party in sourcing activities. New-product development was carried out there without the involvement of the Factory C Component Manager. Internally in Factory C the situation was considered to be more balanced.

The Factory A Research & Development representative is aware of the fact that Bellona and Pegasus have engaged in a MEP-project, that (according to him) consists of a Bellona production process audit and corrective actions. Pegasus Research & Development was under the impression that it was expected to contribute to the project by analysing and commenting on the changes in the beta designs that were suggested by Manufacturing (Procurement) and Bellona. All in all, the MEP-project responsibilities and, to some extent, the targets were unclear to the R&D Component Expert.

Manufacturing (Procurement) and Research & Development had not engaged in joint strategy or goal setting.

7.3.1.4 Risk and reward sharing

The costs accumulated in sourcing were allocated to the respective business area. Research & Development bore the direct purchasing cost of prototype components, and the costs for production parts were allocated to the Manufacturing Business Area. The risks and rewards were more or less shared, as both parties were assumed to contribute to the sourcing process in roughly equal proportions, but there was no formal practice in place for sharing sourcing costs, risks and rewards. All in all, the majority of projects carried out to improve supplier processes and performance were done so individually within each business area, and there was limited inter-business area co-operation and risk/reward sharing.

7.3.1.5 Commitment

Co-operation between Research & Development and Manufacturing (Procurement) was primarily on the local level in Factory A. The primary parties involved were the Manufacturing (Procurement) Section Manager and the Component Expert from Research & Development. The Factory C Manufacturing (Procurement) Component Manager was mostly involved in local co-operation with Factory C Research & Development. Co-operation between Research & Development and Manufacturing (Procurement) also happened on the local level in Factory D. Co-operative sourcing activities appeared to be more focused on the local level, with limited concern for group-wide sourcing activities. According to the Factory C Manufacturing (Procurement) Component Manager, there was very limited direct involvement on the executive or managerial level in sourcing co-operation.

7.3.2 Manufacturing (Procurement) – Service (Purchasing)

7.3.2.1 Trust

The Service (Purchasing) Section Manager was responsible for procurement activities covering the whole business area. However, the Factory B Service (Purchasing) beta Section Manager claimed that beta volumes and prices for Factory C non-portfolio products were negotiated locally by Pegasus Factory

C. Apparently, trust had not developed between the beta Service Section Manager in Factory B and the Factory C Manufacturing (Procurement) Component Manager. In the opinion of the Service (Purchasing) representative, verbal agreements were not honoured, and it was necessary to confirm telephone conversations in writing (i.e. using e-mail).

Beta-sourcing activities in Factory E (license support and service for Medusa-brand products) were very limited, and therefore interaction with other business units was virtually non-existent. However, in the opinion of the Factory E Service (Purchasing) representatives, trust had not been a problem with the Factory C Manufacturing (Procurement) Component Manager.

7.3.2.2 Communication

The Manufacturing (Procurement) Factory C Component Manager and the Service (Purchasing) Factory B Section Manager were in contact approximately once a month by e-mail. The Service (Purchasing) Section Manager informed the Component Manager about the actions he had taken in beta sourcing, and he in turn communicated prices and other information that had apparently been poorly adapted to the needs of the Service business. For example, Service (Purchasing) had little use for complete beta price information as customers very seldom requested complete beta assemblies. According to the Service (Purchasing) Section Manager, prices received from the Manufacturing (Procurement) Component Manager were for complete betas and not for beta parts, which would have been considerably more useful. The Manufacturing (Procurement) Component Manager would also have appreciated better communication with the Service (Purchasing) Factory B Section Manager, but he was under the impression that he was overloaded with work. Face-to-face meetings took place approximately four times a year. According to the Manufacturing (Procurement) Component Manager, Manufacturing (Procurement) and Service (Purchasing) also – although very seldom – communicated on the local Factory C level in relation to non-portfolio beta business. This statement does not support the claim made by the Service (Purchasing) representative in Factory B that non-portfolio pricing was agreed locally in Factory C.

The Factory D Manufacturing (Procurement) Section Manager had not replied to a request made by the Factory B Service (Purchasing) representative concerning service volume. The Service (Purchasing) Section Manager was in contact with the Manufacturing (Procurement) Factory A beta Section Manager every now and then, but on social rather than business-related matters. Additional information, such as minutes of meetings from

Manufacturing (Procurement), was communicated through the Service (Purchasing) Strategic Procurement Manager to the respective Section Manager in Service (Purchasing).

The Factory E Service (Purchasing) Section Manager was only in contact with the Factory C Manufacturing (Procurement) Component Manager on beta-sourcing issues. The Factory E Section Manager was under the impression that he was informed about and – in some respects – also involved in the strategic sourcing activities as he worked in co-operation with the Component Manager. Nevertheless, "co-operation" communication as such was not very frequent between the two parties – in fact it was limited to a few telephone calls and e-mail messages a year. The two parties had never specifically discussed betas and beta sourcing in face-to-face meetings.

Figure 35 below illustrates the lines of inter-functional communication and co-operation between the Manufacturing (Procurement) and Service (Purchasing) representatives in beta sourcing.

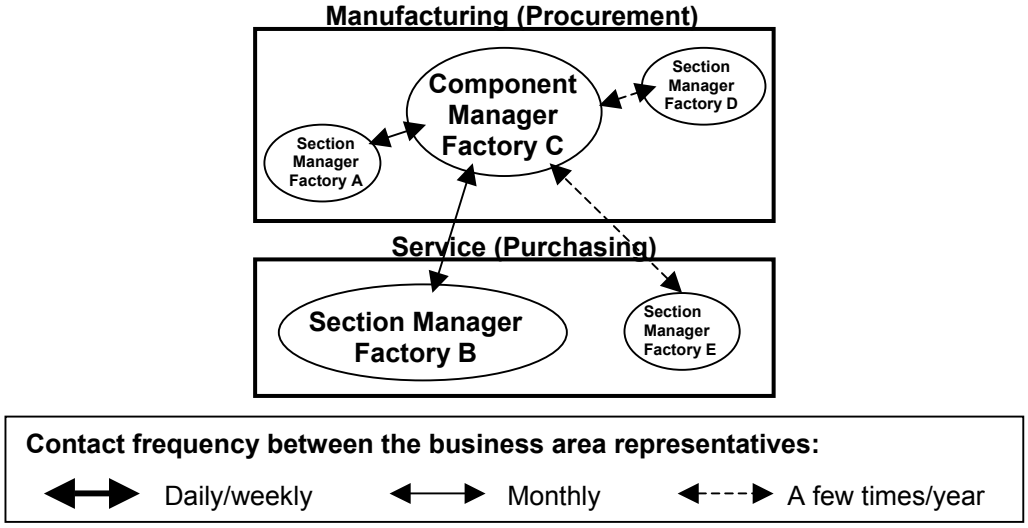

Figure 35. Manufacturing (Procurement) and Service (Purchasing) representatives and their inter-functional relationships in beta sourcing

7.3.2.3 Co-operation

In the opinion of the Service (Purchasing) representative, the decision-making authority in the sourcing process was unequally divided between Manufacturing (Procurement) and Service (Purchasing). He said that their needs were not automatically taken into account, and the respective Section Manager had to put serious effort into guarding their interests. This could perhaps be interpreted as a sign that both parties developed their strategies independently of one another. As far as Factory E Service (Purchasing) was

concerned, the co-operation was considered to be sufficient considering the low purchasing volume.

7.3.2.4 Risk/reward sharing

The Service strategic sourcing representative was aware that an MEP-project was currently underway (in 1999) at Bellona, but the respective Service Section Manager had no role in it. Thus the possible benefits resulting from it would have been at the disposal of Service (Purchasing) despite their lack of input. On the down-side, Service (Purchasing) had little involvement and no authority to influence the project. All in all, risk and reward sharing was not actively practised in sourcing activities involving both Manufacturing (Procurement) and Service (Purchasing).

7.3.2.5 Commitment

The primary parties involved in the sourcing process were the Manufacturing (Procurement) Component Manager and the Service (Purchasing) Section Managers from Factory B and Factory E. According to the Service (Purchasing) Factory B Section Manager, the Manufacturing (Procurement) Component Manager could also have been more diligent in taking into account the needs of Service (Purchasing).

The Service (Purchasing) Factory A department head was not directly involved. Local Service (Purchasing) in Factory C apparently was, although this went against the responsibilities defined in the Component Manager matrix[66].

7.3.3 Research & Development – Service (Purchasing)

7.3.3.1 Trust

On the strategic level, Service (Purchasing) was not in direct contact with Research & Development, thus the level of trust could not be determined. The only interaction between Research & Development and Service (Purchasing) on the operative level concerned new designs and changes in existing beta models.

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[66] The party in Service (Purchasing) responsible for sourcing activities was the Service (Purchasing) Factory B Section Manager and not the Factory C Service representative.

Contact between Service (Purchasing) and Research & Development in Factory E was only local, and the Factory B Service (Purchasing) Section Manager had no contact with Factory A Research & Development. According to the Factory E Service (Purchasing) Section Manager, lack of trust had never been a problem in the relationship with the local Research & Development representatives.

7.3.3.2 Communication

There had been no contact between the Service (Purchasing) beta Section Manager and Pegasus Research & Development, and no circulation of R&D reports or minutes of internal meetings to Service strategic purchasing. However, there was communication between Research & Development and Service operative purchasing once or twice a month in the form of early warnings on design changes from the respective Component Expert in Research & Development.

Research & Development was also in contact with the Technical Service[67] function of the Service Business Area. In the opinion of the Factory A R&D Component Expert, the information received from Technical Service should be more refined: it was not very useful for Research & Development to know that a component had malfunctioned in a particular Pegasus product. What would have been more useful was information about the nature of the problem, for example on the number of products involved.

Locally in Factory E, Research & Development and Service (Purchasing) representatives communicated on a case-by-case basis approximately once a month in relation to claims and other issues that the operative-level purchasing personnel had not been able to resolve. Design changes were discussed very seldom. The Factory E Service (Purchasing) beta Section Manager attended various Research & Development meetings, which were the primary source of R&D-related information.

Figure 36 below illustrates the lines of inter-functional communication and co-operation between representatives of Research & Development and Service (Purchasing) in beta sourcing.

[67] Among other things, Technical Service is responsible for collecting product-performance data in customer applications, and for giving technical assistance to customers.

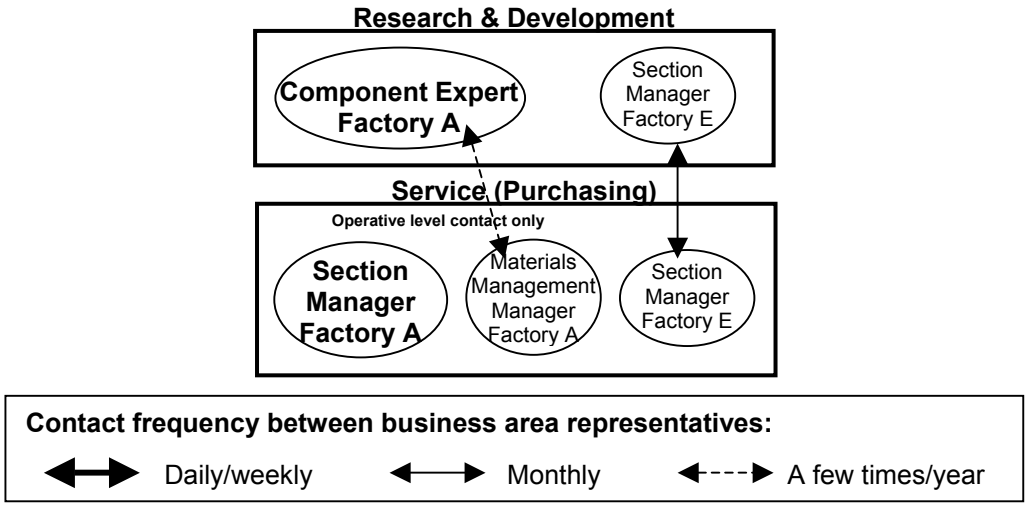

Figure 36. Research & Development and Service (Purchasing) representatives and their inter-relationships in beta sourcing

7.3.3.3 Co-operation

In the opinion of the Service Factory A Materials Management Manager, the Research & Development business area was the driving force in beta-sourcing activities. Manufacturing (Procurement) was the party implementing the process, and Service was often just forgotten. Service (Purchasing) had not engaged in any development projects with Manufacturing (Procurement) or Research & Development, and thus there was no joint strategy setting between either of the parties.

The beta purchasing volume in Factory E Service was very limited as the licensees manufactured their own betas, and the volume of spare-part purchasing was also low. This limited volume was one reason why contact and co-operation with Research & Development were restricted to some discussions in general meetings.

7.3.3.4 Risk/reward sharing

There was no formal risk/reward-sharing mechanism in place. In the short run, costs associated with new-product development were allocated to Manufacturing (Procurement) and Research & Development, although the costs of the frequent design changes fell to Service in the long run in the form of increased numbers of stock-keeping units, for example.

7.3.3.5 Commitment

The relationship between Service (Purchasing) and Research & Development was limited to some interaction between the Factory A R&D Component Expert and the Service (Purchasing) Materials Management Manager. Co-operation between Research & Development and Service (Purchasing) in Factory E was on the local level only. There appeared to have been very little commitment on either side to inter-functional relationships between Service (Purchasing) and Research & Development.

7.3.4 Relationship component scores

Figure 37 illustrates the relationship component scores of the relationship between Manufacturing (Procurement), Research & Development and Service (Purchasing) in beta sourcing. The key Manufacturing (Procurement) parties involved were the Factory C Component Manager and the Factory A Section Manager, while from Research & Development it was the Factory A Component Expert, although the Factory E Section Manager was in contact with local Service (Purchasing). The Factory B Section Manager from Service (Purchasing) was engaged in inter-functional sourcing operations.

	Manufacturing (Procurement)		Research & Development		Service (Purchasing)	
Manufacturing (Procurement)			TRUST	2	TRUST	1
			COMMUNICATION	1	COMMUNICATION	2
			CO-OPERATION	1	CO-OPERATION	1
			RISK/REWARD SHARING	1	RISK/REWARD SHARING	1
			COMMITMENT	1	COMMITMENT	1
Research & Development	TRUST	2			TRUST	1
	COMMUNICATION	1			COMMUNICATION	1
	CO-OPERATION	1			CO-OPERATION	1
	RISK/REWARD SHARING	1			RISK/REWARD SHARING	1
	COMMITMENT	1			COMMITMENT	1
Service (Purchasing)	TRUST	1	TRUST	1		
	COMMUNICATION	2	COMMUNICATION	1		
	CO-OPERATION	2	CO-OPERATION	1		
	RISK/REWARD SHARING	1	RISK/REWARD SHARING	1		
	COMMITMENT	2	COMMITMENT	1		

Figure 37. Relationship component scores of inter-functional relationships in beta sourcing

Again, note that each relationship component is a compilation of the individual relationships between the representatives involved in the inter-functional relationships. What should be kept in mind is their role in the Pegasus sourcing organisation on the one hand, and their actual involvement in cross-functional sourcing activities on the other.

7.4 Manufacturing (Procurement) – Intra-functional relationships

7.4.1 Trust

Lack of trust had apparently never been an issue between the Manufacturing (Procurement) representatives in the different business units. Beta procurement activities were very limited in Factory D, and its interaction with other product factories was therefore virtually non-existent. However, the Factory D Manufacturing (Procurement) representative did not feel that lack of trust had ever been a problem with the Factory C Component Manager.

7.4.2 Communication

The Manufacturing (Procurement) Factory C Component Manager was in contact with the Factory A Section Manager approximately twice a month on procurement-related issues such as purchasing volumes and other information related to e.g. suppliers. Both parties considered the bilateral communication to be sufficient, and face-to-face meetings took place a few times a year. As far as Factory D was concerned, communication was limited to a few telephone calls and e-mail messages a year, and the Factory D Section Manager would have appreciated more frequent updates on progress made by the Factory C Component Manager, and also more involvement in strategic procurement.

In the opinion of the Factory C Component Manager, guidelines or definitions for volume estimates and other data required in procurement decision-making differed from product factory to product factory in the Pegasus Corporation. The harmonisation of reporting practices and the metrics used would therefore have been appreciated. Production-budgeting practices also differed within the Pegasus group. Sometimes the budgeting was done in such a way that the details concerning the product type were left out. This detailed information on product configuration was sometimes of significant importance to the procurement personnel in estimating future purchasing

volumes, e.g., for each component type. Some product factories also included different models and configurations in the production budget.

The Manufacturing (Procurement) beta Component Manager was also a member of the sourcing group in his role as the head of Factory C Manufacturing (Procurement) Component Managers. He also received information from other product factories from the respective procurement-department managers in the monthly sourcing group meetings.

Figure 38 below shows the relevant lines of communication and co-operation between the Manufacturing (Procurement) representatives in beta procurement.

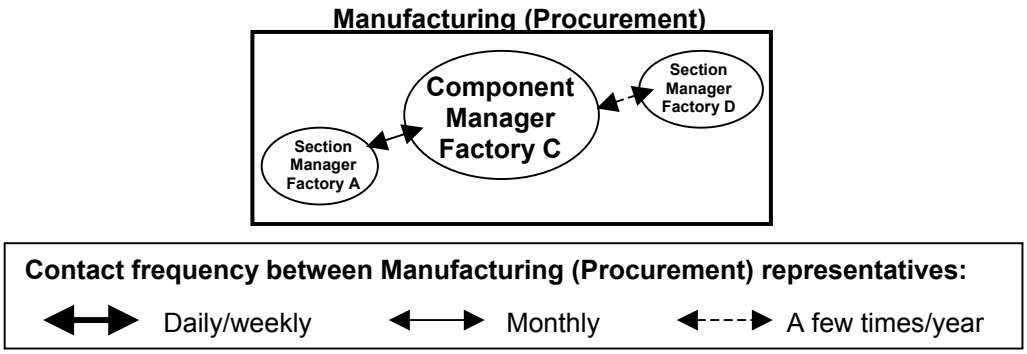

Figure 38. Manufacturing (Procurement) representatives and their inter-relationships in beta procurement

7.4.3 Co-operation

In the opinion of the Factory C Component Manager, co-operation with the Factory A Manufacturing (Procurement) Section Manager was easy and efficient. Co-operation in Factory D was considered sufficient given the low production volume. However, the Section Manager would have appreciated more involvement and bilateral co-operation even though the procurement volume was mostly made up of components for Medusa brand products primarily in the service business. He felt that the needs of production and Service were not given equal consideration in the Factory C Component Manager's work.

From the perspective of some Pegasus product-factory representatives, the MEP-projects were considered to be too Factory A and Factory B centred in terms of supplier development. It was also felt that the focus should shift from the operative level to strategic issues during the process-development phase, and that there should be a more comprehensive approach to developing both supplier and cross-organisational processes. Otherwise, the Manufacturing (Procurement) Section Managers and the Component Manager were satisfied

with the efforts of the Factory A Process Development personnel, and they also recognised their own role in making the MEP-projects successful.

7.4.4 Risk/reward sharing

The performance of the Component Manager and the Section Manager was measured on the Pegasus group-level, and the emphasis was on the development of direct purchase prices in the whole group (CM) and each product factory (SM). In Manufacturing (Procurement), the Component Manager was the primary party responsible for commercial issues (e.g., supply-contract negotiations) and development efforts directed at suppliers. Costs incurred in these activities, such as labour and related expenses, were allocated to the Component Manager's product factory. This same principle applied when the Section Managers were involved.

The MEP-project at Bellona would have benefited from a more general approach with respect to supplier development. The projects at that time were only focused on components purchased by Factory A and Factory B. The Factory A Process Development Expert called for more active participation by the Manufacturing (Procurement) representatives in suggesting and initiating new development projects. He only received comments on his work from suppliers, and not from the Pegasus organisation.

7.4.5 Commitment

The Factory C Manufacturing (Procurement) Component Manager was in charge of beta procurement. The Section Managers from the other Manufacturing Business Area product factories also participated in the process by giving assistance and support, and the Factory A procurement department's Process Development Expert was also involved. Direct executive or managerial involvement was minimal. The Factory D local procurement-department manager was actively involved in supporting the efforts of the local beta Section Manager.

7.4.6 Relationship component scores

Figure 39 below illustrates the relationship component scores of the intra-functional relationships between the key Manufacturing (Procurement) individuals involved in beta procurement.

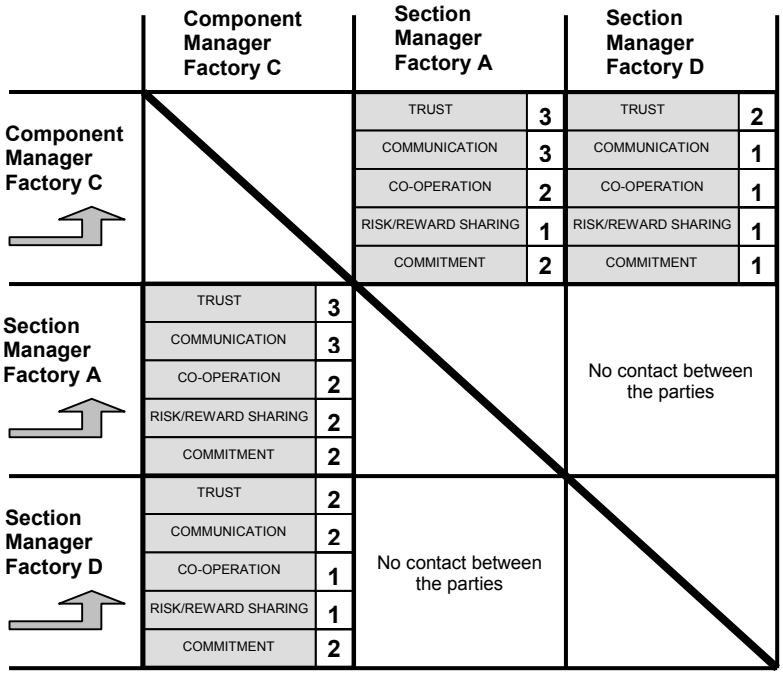

Figure 39. Relationship component scores of the intra-manufacturing (Procurement) relationships in beta procurement

The key Manufacturing (Procurement) representatives involved were the Factory C Component Manager, the Factory A Section Manager and the Factory D Section Manager. The Component Manager was responsible for Pegasus group-level sourcing, and each Section Manager handled their respective unit's procurement activities in co-operation with the Component Manager.

8 THE PEGASUS – DIONYSOS RELATIONSHIP

8.1 Introduction to the Pegasus – Dionysos relationship

This chapter describes the inter-organisational, inter-functional and intra-functional perspectives on the Pegasus – Dionysos buyer-supplier relationship, and evaluates them in terms of the research model developed in Chapter 5. The inter-organisational data is presented in a summarised form: the detailed data is to be found in Seppälä (2001).

Pegasus sources most of its deltas from outside suppliers, with the exception of the in-house manufacturing of two delta types at Factory A. Approximately half of them are designed in-house at Pegasus R&D, the rest being designed by suppliers on the basis of the performance criteria and specifications they set. Table 23 illustrates the supply relationship between the selected delta suppliers and the Pegasus product factories and Service (Purchasing).

Table 23. Dionysos' supply relationships with each Pegasus Product Factory and Service.

Supplier	Share of Pegasus' delta purchasing volume supplied by the supplier.	Pegasus' share of supplier's total sales.	**Component**	**PRODUCT FACTORY**					**SERVICE**
				A	**B**	**C**	**D**	**E** License support and Service	
DIONYSOS	75%	2%	Delta	X	-	-	-	-	-

The letter X marks a relation and a minus sign ('-') indicates no relation.

Dionysos experience and know-how of epsilon and the epsilon production process goes back to the 1960's. Traditionally, Dionysos was only a manufacturer of epsilons (for Pegasus since 1985), but in 1995 the two organisations engaged in a joint project to initiate production of the delta type for Pegasus 32, to be manufactured and assembled at Pegasus Factory A. This particular delta is an epsilon delta for which Dionysos itself manufactured the epsilon parts and the casing; the other parts were bought from external suppliers. Currently Dionysos is supplying deltas only to Pegasus Factory A. The Dionysos turnover in 1998 was 18 million euros, of which delta production accounted for only a fraction because it was at a very early stage. In 1999 the delta production facilities manufactured products solely for

Pegasus. In 1999 Dionysos ranked as number 57 on the list of biggest suppliers for Pegasus in terms of purchased value.

8.2 Inter-organisational relationships

8.2.1 Trust

Both Dionysos and Pegasus representatives perceived each other as trustworthy business partners. Apparently none of them had ever experienced any serious problems that resulted in a reassessment of trust in the relationship. Again in the transactional sense, trust was present and it was difficult to evaluate it on a more general, long-term level, or to determine whether both parties perceived each other's commitments as truly credible. What should be borne in mind is that Dionysos would not enter into a similar joint development project[68] (delta production) with Pegasus again, at least not on equal terms.

8.2.2 Communication

Representatives from both Manufacturing (Procurement) and Research & Development were in frequent contact with the Dionysos production and delta project managers almost on a weekly basis. The Dionysos managing director and marketing director were also involved in strategic issues. The primary party from Manufacturing (Procurement) was the Component Manager and from Research & Development the respective Component Expert. Face-to-face meetings took place approximately once every two months.

Both parties perceived the information exchanged to be of excellent quality, quantity and timeliness. However, the Dionysos representatives would have appreciated more information about future developments in general, and especially concerning Pegasus market development. The representatives from both companies very seldom[69] experienced situations in which either of the

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[68] Dionysos' experience and know-how of epsilon and its production process go back to the 1960's. Traditionally it was only a manufacturer of epsilons (for Pegasus since 1985), but in 1995 Pegasus and Dionysos engaged in a joint project to initiate delta production. The particular delta concerned is an epsilon delta for which Dionysos itself manufactures the epsilon parts, the delta cover and other parts being outsourced.

[69] However, discussions between Dionysos representatives, the Manufacturing (Procurement) Component Manager, the R&D Component Expert and Factory A procurement department's process development expert often turned into a three-way negotiation between Dionysos, the Factory A process development expert and both the Manufacturing (Procurement) Component Manager and the R&D Component Expert all taking different sides. Dionysos representatives were puzzled by this kind of negotiation practice. The process development expert was involved very seldom.

two companies had inconsistent communication about requirements and expectations.

Figure 40 illustrates the relevant lines of communication and co-operation in inter-organisational relationships between Pegasus and Dionysos.

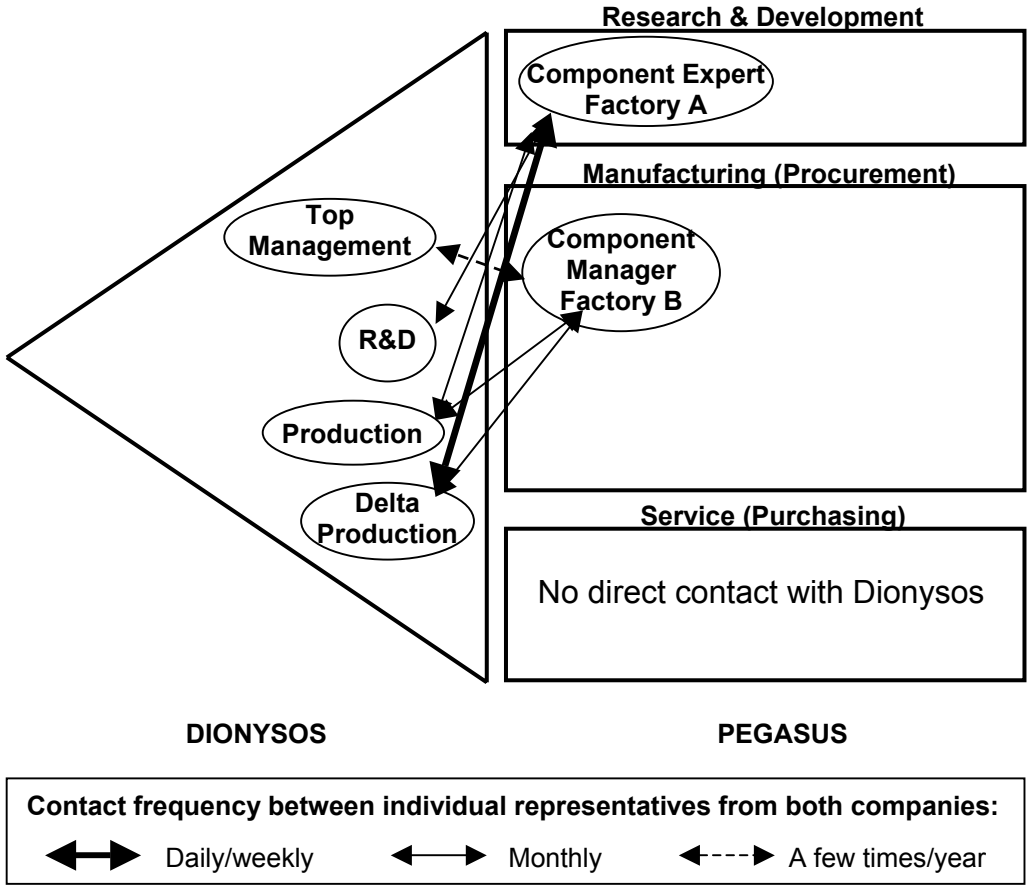

Figure 40. Relevant inter-organisational relationships between the Pegasus and Dionysos representatives

It is clear from the figure that the Dionysos and Pegasus business relationship was primarily maintained by the Manufacturing (Procurement) Component Manager and the R&D Component Expert. Service (Purchasing) was not involved.

8.2.3 Co-operation

Despite the existence of the delta project that enabled Dionysos to start manufacturing deltas (with epsilon parts), Manufacturing (Procurement) and Dionysos were engaged in a very traditional buyer–supplier relationship. Pegasus Research & Development designed the deltas and Dionysos manufactured them. There was limited interaction between the two parties.

The delta project and the delta cost-reduction activity that was being undertaken in 1999 were two projects that were not classified under the MEP-project acronym. Dionysos and Pegasus had not engaged in any joint strategy or goal setting concerning this business relationship, unless the Dionysos delta-production project could be considered as such.

There had not been any serious problems in this relationship that could have motivated possible joint problem-solving efforts. However, the parties were co-operating extensively in the delta-production project and were thus very likely to have engaged in joint problem solving.

8.2.4 Risk/reward sharing

Delta production at Dionysos was a joint project in which Pegasus offered its know-how to Dionysos free of charge, and Dionysos built both the delta-production cell and the test equipment at its own cost. The risks associated with the delta-production project were not shared.

As with other suppliers, the failure to deliver ordered goods on time would have resulted in penalties, and in the long run reasonable delivery accuracy was rewarded in terms of continuing the supply relationship. The quality level was monitored, and both rewards and punishments were applied in a similar manner as with other suppliers. Given inconsistencies in the Pegasus delivery-accuracy metrics and the relatively good level of Dionysos delivery accuracy, Dionysos did not accept any kinds of penalties on deliveries that, according to Pegasus, had not arrived on time. Their price level was also naturally compared with that of other delta suppliers. Correspondingly, if Pegasus failed to make payments on time, a penalty was imposed (i.e. interest on the invoiced amount).

8.2.5 Commitment

The primary party from Manufacturing (Procurement) involved in this relationship was the delta Component Manager. Direct managerial or executive involvement from Pegasus was minimal and social in nature, yet the whole delta production project was developed and initiated in these “social meetings”. Pegasus and Dionysos never entered into a specific delta-purchasing contract[70]. The price list that was valid at the time was drawn up on a year-by-year basis, and other terms of trade were adopted from the epsilon

[70] Dionysos was also manufacturing epsilons, which were used in some delta types. Pegasus was buying epsilons from Dionysos (see Seppälä 2001).

supply-contract. The main Dionysos parties involved in this relationship were the managing director, the sales director and the general production manager, along with the respective delta project manager.

Pegasus only made minor direct investments in this relationship. Nevertheless, they enabled Dionysos to start its own delta production in that Pegasus provided some of its end-product components free of charge for Dionysos to build the delta test system (required by Pegasus). Dionysos invested in the relationship by building a new manufacturing cell and test equipment for Pegasus deltas, and by using the services of a local university for design know-how. Dionysos was allowed to use its gained delta know-how and production capacity as it saw fit with other customers as well.

8.2.6 Relationship component scores

Figure 41 below shows the relationship component scores of the relationship between Dionysos and the different Pegasus business areas involved in this inter-organisational relationship. The most active representatives were the General Production Manager and the Delta Production Manager from Dionysos, and the R&D Factory A Component Expert and the Manufacturing (Procurement) Factory B Component Manager from Pegasus. Service (Purchasing) was not directly involved.

	Dionysos		Manufacturing (Procurement)		Research & Development	
Dionysos			TRUST	2	TRUST	2
			COMMUNICATION	3	COMMUNICATION	2
			CO-OPERATION	2	CO-OPERATION	1
			RISK/REWARD SHARING	1	RISK/REWARD SHARING	1
			COMMITMENT	2	COMMITMENT	2
Manufacturing (Procurement)	TRUST	2				
	COMMUNICATION	2				
	CO-OPERATION	2				
	RISK/REWARD SHARING	1				
	COMMITMENT	2				
Research & Development	TRUST	2				
	COMMUNICATION	2				
	CO-OPERATION	2				
	RISK/REWARD SHARING	1				
	COMMITMENT	2				

Figure 41. Relationship component scores of the Dionysos – Pegasus business area relationship

Note that each relationship component presented here is “an average” of the individuals participating in the inter-organisational relationships, given their role in the Pegasus sourcing organisation on the one hand, and their actual involvement in this inter-organisational strategic sourcing relationship on the other.

8.3 Inter-functional relationships

This section analyses the inter-functional relationships in delta sourcing between Manufacturing (Procurement) and Research & Development in the context of the relationship assessment model. Service (Purchasing) was not directly involved in delta sourcing on the strategic level.

8.3.1 Manufacturing (Procurement) – Research & Development

8.3.1.1 Trust

Trust was involved in the relationship between the Factory A R&D Component Expert and the Factory B Manufacturing (Procurement) Component Manager. Verbal agreements were honoured, and all in all, both parties were satisfied with the state of the relationship at that time. The Manufacturing (Procurement) Component Manager had not experienced any opportunistic behaviour from Research & Development, and vice versa. The same applied to the local relationship between Manufacturing (Procurement) and Research & Development in Factory C, where trust was also believed to have developed between the two business areas.

8.3.1.2 Communication

The primary party in contact with Manufacturing (Procurement) was the respective R&D Factory A Component Expert. He was responsible for all delta types, although his specific area of expertise was in deltas for Factories A and B. Communication took place daily, and face-to-face meetings were held once or twice a month. There was a secondary Research & Development contact in Factory C, as there was in Factory D with respect to the Pegasus 64 Product Group Leader. Contact between the Manufacturing (Procurement) Component Manager and the two latter parties was made approximately once a month and two to three times a year, respectively. Face-to-face meetings

were less frequent. The Manufacturing (Procurement) Component Manager was satisfied with the communication with all of the Research & Development representatives.

Locally in Factory C, the communication between the Manufacturing (Procurement) Section Manager and the respective designer was considered to be on a very good level, although only on an *ad hoc* basis. This Section Manager sent at least some e-mail courtesy copies of his discussions with the Manufacturing (Procurement) Component Manager to the Factory C Research & Development representative, although he was never in direct contact with the R&D Factory A Component Expert. This may very well have contributed in a negative way to the internal problems that were experienced in Manufacturing (Procurement), especially bearing in mind the significant role of Factory A Research & Development in sourcing activities.

Despite frequent communication, e.g., by telephone, between the Research & Development and Manufacturing (Procurement) representatives, the Factory A R&D Component Expert had limited knowledge of the strategic developments in Manufacturing (Procurement) that concerned deltas and delta suppliers. The Factory A delta Component Expert and Factory C Research & Development did not receive copies of the component action plans or the summary reports formulated by the Manufacturing (Procurement) Component Manager. However, most of the information included in the component summary reports was known to both parties as a result of frequent communication between the Research & Development and Manufacturing (Procurement) representatives. Similar comments were also received from the Factory B Research & Development representative, in that information concerning the strategic long-term perspective of Manufacturing (Procurement) on delta sourcing and supply would have been very much appreciated in a formal and written format. All in all, both the Research & Development and Manufacturing (Procurement) representatives would have liked to have received strategic information from each other with respect to components, suppliers and sourcing in general.

The Research & Development business area held internal meetings approximately once a year, in which future technological developments were discussed. A representative from Manufacturing (Procurement) was present at one of these task-team meetings. The Manufacturing (Procurement) Component Manager would also have appreciated more information concerning the strategic developments in the delta design. He also felt that both parties should have been present at each other's internal meetings concerning delta designs and sourcing.

The Factory D Manufacturing (Procurement) Section Manager had heard the name of the Research & Development delta Component Expert, although

he was not aware of his position. Consequently the two parties had never been in direct contact with each other. The Pegasus 64 Product Group Leader in Factory D had been the link between Factory A Research & Development and the Manufacturing (Procurement) Factory D Section Manager. This communication was considered sufficient in terms of quality, quantity and timeliness given the low production volume in Factory D.

Figure 42 below illustrates the lines of communication and co-operation between the Manufacturing (Procurement) and Research & Development representatives in inter-functional delta sourcing.

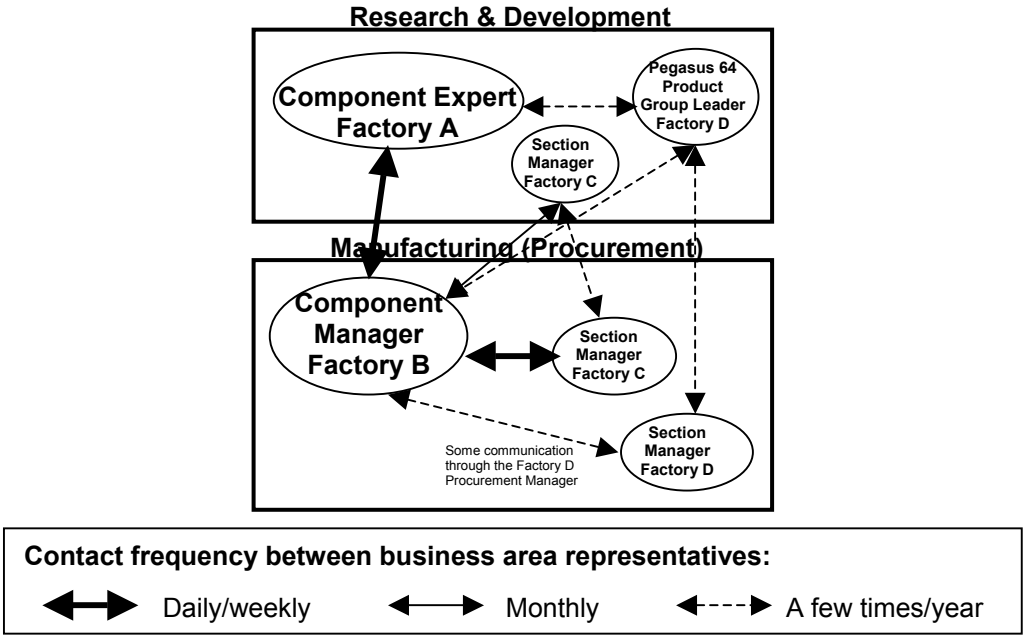

Figure 42. Manufacturing (Procurement) and Research & Development representatives and their inter-functional relationships in delta sourcing

8.3.1.3 Co-operation

Supplier selection and other sourcing-related issues were handled in co-operation between the Manufacturing (Procurement) Component Manager and the Research & Development Component Expert in Factories A and B, although the Factory A R&D Component Expert believed that Research & Development had the final decision-making authority in supplier-selection issues, for example. According to the delta Manufacturing (Procurement) Component Manager, new supplier search and pre-selection were carried out by Manufacturing (Procurement). Of the pre-selected set of suppliers, Research & Development and Manufacturing (Procurement) co-operatively chose the one that went forward for further consideration. This type of

arrangement for making joint decisions on suppliers and sourcing activities is, by definition, joint strategy and goal setting between two parties.

According to the Factory A R&D Component Expert, the decision-making authority was divided totally differently in Factory C, with Manufacturing (Procurement) controlling the supplier selection and other issues related to sourcing. However, both the Factory C Research & Development and Manufacturing (Procurement) representatives were satisfied with the arrangements, in which both parties participated equally in decision-making on sourcing. The Research & Development product groups participated in the process. According to the Factory C Research & Development representative, it was the R&D product-support group leader who decided which delta design would be selected and which supplier would be used.

8.3.1.4 Risk/reward sharing

Costs (i.e. labour and related costs) accumulated in sourcing were allocated to the participating business area. Research & Development bore the direct purchasing costs of prototype components, and the Manufacturing Business Area the costs of production parts. However, there was no formal practice for measuring joint inter-functional performance or sharing the risks and rewards involved. In other words, the long-run risk and reward sharing between Manufacturing (Procurement) and Research & Development was limited.

8.3.1.5 Commitment

With respect to sourcing decision-making, the primary parties involved were the Factory B Manufacturing (Procurement) Component Manager and the Factory A R&D Component Expert, both of whom appeared highly committed to joint sourcing activities. There had been no direct involvement from managerial or executive personnel from either side. Factory C sourcing activities involved the local Manufacturing (Procurement) Section Manager and the Research & Development representative. The delta make-or-buy decisions in Factory C involved the Factory A Concept Engineering Assistant Director, but otherwise executive or managerial involvement was limited to specific projects on a case-by-case basis.

8.3.1.6 Relationship component scores

Figure 43 below shows the relationship component scores of the relationship between Manufacturing (Procurement) and Research & Development business areas in delta sourcing. The key parties involved were the Factory B Component Manager and the Factory C Section Manager from Manufacturing (Procurement), and the Factory A Component Expert from Research & Development. Service (Purchasing) was not directly involved on the strategic level.

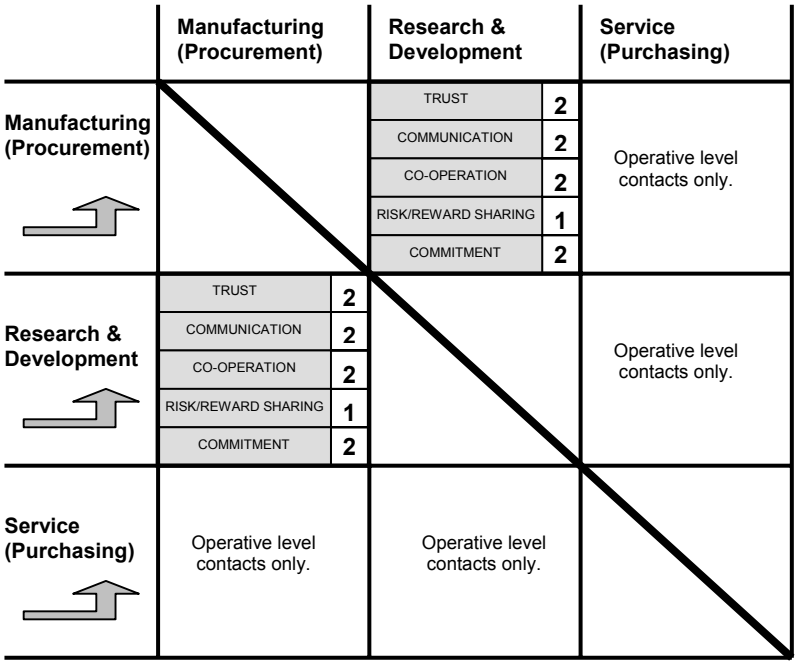

Figure 43. Relationship component scores of inter-functional relationships in delta sourcing

Note that each relationship component presented is a compilation of the individual relationships between the Manufacturing (Procurement) and Research & Development representatives involved in inter-functional sourcing activities, given their role in the Pegasus sourcing organisation on the one hand, and their actual involvement in these activities on the other.

8.4 Manufacturing (Procurement) – Intra-functional relationships

8.4.1 Trust

In the opinion of the Factory B Manufacturing (Procurement) delta Component Manager, the delta Section Manager in Factory C was not a team player. He felt that verbal agreements were often not honoured, and that information was deliberately withheld to allow the Factory C Section Manager to take action on his own. The Factory C Section Manager also reported incidents in which the Factory B Component Manager failed to perform according to the verbal agreements they had reached. Both parties argued that it was the lack of trust that was the problem, and that it had had a serious effect on their relationship. The Factory B Component Manager and the Factory C Section Manager had never been in contact with the Factory D Section Manager; thus it was impossible to determine the level of trust.

8.4.2 Communication

Communication between the Factory B Component Manager and the Factory C Section Manager took place weekly and often concerned actions the latter had taken in delta procurement. In the opinion of the Factory B Component Manager, the information received was of poor quality: for example, the Factory C Section Manager did not send information in the requested format. There was also room for improvement in both quantity and timeliness. The Factory C Section Manager claimed that the Factory B Component Manager had failed to inform him of his actions and to give feedback on his suggestions and the actions he had taken. The two parties met face-to-face four times during 1998.

As of March 1999, the Factory B Component Manager and the Factory D Section Manager had never been in contact with each other. According to the Factory B Component Manager, some attempts had been made through the Factory D procurement department manager, but without major success. The Factory D Section Manager did not have e-mail, and this may have partly contributed to the difficulties in communication between Factory D and the other Pegasus product factories. The Factory D Section Manager did not have a copy of the purchasing contract with Daphne[71], but he did have a copy of one other supplier's (Dido[72]) contract and the delta action plan and component

[71] See Seppälä (2001) for details concerning Dapne and its relationship characteristics.
[72] Dido is not among the suppliers studied here or in Seppälä (2001).

summary report. The Factory D Section Manager and the Factory B Component Manager have met once socially. However, it should be borne in mind that the Section Manager for deltas in Factory D was only appointed to the position at the beginning of 1999.

Figure 44 below illustrates the lines of communication and co-operation between the Manufacturing (Procurement) representatives in delta procurement.

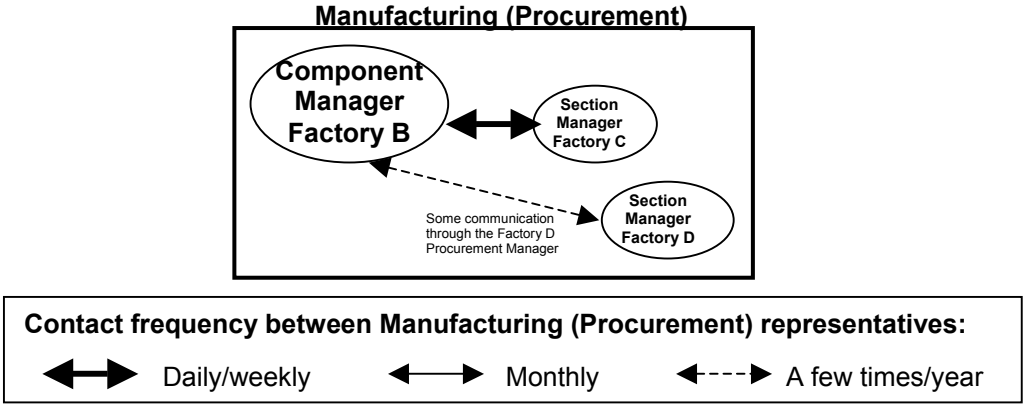

Figure 44. Manufacturing (Procurement) representatives and their inter-relationships in delta procurement

8.4.3 Co-operation

In the opinion of the Manufacturing (Procurement) Factory B Component Manager, the Factory C Section Manager was able, but not willing, to co-operate in Pegasus group-level procurement. He was not considered to be a team player. He in fact admitted to taking action on his own, as he had become frustrated with the low level of communication and co-operation from the Factory B Component Manager: discussion and co-operation with him had turned into an argument over who had done the right thing. The Factory C Component Manager's involvement in the supplier-development project had been limited to being informed about the developments at Daphne. The Factory D representative had never entered into any communication or co-operation.

As a result of these problems in co-operation, the Factory C Section Manager resigned from his position as the delta Section Manager. From March 1999 onwards he has concentrated on his duties as the Component Manager for operation-control units. His delta Section Manager duties were reallocated to the current epsilon Component Manager.

8.4.4 Risk/reward sharing

As for any other Component Manager, the component price level for deltas was measured on the group level. The risks and rewards were shared between the respective Manufacturing Business Area product factories participating in supplier development and other joint development projects.

8.4.5 Commitment

The procurement activities were headed by the Component Manager stationed in Factory B. The Factory C Section Manager was also involved, but he did not seem to be very committed to Pegasus group-wide procurement activities. The Factory D Section Manager should, at least in principle, have been involved in group-level procurement, but such involvement was very limited. Direct executive and managerial involvement was also limited, although these issues were often addressed in sourcing group meetings.

8.4.6 Relationship component scores

Figure 45 below illustrates the relationship component scores of the relationship between the key Manufacturing (Procurement) representatives involved in intra-functional delta procurement.

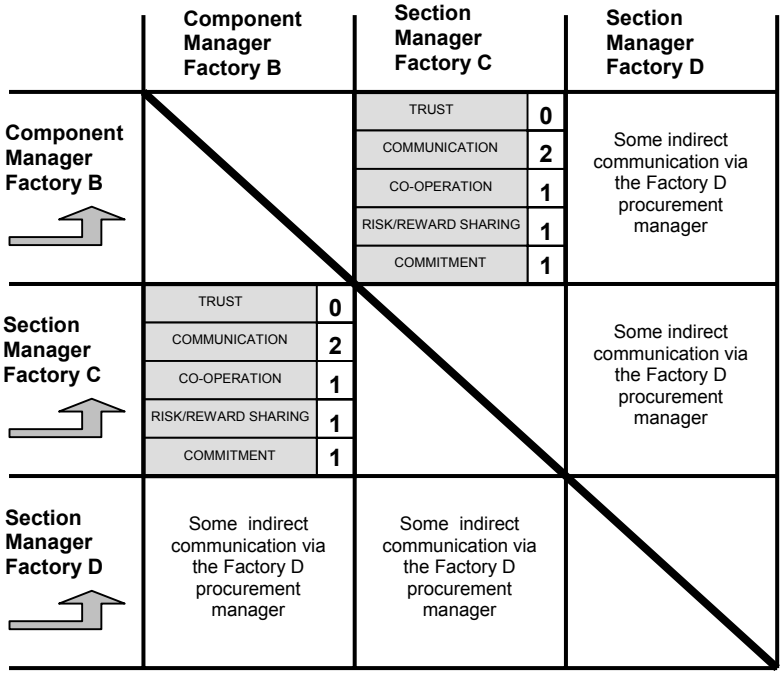

Figure 45. Relationship component scores of the intra-manufacturing (Procurement) relationships in delta procurement

The key individuals involved were the Factory B Component Manager and the Factory C Section Manager. The Factory D Section Manager was only involved indirectly and in a very limited manner via the Factory D procurement-department manager.

9 THE PEGASUS – GE/GEB RELATIONSHIP

9.1 Introduction to the Pegasus – Ge/Geb relationship

This chapter describes the inter-organisational, inter-functional and intra-functional perspectives on the Pegasus – Ge/Geb buyer-supplier relationship, and evaluates them in terms of the research model developed in Chapter 5. The inter-organisational data is a presented in a summarised form: the detailed data is to be found in Seppälä (2001). Table 24 illustrates the supply relationship between Ge/Geb and the Pegasus product factories and Service (Purchasing).

Table 24. Ge/Geb's supply relationships with each Pegasus Product Factory and Service.

Supplier	Share of Pegasus' gamma purchasing volume supplied.	Pegasus share of supplier's total sales.	**Component**	**PRODUCT FACTORY**					**SERVICE**
				A	**B**	**C**	**D**	**E** License support and Service	
GEB	60%	50%	Gamma	X	X	X	X	-	X

The letter X marks a relation and a minus sign ('-') indicates no relation.

Geb (previously Ge) had been a gamma supplier for Pegasus since the 1970s and was supplying Factory A, Factory B, Factory C, Factory D and Service in 1999. Pegasus R&D was under the impression that the purchased volume added up to approximately 50% of the Geb production volume in large-size gammas. This figure was confirmed by the Geb representatives, and it was also mentioned that, at one point in time, Pegasus' share of Geb large-size gamma sales had reached 60%. Ge was previously owned by a multinational mechanical-engineering group, but the whole group was acquired by an American automotive parts manufacturer – Geb – in 1997. Geb later made the decision to move gamma production from Germany (the Ge factory) to England, and this process took place in early and mid-1999. The Geb factory in Germany is referred to as Ge and the factory in England as Geb, in order to distinguish between the two production sites. In 1999 Ge/Geb ranked as the 47 biggest supplier for Pegasus in terms of purchased value.

9.2 Inter-organisational relationships

9.2.1 Trust

In general, Ge/Geb[73] and Pegasus had developed trusting relations on the short-term transactional level. However, the introduction by Pegasus of a new gamma supplier and the closing of the Geb plant in Germany had a negative effect on the more long-term relationship level. Pegasus representatives had no problem trusting Geb representatives on the day-to-day transactional level, yet the Ge/Geb representatives would most definitely not enter into the kind of investment project[74] in which they had been involved earlier on the basis of volume guarantees from Pegasus.

Geb representatives were also very sceptical about the role of the Factory A procurement department's process-development personnel and their goals. Concern was also expressed about the possibility of the process development experts communicating information about Geb production processes to a competitor recently added to the Pegasus gamma-supplier (i.e. Geryon[75]) portfolio. On the long-term relationship level, the Geb representatives had great difficulties trusting the Pegasus representatives and relying on their commitment.

9.2.2 Communication

The most active parties in communication between Pegasus and Geb were the Manufacturing (Procurement) Factory B Section Manager and the managing directors from both Geb and Ge. Communication took place on a weekly basis on issues mostly concerning Pegasus Factory A and Factory B (some strategic, but mostly operational issues), and especially the process of moving production from Germany to England. The three parties met approximately four times a year. The Factory A Manufacturing (Procurement) process-development representative and his partner from Factory A production were also very active in communication and interaction with Geb. The

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[73] Ge was previously owned by a multinational mechanical-engineering group, but the whole group was acquired by an American automotive parts manufacturer – Geb – in 1997. Later Geb made the decision to move gamma production from Germany (the Ge factory) to England, and this process took place in early and mid-1999. The Geb factory in Germany is referred to as Ge and the factory in England as Geb in order to distinguish the two production sites.

[74] Geb invested over 1.5 million euros in new production equipment in the mid-1990s. The initial investment decision was made on the assumption that Pegasus procurement volume would increase or at least remain stable.

[75] For details on Geryon and the buyer-supplier relationship, see Seppälä (2001).

Manufacturing (Procurement) Component Manager was in contact with the above-mentioned parties in Geb two or three times a month on Pegasus corporate-level issues, and had face-to-face meetings with Geb representatives two or three times a year. The Pegasus Research & Development representatives were in contact with Geb very seldom on a case-by-case basis, and face-to-face meetings took place very seldom, too (i.e. less than once a year).

Most Pegasus representatives perceived the communication from Geb as sufficient, and the information as such to be of good quality, quantity and timeliness. The Geb representatives had similar sentiments towards the Pegasus representatives in both Manufacturing (Procurement) and Research & Development, with the exception of the process development experts who they felt communicated in a very limited fashion. All in all, the communication about the Pegasus process-development personnel – including their roles and targets in this business relationship – was unclear. Moreover, the introduction by Pegasus of a new gamma supplier in competition with Geb was not done in a very sophisticated or professional manner. Communication on long-term strategic issues from Pegasus to Geb was far from open and honest.

There was a Pegasus Component Manager in the Manufacturing (Procurement) organisation responsible for gamma procurement on the group level. However, most inter-company communication and interaction took place with the representatives in Factories A and B. One could argue that this was a case of inconsistent communication from Pegasus towards a supplier, and a potential source of trouble in this business relationship.

Figure 46 illustrates the relevant lines of inter-organisational communication and co-operation between Pegasus and Ge/Geb.

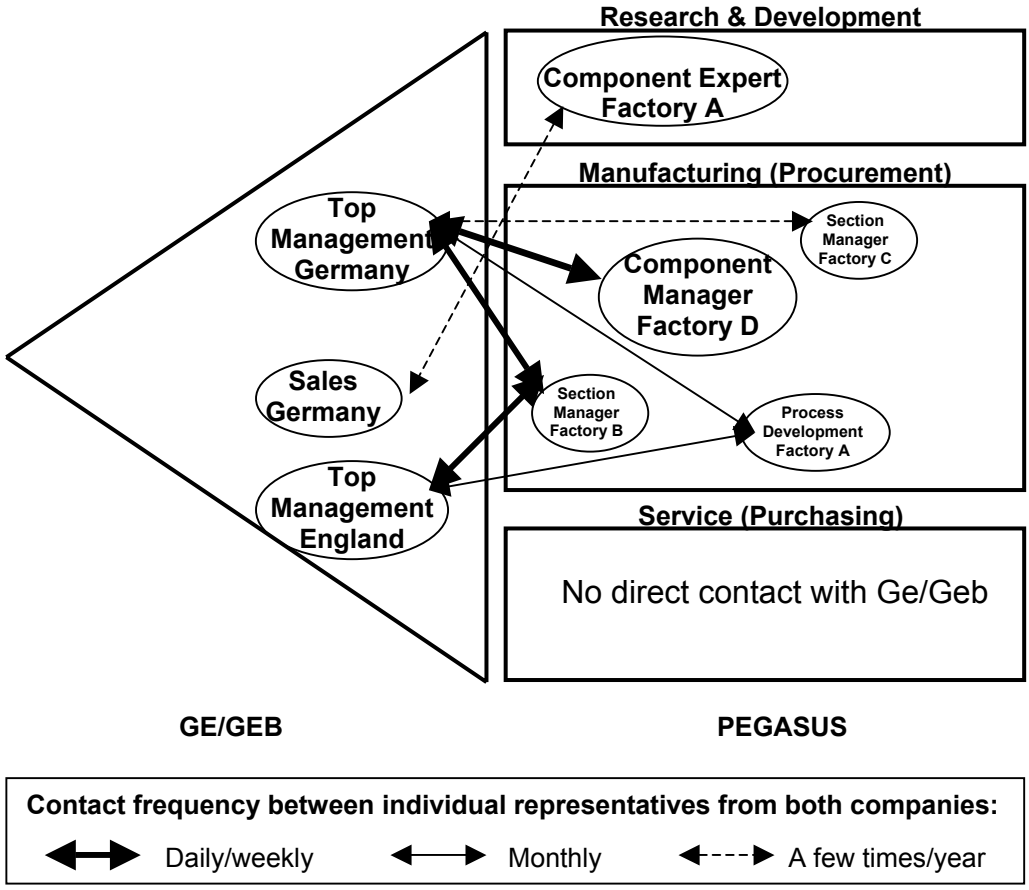

Figure 46. Relevant inter-organisational relationships between Pegasus and Ge/Geb representatives

The above figure illustrates that the Ge/Geb and Pegasus business relationship was primarily maintained by Manufacturing (Procurement) in Factory B, although it was formally under the responsibility and authority of the Manufacturing (Procurement) Component Manager in Factory D. Service (Purchasing) was not in strategic-level contact, and Research & Development contact was also very limited. The Factory A Process Development Expert was also relatively much involved in this business relationship.

9.2.3 Co-operation

Pegasus and Geb were engaged in a very traditional buyer–supplier relationship that involved very little co-operation beyond commercial transactions. In principle, Pegasus Research & Development designed the gamma components, and Geb manufactured them according to the drawings: this involved some interaction and communication concerning the manufacturability of the design. This was only natural, since Geb did not have

its own R&D resources that would have enabled it to design the gamma components for Pegasus applications. The two parties had not engaged in any kind of joint strategy or goal setting, despite the existence of the MEP-project. For example, the fundamental targets and goals of the Pegasus process-development personnel in the MEP-projects were unclear to the Geb representatives.

The MEP-project initiated by Ge in Germany, and then underway at Geb in England, was a co-operative effort between the two companies to jointly reduce manufacturing costs and production lead-time. Neither the Geb Germany nor the England representatives were aware of the term Manufacturing by Extended Partnership, although they were familiar with typical MEP-project characteristics. The actual "depth" of this co-operation was not determined. However, given the fact that the Geb representatives had trouble trusting the Pegasus process-development personnel, and had no knowledge of an actual MEP-project that was in progress, the co-operation was more likely to have been superficial than deep.

The plant closing in Germany was a potential cause of conflict for Geb, and especially for Pegasus. Both parties had apparently been actively discussing the moving process, and had jointly addressed the minor problems that had occurred so far. Some of the Pegasus drawings were also of poor quality, and both the Pegasus Factory A Manufacturing (Procurement) Process Development Expert and Geb England's managing director had jointly addressed the problem.

9.2.4 Risk/reward sharing

The MEP-project at Ge involved shared risks and rewards, at least in principle, as both Pegasus and Ge personnel participated jointly in efforts aimed at reducing the costs and lead-time of the Ge production process. The project was successful and the savings that resulted were split equally between the two partners. Both parties were at liberty to use their gained knowledge as they saw fit with other customers and suppliers. The same practice followed in the MEP-project at Geb in England.

Since Geb was only able to manufacture (and not design) gammas, the two parties had not engaged in any developed form of joint R&D. Consequently there was no need for risk or reward sharing in research and development activities.

Geb performance was measured in terms of price level, delivery accuracy and quality. When this was sufficiently in line with expectations, Pegasus rewarded Geb by offering it a share of the gamma procurement volume. If, on

the other hand, it failed to meet the set criteria, it was punished by the imposition of a penalty fee (e.g., for late deliveries) or a reduction in its share of the Pegasus purchasing volume. Pegasus was also punished if payment was delayed.

9.2.5 Commitment

All commercial issues were primarily handled by the Pegasus Manufacturing (Procurement) Component Manager and both the Factory B section manager and the Factory A Process Development Expert. The managing directors from both production locations were the primary Geb parties involved. Pegasus executive and managerial involvement was limited to issues concerning the plant closing in Germany and the production move to England. This business relationship was initiated in the 1970s and, in principle, allowed for long-term evolvement into a very developed buyer-supplier relationship. Yet, the supply-contract was only valid for one or two years at a time, and there was at least a theoretical chance that the relationship would be discontinued. Manufacturing (Procurement) and Service (Purchasing) had not made any relationship-specific investments in maintaining this relationship other than in working time and travelling expenses. It could also be argued that, had the MEP-project not been successful, the costs incurred would have been difficult to recover outside of this business relationship. The project was thus a very relationship-specific investment for Pegasus.

Geb invested over 1.5 million euros in new production equipment in the mid-1990s, and the initial investment decision was made on the basis of growing or at least stable Pegasus procurement volume. As such, none of the machines were Pegasus-specific, but they were relationship-specific to some extent.

9.2.6 Relationship component scores

Figure 47 below shows the relationship component scores of the relationship between Ge/Geb and the different Pegasus business areas involved. The most active Ge/Geb parties were the plant Managing Directors from both England and Germany. The Manufacturing (Procurement) Factory B Section Manager was the most active Pegasus party, but the Factory D Component Manager was also involved. The role of the Factory A Research & Development Component Expert was not as significant as in some other inter-organisational relationships. Service (Purchasing) was not directly involved.

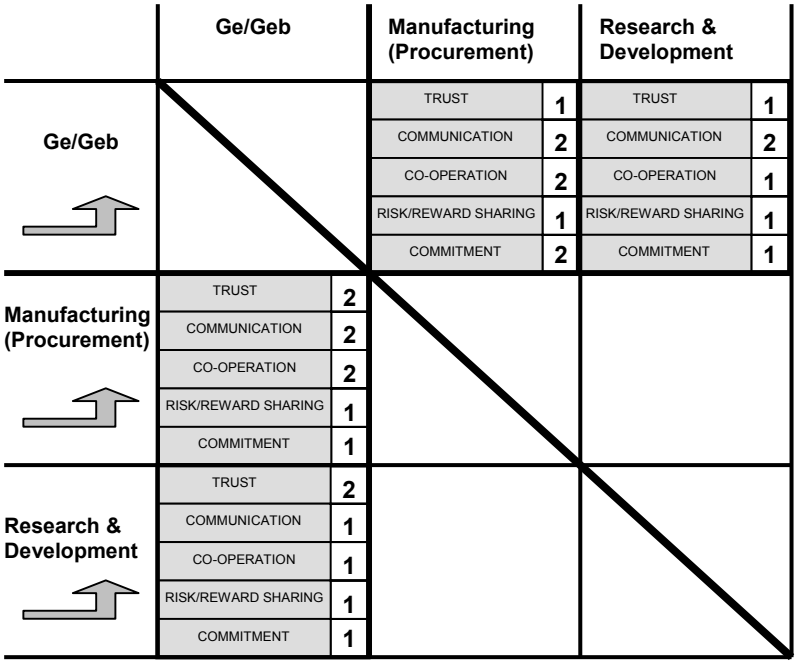

Figure 47. Relationship component scores of the Ge/Geb – Pegasus business area relationship

Note that each relationship component presented here for both Ge/Geb and each Pegasus function was "an average" of individuals participating in the inter-organisational relationships, given their role in the Pegasus sourcing organisation on the one hand, and their actual involvement in this inter-organisational strategic sourcing relationship on the other.

9.3 Inter-functional relationships

This section describes the inter-functional relationships in gamma sourcing between Manufacturing (Procurement) and Research & Development. The representatives of Service (Purchasing) were not directly involved, as on the strategic level it was represented by the Manufacturing (Procurement) component manager.

9.3.1 Manufacturing (Procurement) – Research & Development

9.3.1.1 Trust

At the time of the interview (March 1999), it was difficult to determine the level of trust between the Factory D Manufacturing (Procurement) Component Manager and the Factory A R&D Component Expert, as the two parties had never met and the communication in general had been very limited. However, trust was present, and verbal agreements were honoured in the relationship between the Manufacturing (Procurement) Factory B Section Manager and the Factory A R&D Component Expert. Co-operation between Manufacturing (Procurement) and Research & Development in Factory C in gamma sourcing was limited in that the Manufacturing (Procurement) representatives only received finished drawings from Research & Development; thus the parties were not engaged in a relationship in which trust could be evaluated.

9.3.1.2 Communication

The Factory A R&D gamma Component Expert and the Factory D Manufacturing (Procurement) Component Manager had never been in direct contact with each other. The latter had received some technology updates and other similar information from Factory A Research & Development, but only by fax. This limited communication between Factory A and Factory D meant that contact between Manufacturing (Procurement) and Research & Development was primarily local, between the Factory A Component Expert and the Factory B Section Manager, on a case-by-case basis approximately once a month. The issues discussed mainly concerned prototype part procurement, which was a typical part of the Section Manager's job. The Factory B Manufacturing (Procurement) Section Manager and the Factory A R&D Component Expert met very seldom.

From the perspective of the R&D Component Expert, information exchange with the Factory D Component Manager was of poor quantity, quality and timeliness, as none of his requests had been honoured. At times, this type of poor communication was also attributed to other members of Manufacturing (Procurement): for example, the Factory A procurement-department representatives had invited supplier representatives to meetings without inviting or even notifying the local Research & Development representatives. Research & Development learned about these visits from suppliers.

The Manufacturing (Procurement) Factory B Section Manager would have appreciated better-quality information from Research & Development. He was often expected to buy new gamma prototypes that were only marginally different from prior designs, or even at times identical to some older types. It was often the supplier who noticed this and informed the Factory B Section Manager. However, it could also be argued that the Section Manager should have been familiar with the components he had purchased previously. The Factory B Section Manager also called for more effort from Research & Development representatives in the design process in considering the suitability of some older designs for new applications (i.e. instead of producing some marginally different new prototypes).

The Factory D Manufacturing (Procurement) Component Manager had only received a single telephone call from the Factory A R&D Component Manager, in addition to three faxes sent during 1998 and early 1999. Factory A Research & Development had informed her about R&D work updates, and had also complained about her performance. Despite some communication from Research & Development, she had no knowledge of Research & Development's plans for the future, or of what actions it had recently taken with respect to gamma R&D and gamma suppliers. Sometimes such actions had resulted in delays in the supplier's production that were communicated to the Factory D Manufacturing (Procurement) Component Manager through the suppliers themselves.

Prices and delivery terms included in the purchasing contract had not been distributed to Pegasus Research & Development. Moreover, the Factory A R&D Component Expert had never seen a gamma action plan or a component summary report, and he was somewhat puzzled by the actions for which he was reported to be responsible. Some minutes of meetings had been communicated from Research & Development to Factory B Manufacturing (Procurement), although the respective Manufacturing (Procurement) Section Manager could not evaluate the comprehensiveness of this information.

Figure 48 below illustrates the lines of inter-functional communication and co-operation between the Manufacturing (Procurement) and Research & Development representatives in gamma sourcing.

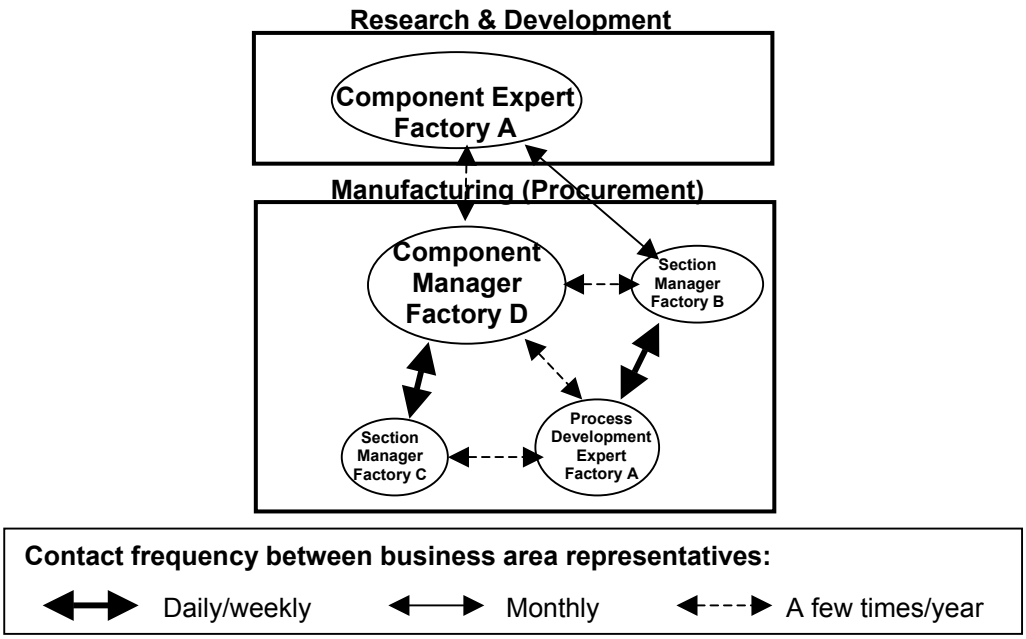

Figure 48. Manufacturing (Procurement) and Research & Development representatives and their inter-relationships in gamma sourcing

9.3.1.3 Co-operation

According to the Factory A R&D Component Expert, the sourcing decision-making authority was equally divided between Manufacturing (Procurement) and Research & Development. Some aspects naturally came under the responsibility of Research & Development, and some under Manufacturing (Procurement). The Factory B Manufacturing (Procurement) Section Manager said that the Research & Development business area decided which suppliers were approved. The quality and procurement departments were given the opportunity to comment, but Research & Development maintained the list of approved suppliers, and it had the final decision-making authority. Manufacturing (Procurement) was at liberty to select its supplier from this list.

The Factory A R&D Component Expert had heard about the MEP-projects headed by the Factory A Process Development Expert. Research & Development's role in these projects was unclear to him, but he thought they were a good idea. Manufacturing (Procurement) and Research & Development had not engaged in joint strategy setting regarding sourcing activities and suppliers.

9.3.1.4 Risk/reward sharing

The development projects at the suppliers came under the responsibility of Manufacturing (Procurement), which thus bore all the costs. Research & Development were not directly involved in any of the supplier-development projects. As with any other component-prototype part, costs were allocated to Research & Development and the production allocated to the respective Manufacturing Business Area product factory. All in all, risk and reward sharing was apparently not an issue in the relations between Manufacturing (Procurement) and Research & Development. As far as gamma sourcing was concerned, both parties worked almost independently and did not concern themselves with the actions and targets of the other business area.

9.3.1.5 Commitment

Relations between Research & Development and Manufacturing (Procurement) were primarily handled locally between the Factory B Manufacturing (Procurement) Section Manager and the Factory A R&D Component Expert. Neither of them appeared very highly committed to joint inter-functional sourcing activities. Component Manager status had apparently (in 1999) not yet been fully established in Factory D, thus making it difficult to handle relations between Research & Development and Manufacturing (Procurement) in an efficient manner. Top-management involvement from both parties was limited to sourcing group meetings.

9.3.1.6 Relationship component scores

Figure 49 below illustrates the relationship component scores of the relationship between the Manufacturing (Procurement) and Research & Development business areas in gamma sourcing. Those most involved were the Factory B Section Manager, and to some extent the Factory D Component Manager from Manufacturing (Procurement), and the Factory A Component Expert from Research & Development. Service (Purchasing) was not directly represented in inter-functional sourcing activities on the strategic level.

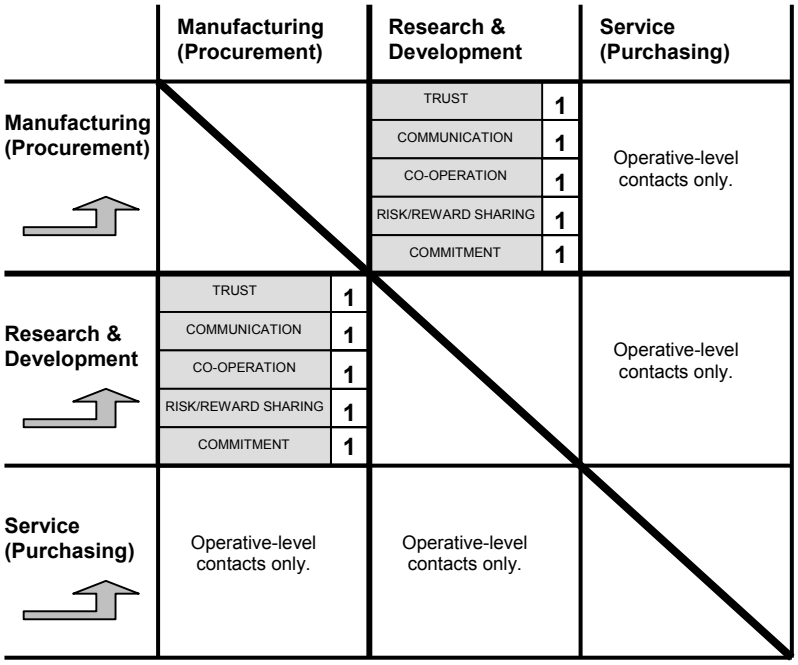

Figure 49. Relationship component scores of inter-functional relationships in gamma sourcing

Note that each relationship component presented here is a compilation of the personal relationships between the Manufacturing (Procurement) and Research & Development representatives involved in inter-functional sourcing activities, given their role in the Pegasus sourcing organisation on the one hand, and their actual involvement in these activities on the other.

9.4 Manufacturing (Procurement) – Intra-functional relationships

9.4.1 Trust

In the opinion of the Factory B gamma Section Manager, trust was present in relations with both the Factory C Section Manager and the Factory D Component Manager. Verbal agreements were sometimes not honoured, although this kind of behaviour was not considered to be intentional. The Manufacturing (Procurement) Factory D Component Manager believed he had trusting relations with the Factory C Section Manager, and both were under the impression that the Factory B Section Manager and especially the Factory A procurement department's Process Development Expert did not fully disclose the work they had done or the information they had. This type of behaviour was widely considered to undermine the work of the Factory D Component Manager and to reduce trust between the parties.

9.4.2 Communication

Communication between the Manufacturing (Procurement) Factory D Component Manager and the Factory B Section Manager took place a few times a year on issues relating to strategic procurement and co-operation in procurement activities. The quality of the information was considered to be poor in that what was received sometimes did not correspond with what was asked for, and in the opinion of the Manufacturing (Procurement) Factory B Section Manager, information exchange was slow. Face-to-face meetings took place a few times a year. The Factory D Component Manager was satisfied with the information received from Factory B in that it was given when requested. The Manufacturing (Procurement) Factory B Section Manager felt that language might have accounted for some of the problems in communication, as both parties were using a foreign language (English). Despite the problems, however, he was confident that both parties were trying to make both communication and co-operation work. On the other hand, the Factory D Component Manager considered the Factory B Section Manager passive and reactive in his work and communication. The two parties met five or six times in 1998. The Factory A Process Development Expert was in contact with the Factory D Component Manager very seldom, and it was evident that the Component Manager was not very well informed about the process-development activities that were taking place at the gamma suppliers.

The Factory B Section Manager was also informed of the actions taken by the Process Development Expert, and they were in almost daily contact, especially in connection with issues relating to Geryon. The Factory D Component Manager was under the impression that both the Factory B Section Manager and the Factory A Process Development Expert were handling the majority of the procurement and sourcing operations on their own without consulting or even informing the Factory D Component Manager.

The Factory C Section Manager was in almost weekly contact with the Factory D Component Manager, during which time he reported on the actions he had taken locally in Factory C in relation to gamma procurement. The two parties met approximately three times in 1998. In the opinion of the Factory D Component Manager, this relationship and communication were working well, although the Factory C Section Manager was not very satisfied because the information had to be specifically asked for. He was under the impression that the Factory D Component Manager did not have full knowledge of the gamma-procurement activities and suppliers. The Manufacturing (Procurement) Factory A Process Development Expert had informed the

Factory C Section Manager of the developments at supplier Ge, but otherwise communication had been limited, and had never concerned Geryon and the development done with this supplier.

Figure 50 below illustrates the lines of intra-functional communication and co-operation between the Manufacturing (Procurement) representatives in gamma procurement.

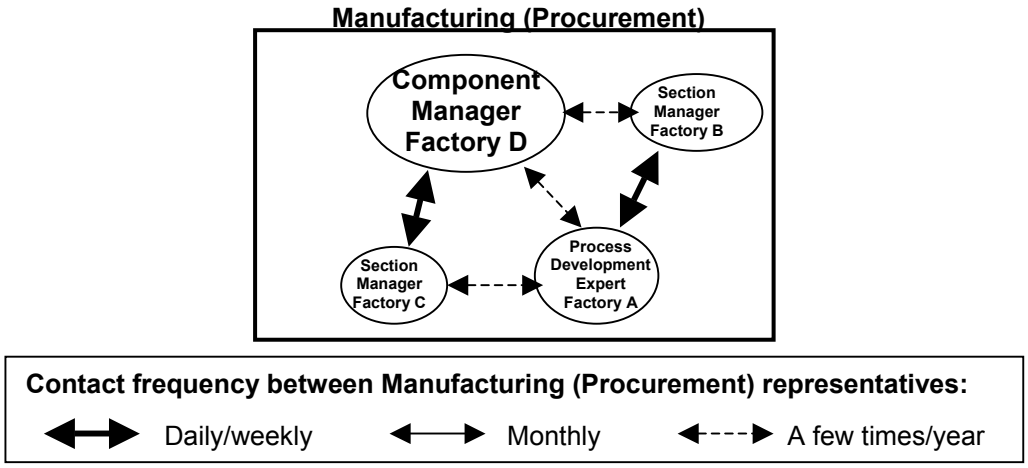

Figure 50. Manufacturing (Procurement) representatives and their inter-relationships in gamma procurement

9.4.3 Co-operation

In the opinion of the Factory B Section Manager, the Factory D Component Manager had made it clear in her communication to Factory A and B representatives that she was the component manager responsible for gamma procurement. In one instance, a request arrived from Factory A for a quotation for gamma components for one of the many Pegasus products. The Factory B representative attempted to contact the Component Manager in Factory D, but when this failed he conducted the inquiry himself and informed the Component Manager of his actions. A few days later a fax arrived telling the Factory B Section Manager that she had already sent the request for a quotation, and that she was the acting component manager and responsible for the component manager's work. At times, suppliers had informed the Factory D Component Manager about the actions taken by the Section Managers or development personnel from other corporate units, mainly Factories A and B. Co-operation between the Factory D Component Manager and the Factory C Section Manager was considered to be of good quality. However, the Factory C Section Manager was not equally satisfied with their co-operation.

The Geb factory in England was seen as a new supplier in the Pegasus supplier portfolio. Basically, supply-agreement negotiations had to be started

from scratch. The negotiation responsibility was in Factory D, and nothing had happened by May 1999, although production was expected to start in mid-1999. The Manufacturing (Procurement) Factory B Section Manager was somewhat puzzled by this kind of delay and reluctance to tackle the issue. The Pegasus Factory D and Factory C representatives, along with the Geb representative in England, all considered this supply-contract problem to be related to internal problems in the Manufacturing (Procurement) organisation. All of the above parties claimed that the Manufacturing (Procurement) Component Manager had not received all the necessary information[76] from the Pegasus Factory A and B representatives to allow her to negotiate the best possible supply agreement with the gamma suppliers.

The Manufacturing by Extended Partnership Projects were headed by the Factory A procurement department's Process Development Expert. The respective Component Manager in Factory D had no knowledge of the MEP actions taken by the Factory A process-development representatives at Ge/Geb or Geryon. All in all, as the Factory D Component Manager saw it, the Factory A and Factory B representatives took action on their own without consulting her, thus undermining her work. In her opinion she had not reached true Component Manager status in their eyes. The Factory C Section Manager had a similar impression of the work done by the Pegasus Factory A Process Development Expert, and he had had no involvement in the MEP-projects either.

Both the Factory C Section Manager and the Factory D Component Manager reported problems to do with the way of working with the Factory A procurement department's Process Development Expert. In one meeting with Geryon, the Pegasus development representative withheld information from the Manufacturing (Procurement) representatives about the cost of raw material to Geryon. This information would have enabled the Manufacturing (Procurement) Component and Section Managers to make valid comparisons on the supplier price level and the value added. This type of behaviour was considered to have seriously undermined the work and the role of the Component Manager. It could perhaps have been argued that price issues and decision-making on supply-contracts fell under the authority of the Manufacturing (Procurement) Component Manager, and that the Process Development Expert should perhaps have focused more on the manufacturing process development.

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[76] Here, "all necessary information" includes cost information from all relevant suppliers and figures on the sub-supplier's (forging suppliers) raw-material cost level.

9.4.4 Risk/reward sharing

The Component Manager was the primary party responsible for contract negotiations and development efforts at the suppliers. The costs incurred in the process were allocated to the Component Manager's product factory. When Section Managers from other product factories were involved, each product factory bore the costs of their personnel's work and other related expenses. It was as if risk and reward sharing were not widely practised in the Manufacturing (Procurement) organisation. Despite group-level targets for procurement activities, each Manufacturing Business Area product factory appeared to be the dominant unit of analysis.

9.4.5 Commitment

The Process Development Expert from Factory A procurement department and production, as well as the Factory D Component Manager and the Section Managers from Factories C and B, were involved in strategic procurement. There had been no direct involvement by Manufacturing (Procurement) executive or managerial personnel. Issues relating to gamma procurement were addressed in the sourcing group meetings, and possible comments and decisions were communicated to the Component Manager.

All in all, the Factory A Manufacturing (Procurement) Process Development Expert did not seem to be very committed to Pegasus group-wide procurement activities, which were headed by the Factory D Component Manager. The Factory B Section Manager also appeared to put the interests of Factory A and Factory B ahead of group targets.

9.4.6 Relationship component scores

Figure 51 below illustrates the components of the relationship between the key Manufacturing (Procurement) representatives involved in gamma procurement.

	Component Manager Factory D		Process Development Expert, Factory A		Section Manager Factory B		Section Manager Factory C	
Component Manager Factory D			TRUST	0	TRUST	2	TRUST	2
			COMMUNICATION	1	COMMUNICATION	1	COMMUNICATION	1
			CO-OPERATION	1	CO-OPERATION	1	CO-OPERATION	2
			RISK/REWARD SHARING	1	RISK/REWARD SHARING	2	RISK/REWARD SHARING	1
			COMMITMENT	0	COMMITMENT	1	COMMITMENT	1
Process Development Expert Factory A	TRUST	1			No contact between the parties		No contact between the parties	
	COMMUNICATION	1						
	CO-OPERATION	1						
	RISK/REWARD SHARING	1						
	COMMITMENT	0						
Section Manager Factory B	TRUST	2	No contact between the parties				No contact between the parties	
	COMMUNICATION	1						
	CO-OPERATION	2						
	RISK/REWARD SHARING	2						
	COMMITMENT	1						
Section Manager Factory C	TRUST	2	No contact between the parties		No contact between the parties			
	COMMUNICATION	2						
	CO-OPERATION	2						
	RISK/REWARD SHARING	1						
	COMMITMENT	1						

Figure 51. Relationship component scores of the intra-manufacturing (Procurement) relationships in gamma procurement

The key individuals involved were the Factory D Component Manager, the Factory B Section Manager, the Factory D Section Manager and the Factory A Process Development Expert.

10 THE PEGASUS – ECHO RELATIONSHIP

10.1 Introduction to the Pegasus – Echo relationship

This chapter describes the Pegasus – Echo buyer-supplier relationship, and evaluates it from the inter-organisational, inter-functional and intra-functional perspectives using the research model of buyer-supplier relationships developed in Chapter 5. The inter-organisational data is presented in a summarised form: for details, see Seppälä (2001). Table 25 below illustrates the supply relationship between Echo and the Pegasus product factories and Service (Purchasing).

Table 25. Echo's supply relationships with each Pegasus Product Factory and Service.

Supplier	Share of Pegasus' epsilon purchasing volume supplied by the supplier.	Pegasus share of supplier's total sales.	**Component**	**PRODUCT FACTORY**					**SERVICE**
				A	**B**	**C**	**D**	**E** License support and Service	
ECHO	17%	3%	Epsilon	-	-	X	X	-	-

The letter X marks a relation and a minus sign ('-') indicates no relation.

Echo was introduced to the Pegasus supplier portfolio in 1989 when Pegasus Corporation acquired the majority share of one of its competitors (Factory C). It has been supplying epsilons to Factory C since 1986. It has three production facilities, located in Belgium, Romania and the Czech Republic, with 500 employees in total. According to the Echo representatives, its core business was cost-efficient epsilon production in relatively small volumes. Pegasus accounted for 5–10% of Echo sales volume, which in 1997 was approximately 42 million euros. Echo had made a strategic decision to avoid being too dependent on a single customer, hence its biggest customer took only approximately 20% of the total sales volume.

Most Echo products are designed by the customer's own R&D personnel, but for about 10% of the output, the design work is carried out by Echo from beginning to end according to customer specifications. Currently, it only manufactures epsilons for Pegasus- and Medusa-brand products, and supplies these components to Factory C and Factory D. In the early 1990s it also supplied epsilons to Factory A, but this relationship was discontinued,

although efforts are underway to re-establish a supply relationship with both Factory A and Factory B. Factory E currently has no relations with Echo, as this supplier only specialises in the epsilon types that are most suitable for Pegasus brand products. In 1999 Echo ranked as number 43 on the list of biggest suppliers for Pegasus in terms of purchased value.

10.2 Inter-organisational relationships

10.2.1 Trust

In general, both Pegasus and Echo representatives perceived each other as trustworthy business partners. However, in late April 1999 Echo experienced problems in this respect, especially with reference to Pegasus Factories A and B. Both parties committed themselves to a contract that was then not accepted by the Pegasus Research & Development representatives in Factory A. Partly as a result of this, it became difficult for Echo to believe Pegasus with respect to the promises and even the threats that were made regarding this relationship. The problem was not perceived to be related to the relationship between the Manufacturing (Procurement) Component Manager and the Echo Sales Representative. On the contrary, the Echo representatives argued that the problem could have been attributed to Pegasus' internal problems between Manufacturing (Procurement) and Research & Development.

All in all, in the transactional sense, trust was present, but it was difficult to evaluate it on a more general, long-term level, or to determine whether both parties perceived each others' commitment to be truly credible.

10.2.2 Communication

Communication between the two companies primarily took place between the Manufacturing (Procurement) Factory C Component Manager and the Echo sales director almost on a weekly basis. The Echo technical director also discussed these technical issues with the Pegasus R&D Component Expert approximately once a month. Face-to-face meetings between the representatives from both companies took place approximately once every two or three months.

Both parties considered the inter-company communication efficient and sufficient in terms of quality, quantity and timeliness. The representatives from both companies had very seldom experienced inconsistent communication about requirements and expectations from either of them,

although the problem associated with the supply-contract negotiations was clearly one example of such a situation.

Figure 52 illustrates the relevant lines of inter-organisational communication and co-operation between Pegasus and Echo.

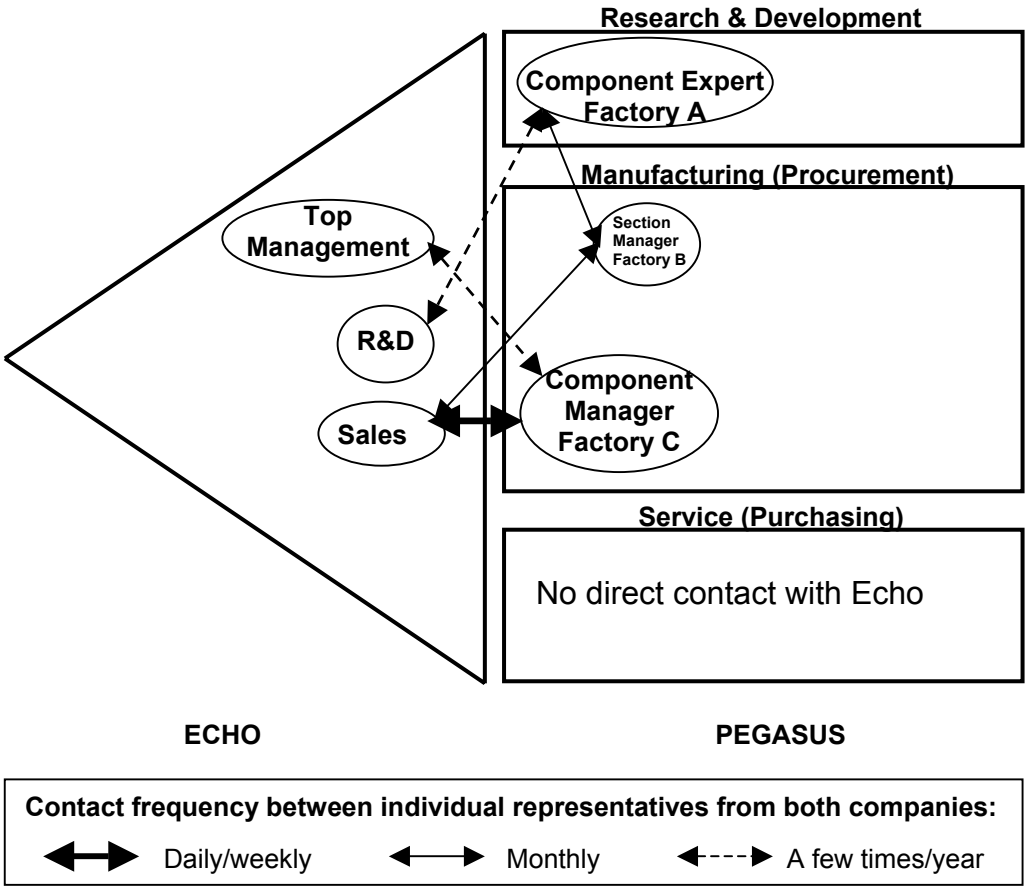

Figure 52. Relevant inter-organisational relationships between Pegasus and Echo representatives

The above figure illustrates that the Echo and Pegasus business relationship was primarily maintained by the Manufacturing (Procurement) Factory C Component Manager. The Factory A R&D Component Expert was involved to a very limited extent. It appears that there were some internal problems in the Pegasus organisation between Factory A Research & Development and the Factory C Manufacturing (Procurement) Component Manager, and that these problems had had a negative effect on this relationship.

10.2.3 Co-operation

The co-operation between Echo and Pegasus was apparently limited to a traditional buyer–supplier relationship and, at best, to manufacturability considerations concerning old and new epsilon designs, despite the contrary impressions of the Manufacturing (Procurement) Component Manager and the Echo representatives. Echo and Manufacturing (Procurement) had not engaged in any joint strategy development or goal setting concerning this relationship.

In late April 1999, Echo and Pegasus experienced a problem in respect to the new supply-contract for Pegasus Factory A and Factory B. The contract was negotiated and signed by the Pegasus Manufacturing (Procurement) Component Manager. Later it turned out that Pegasus Research & Development did not approve of this contract, and that before Factories A and B could enter into a contract with Echo, the supplier had to be approved by representatives from Pegasus Factory A Research & Development. However, Echo had already been audited and approved by Pegasus Factory C, and it remained unclear why it had to be approved again, and why approval by Pegasus Factory C was not sufficient proof of suitability. This practice of approving a supplier for a particular product (or products in this case) was rare among other Echo customers. Apparently, the above-mentioned problem had more to do with the internal relations between different Pegasus business areas and product factories than between Echo and Pegasus as such. It remained unclear if and how this problem was being addressed in inter-organisational efforts.

10.2.4 Risk/reward sharing

Echo and Pegasus had never engaged in any joint development projects on any aspect of this business relationship. Therefore, joint risks had not been taken and risk/reward sharing was not an issue. Supplier performance was again evaluated by measuring delivery accuracy and product quality along with price level. As with other suppliers, all efforts were rewarded by offering a share of the Pegasus purchasing volume. Failure to deliver goods on time resulted in penalties that were mentioned in the purchasing agreement, and failure to meet product specifications resulted in repair costs and possible freight costs being allocated to the supplier. If the part could not be repaired, a new one was to sent to Pegasus free of charge, although Pegasus would pay for the transportation. If Pegasus failed to make payment on time, a penalty (i.e. interest on the payment) was imposed.

10.2.5 Commitment

The primary party involved in this relationship was the Manufacturing (Procurement) Factory C Component Manager, although the Factory B Section Manager had limited involvement. Executive or managerial involvement from Pegasus was very limited, and on the Echo side, it was the sales manager who was the most active party. Locally in Factory C, Pegasus factory management and Echo top management worked together on solving delivery problems. The Pegasus Factory A R&D Component Expert also had some involvement.

Pegasus had not made any relationship-specific investment in this relationship. It did pay for some tools that were needed in the production process, but these costs were included in the sales price of the first batch of epsilons ordered from Echo. Echo did not invest in any Pegasus-specific testing or production equipment either.

At the time of the data collection (in 1999), only Pegasus Factory C had a valid purchasing contract with Echo, although attempts were under way to include Factory B and Factory A. The current purchasing contract is a rolling contract, but the price list has been agreed for a three-year period.

10.2.6 Relationship component scores

Figure 53 below shows the relationship component scores of this inter-organisational relationship between Echo and the different Pegasus business areas involved. The Echo Sales Director was the most active party, but the Technical Director also made a contribution. The Pegasus Manufacturing (Procurement) Factory C Component Manager was actively involved, and the Factory B Section Manager also had some contact with the supplier. The involvement of the R&D Factory A Component Expert was relatively limited, and Service (Purchasing) only had operative-level contacts with this supplier.

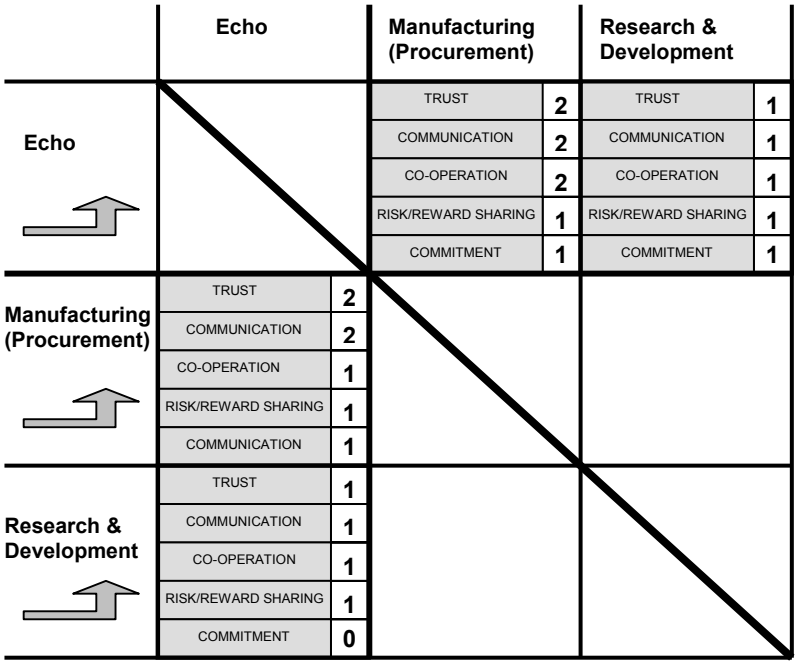

Figure 53. Relationship component scores of the Echo – Pegasus business area relationship

Note that each relationship component presented is a compilation of the relationships between the Echo and Pegasus (Manufacturing (Procurement) and Research & Development) representatives involved, given their role in the Pegasus sourcing organisation on the one hand, and their actual involvement in this inter-organisational strategic sourcing relationship on the other.

10.3 Inter-functional relationships

The inter-functional relationships in epsilon sourcing between Manufacturing (Procurement), Research & Development and Service (Purchasing) are analysed in the following, in the context of the relationship assessment model.

10.3.1 Manufacturing (Procurement) – Research & Development

10.3.1.1 Trust

In the opinion of both the Manufacturing (Procurement) Factory C Component Manager and the Factory B Section Manager, trust was present in the relationship between Research & Development (i.e. the Factory A Component Expert) and Manufacturing (Procurement) concerning epsilon sourcing.

Verbal agreements were honoured in day-to-day interaction, although e-mail and paper were considered to be the most convenient means of communication. However, the problems experienced with Echo as a new supplier to Factory A may have had their effect on the relationship between the Manufacturing (Procurement) Factory C Component Manager and the Factory A R&D Component Expert.

10.3.1.2 Communication

The Manufacturing (Procurement) Factory B Section Manager communicated with the respective Factory A R&D Component Expert once or twice a month. This communication concerned issues relating to products manufactured in Factories A and B. The information received was considered to be of excellent quality in technical terms, but it had to be asked for, and it would have been useful to have had early warnings of upcoming product design changes. Information on strategic issues concerning suppliers and components would also have been appreciated. Otherwise, the information exchange was considered to be sufficient. The two parties met a few times a year during the Factory B Manufacturing (Procurement) Section Manager's visits to Factory A, although these visits very seldom specifically concerned epsilons.

Communication between the Manufacturing (Procurement) Factory C Component Manager and the Factory A Research & Development Component Expert took place approximately once a year. This limited information exchange concerned design changes and requests from either party. The Manufacturing (Procurement) Factory C Component Manager received some information from Factory C Research & Development, such as minutes of internal meetings, but no such information was received from Factory A Research & Development. Information on epsilon design and development would have been very much appreciated, as would strategic information concerning suppliers and sourcing activities in general. Similar comments were also received from Research & Development in Factory A with respect to decision-making on supplier- and component-related issues in Factory C Manufacturing (Procurement). The Factory C Manufacturing (Procurement) Component Manager and the Factory A R&D Component Expert had only met once. Locally in Factory C, the Research & Development representative and the Manufacturing (Procurement) Component Manager had face-to-face meetings once or twice a year.

Figure 54 below illustrates the lines of communication and co-operation between the Manufacturing (Procurement) and Research & Development representatives in inter-functional epsilon sourcing.

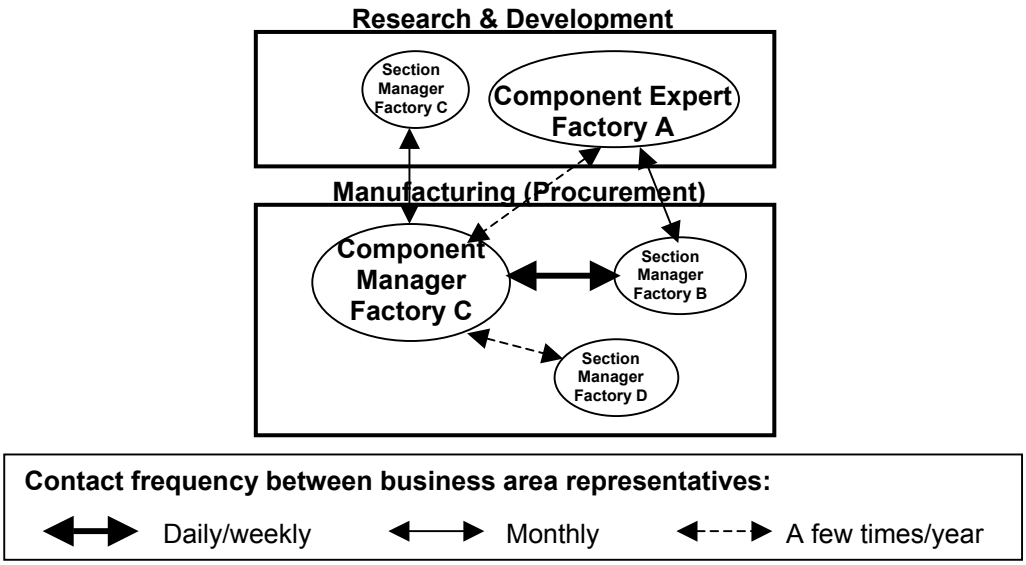

Figure 54. Manufacturing (Procurement) and Research & Development representatives and their inter-functional relationships in epsilon sourcing

10.3.1.3 Co-operation

The decision-making concerning supplier-related issues at Pegasus was headed by Manufacturing (Procurement). For example, the respective epsilon designer at Pegasus Research & Development had never seen any component action plan or summary report compiled by the Manufacturing (Procurement) Component Manager. According to the Factory B Manufacturing (Procurement) Section Manager, the new supplier search started with Manufacturing (Procurement) pre-selecting a set of possible suppliers for further investigation, but the final decision was made in co-operation with Research & Development. The Factory C Manufacturing (Procurement) Component Manager gave similar comments.

The Factory A R&D Component Expert found it difficult to co-operate with Factory C Manufacturing (Procurement). This was very apparent in the case of Echo. However, the Factory C Manufacturing (Procurement) Component Manager did not have similar experiences, and found the Factory A R&D Component Expert to be better aware of the costs related to epsilon designs than the local Factory C Research & Development representatives.

There had been some problems in the co-operation between Manufacturing (Procurement) and Research & Development, especially on the subject of new supplier selection. The Echo supplier relationship was established by Pegasus Factory C Manufacturing (Procurement) personnel. According to the Pegasus R&D Factory A Component Expert, this supplier was not on the approved list, and Pegasus Research & Development should have been involved in the decision-making right at the beginning of the relationship. According to the

Manufacturing (Procurement) Factory C Component Manager, Echo was on the list of approved suppliers in Factory C. The Factory B Manufacturing (Procurement) personnel felt that this problem with Echo was for the most part political, involving Factory A and Factory C representatives.

The Manufacturing (Procurement) Process Development Experts were also involved in sourcing activities, but the process-development goals were unclear, at least to the Factory A R&D Component Expert. From the perspective of Research & Development, it seemed as if process development was going on everywhere, but without clear goal setting. There was no joint strategy or goal setting between Manufacturing (Procurement) and Research & Development, and this was especially apparent in the Echo case.

10.3.1.4 Risk/reward sharing

The costs accumulated in sourcing activities were allocated to the respective business area in the form of labour and associated costs, for example. Traditionally, all direct purchasing costs for test/prototype parts had been allocated to Research & Development, and the respective Manufacturing Business Area product factory paid for production parts. Otherwise, the risks and rewards were shared in the traditional manner, according to which the majority of projects carried out to improve supplier processes and performance are the individual responsibility of each business area.

All in all, the Echo case clearly illustrates the difference in objectives and performance metrics of the two business areas. Research & Development was clearly concerned about the quality and reliability of Echo's epsilons as warranty cost was one of their key concerns, but. their representatives did not put equal emphasis on e.g. purchase-price development. The performance of Manufacturing (Procurement), on the other hand, was measured in terms of direct purchase-price development without equal concern for long-term operating reliability.

10.3.1.5 Commitment

The primary parties involved in inter-functional sourcing operations were the Research & Development Component Expert, the Factory C Manufacturing (Procurement) Component Manager and the Factory B Section Manager, all of whom appeared to be committed to co-operative sourcing activities. However, the problems associated with the Echo relationship could have indicated that the Factory A R&D Component Expert was more concerned with Factory A

and B issues and R&D, and that he was not genuinely committed to taking into account the views of the Manufacturing (Procurement) Factory C Component Manager. Direct executive or managerial involvement in the actual strategic sourcing activities was limited to comments and suggestions regarding Pegasus products.

10.3.2 Manufacturing (Procurement) – Service (Purchasing)

10.3.2.1 Trust

Service (Purchasing) did not have its own Section Manager for Pegasus-type epsilons, mainly because of the low volume of spare-parts purchasing. Consequently, the Manufacturing (Procurement) Factory C Component Manager handled all service strategic purchasing for Pegasus-type epsilons. Service (Purchasing) had a Section Manager in Factory E who was responsible for Medusa-brand epsilon spare-parts purchasing, with whom the Manufacturing (Procurement) Factory C Component Manager had never had any trust-related problems. Lack of trust was not considered to be a problem in the relationship between the two business areas.

10.3.2.2 Communication

The Factory E Service (Purchasing) representative and the Manufacturing (Procurement) Component Manager communicated two or three times a year about strategic sourcing issues. It is worth remembering that Factory E Service (Purchasing) had its own suppliers for some Medusa-brand products, and in principle Pegasus epsilon suppliers were not capable of producing Medusa epsilons cost efficiently, and vice versa. Nevertheless, the Factory E Service (Purchasing) Section Manager would have appreciated more information on sourcing activities, and reports on what was happening with respect to the suppliers. The Factory D Section Manager was in frequent contact with the Factory E Section Manager in early 1999 in respect of the merging of the two procurement departments.

The Manufacturing (Procurement) Factory C Component Manager communicated with the Service (Purchasing) operative purchaser in Factory B about once a year in relation to the annual contract negotiations with suppliers. He was also in touch with the Manufacturing (Procurement) Component Manager and the local Service (Purchasing) representative in Factory C. All parties involved were satisfied with the level of information exchange at that

time. The Factory C Manufacturing (Procurement) Component Manager had face-to-face meetings with the Factory B and Factory E Service (Purchasing) operative purchasers approximately once a year.

Figure 55 below illustrates the lines of inter-functional communication and co-operation between the Manufacturing (Procurement) and Service (Purchasing) representatives in epsilon sourcing.

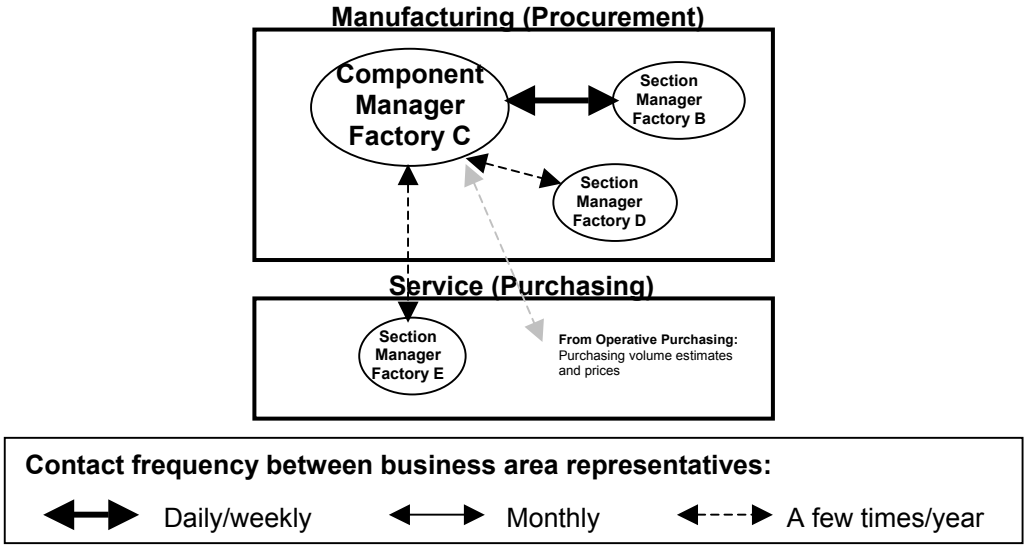

Figure 55. Manufacturing (Procurement) and Service (Purchasing) representatives and their inter-functional relationships in epsilon sourcing

10.3.2.3 Co-operation

All in all, co-operation between Service (Purchasing) and Manufacturing (Procurement) was limited to communicating estimates of purchasing volumes to the Manufacturing (Procurement) Component Manager, who was supposed to take into account the needs and requirements of Service (Purchasing) as part of his job. However, there was no joint strategy formation or goal setting between the two business areas. At the time of the data collection, the co-operation between the Factory D Manufacturing (Procurement) Section Manager and the Factory E Service (Purchasing) representatives was limited due to the lack of strategic action at the executive level of sourcing with respect to suppliers and Medusa product licensees.

According to the Factory C Manufacturing (Procurement) Component Manager, there had been some problems involving himself and the Factory E Service (Purchasing) Section Manager, who appeared to be under the impression that he was the Component Manager for Medusa-brand epsilons. The Epsilon purchasing volume for Medusa-brand products was very low. The Factory E Section Manager allegedly attempted to transfer purchase volume

from other suppliers to Medusa epsilon suppliers in order to improve his position in the negotiations with Factory E suppliers. It was not possible to address this accusation directly during the interview with the Factory E epsilon Section Manager, but he made it clear that the Factory C Component Manager was responsible for both Medusa and Pegasus type epsilons. It was also mentioned by both suppliers and the Pegasus Factory E Section Manager that the epsilon suppliers primarily specialised in either Medusa or Pegasus epsilons, thus making it difficult to transfer volume from one supplier to another.

10.3.2.4 Risk/reward sharing

Both Service (Purchasing) and Manufacturing (Procurement) shared a common goal in strategic sourcing, as both parties aspired to reach as low a direct purchase price as possible for service and production parts respectively. Manufacturing (Procurement) were responsible for strategic sourcing, and its performance was measured on the aggregate group level and not only on direct purchase-price developments. However, production and service needs differed in relation to production lead time, for example. In principle, Manufacturing (Procurement) was looking for a steady flow of products from the supplier, whose production was based on demand estimates and forecasts. Service (Purchasing), on the other hand, preferred flexible manufacturers that could supply the parts at very short notice to meet the requirements of Pegasus and its service customers. Risk and reward sharing were not considered to be a problem, even though it could have been argued that the Manufacturing (Procurement) Component Managers should have focused more on Manufacturing (Procurement) than on Service (Purchasing) needs.

10.3.2.5 Commitment

The primary party involved in epsilon sourcing was the Manufacturing (Procurement) Factory C Component Manager, who was in charge of Pegasus group-level sourcing, but the Factory E Service (Purchasing) Section Manager was also involved. Despite having a common purchased component, the Pegasus and Medusa type epsilons differed considerably in their supplier base and purchasing practices, for example. Both the Manufacturing (Procurement) and Service (Purchasing) representatives focused their efforts on their respective areas and were less concerned about the other party’s interests.

Direct top-management or managerial involvement from either business area was very limited in the inter-divisional procurement activities.

10.3.3 Research & Development – Service (Purchasing)

10.3.3.1 Trust

The Research & Development and Service (Purchasing) representatives were in very limited direct contact with each other. Most Service (Purchasing) issues on the strategic level were addressed by the Manufacturing (Procurement) Component Manager. Lack of trust was not considered to be a problem in the local relationships between the Research & Development and Service (Purchasing) representatives locally in Factory E.

10.3.3.2 Communication

The Factory E Service (Purchasing) Section Manager and the Research & Development representative communicated with each other monthly on issues related to technical support and design change in Medusa-brand products. Pegasus products were not discussed. According to the Service (Purchasing) representative, communication was primarily related to problem situations and subsequent problem-solving efforts. He would have appreciated an opportunity to participate earlier in the design and sourcing activities. It happened too often that, without prior notice, the finished component drawing was given to the purchasing personnel with instructions to make a purchase. Despite this limited direct involvement in the design process, some reports and minutes of meetings were sent locally from Research & Development to Service (Purchasing) in Factory E.

Figure 56 below illustrates the lines of communication and co-operation between the Research & Development and Service (Purchasing) representatives in inter-functional epsilon sourcing.

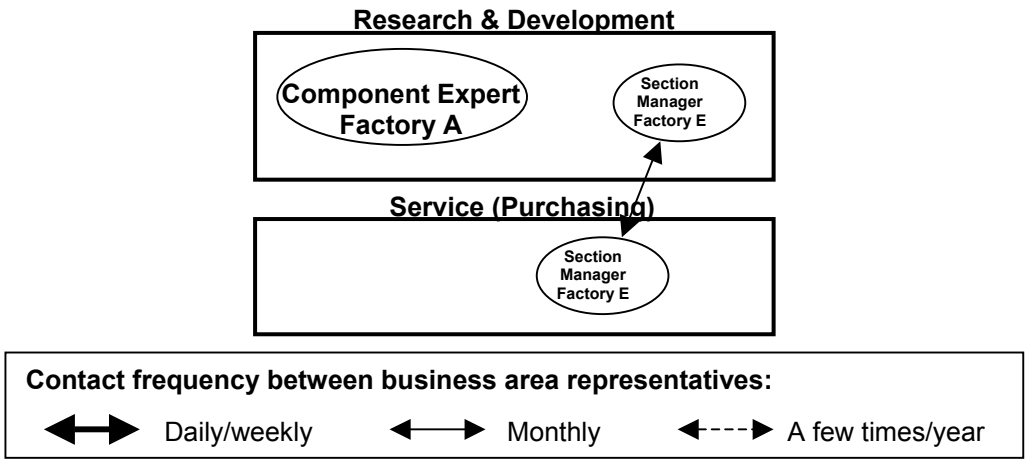

Figure 56. Research & Development and Service (Purchasing) representatives and their inter-functional relationships in epsilon sourcing

10.3.3.3 Co-operation

Co-operation in sourcing between Research & Development and Service (Purchasing) was very limited. All Service enquiries concerning Pegasus-type epsilons were addressed by the Manufacturing (Procurement) Component Manager. Interaction and co-operation in the Medusa licensing and service business was limited to problem-solving efforts with respect to designs and suppliers.

10.3.3.4 Risk/reward sharing

The costs accumulated in sourcing activities were allocated to the respective business area in the form of labour and related costs, e.g., travelling. Traditionally, all direct purchasing costs for test and prototype equipment were allocated to Research & Development. Production parts were paid for by the respective Manufacturing Business Area product factory and Service (Purchasing) unit. Otherwise, the risks and rewards were shared in the traditional manner, according to which the majority of projects carried out to improve supplier processes and performance were the individual responsibility of each business area.

10.3.3.5 Commitment

The primary party involved in epsilon sourcing from Research & Development was the Factory A R&D Component Expert, who was not

directly included in the inter-divisional co-operative sourcing activities involving Research & Development and Service (Purchasing). The local Research & Development and Service (Purchasing) representatives in Factory E were working together on Medusa sourcing, but this co-operation was more reactive and related to problem solving than forward looking. Direct executive or managerial involvement in sourcing activities was limited to comments and suggestions with respect to both Pegasus and Medusa products.

10.3.3.6 Relationship component scores

Figure 57 below illustrates the relationship component scores of the relationship between Manufacturing (Procurement), Research & Development and Service (Purchasing) in epsilon sourcing. The key parties involved were the Factory C Component Manager and the Factory B Section Manager from Manufacturing (Procurement), and the Factory A Component Expert from Research & Development. On the strategic level, Service (Purchasing) was represented by the Factory E Section Manager, who was only concerned with Medusa-type epsilons. Pegasus-type epsilons were not represented on the strategic level in Service (Purchasing).

	Manufacturing (Procurement)		Research & Development		Service (Purchasing)	
Manufacturing (Procurement) ⇧			TRUST	2	TRUST	2
			COMMUNICATION	1	COMMUNICATION	1
			CO-OPERATION	1	CO-OPERATION	1
			RISK/REWARD SHARING	1	RISK/REWARD SHARING	1
			COMMITMENT	2	COMMITMENT	1
Research & Development ⇧	TRUST	2			TRUST	2
	COMMUNICATION	1			COMMUNICATION	1
	CO-OPERATION	2			CO-OPERATION	1
	RISK/REWARD SHARING	1			RISK/REWARD SHARING	1
	COMMITMENT	1			COMMITMENT	1
Service (Purchasing) ⇧	TRUST	2	TRUST	2		
	COMMUNICATION	2	COMMUNICATION	1		
	CO-OPERATION	1	CO-OPERATION	1		
	RISK/REWARD SHARING	1	RISK/REWARD SHARING	1		
	COMMITMENT	1	COMMITMENT	1		

Figure 57. Relationship component scores of inter-functional relationships in epsilon sourcing

Note that each relationship component presented is a compilation of the personal relationships between the Manufacturing (Procurement), Research &

Development and Service (Purchasing) representatives involved in inter-functional sourcing activities, given their role in the Pegasus sourcing organisation on the one hand, and their actual involvement in these activities on the other.

10.4 Manufacturing (Procurement) – Intra-functional relationships

10.4.1 Trust

Lack of trust was not a serious concern in the internal relations within the Manufacturing (Procurement) organisation. The Manufacturing (Procurement) Component Manager had never experienced any trust-related problems with the Factory B Section Manager, although there had been some problems between the Manufacturing (Procurement) Factory C Component Manager and the Factory D Section Manager. According to the Factory C Component Manager, actions agreed with the Section Manager were sometimes not executed according to the agreement. He also referred to problems in the implementation process regarding some decision in Factory D, saying that he expected consultation requests and not independent action that was often only in the interests of Factory D. The Factory C Manufacturing (Procurement) Component Manager suggested and suspected that this kind of behaviour was intentional. This accusation could not be verified or contradicted in discussions with the Factory D Section Manager.

10.4.2 Communication

The Manufacturing (Procurement) Component Manager in Factory C was in contact with the Factory B Section Manager on a weekly basis by telephone, fax and e-mail. The information exchange with the Factory B Section Manager focused on strategic issues, and both parties were very satisfied with the level and quality of this communication. The Factory B and Factory C representatives met five to six times a year.

The weekly information exchange with the Factory D Section Manager was more on the day-to-day problem-solving level than strategic, and according to the Factory C Component Manager, there was still room for considerable improvement in respect of information quality, quantity and timeliness. Information had to be specifically asked for, and when it arrived – often late – it was also often incomplete, which in turn led to additional requests that again took time. The two parties met approximately four times a year. The Factory D

Section Manager, in turn, received little information from the Factory C Component Manager, but he did not consider this to be a problem.

Figure 58 below illustrates the lines of intra-functional communication and co-operation between the Manufacturing (Procurement) representatives in epsilon procurement.

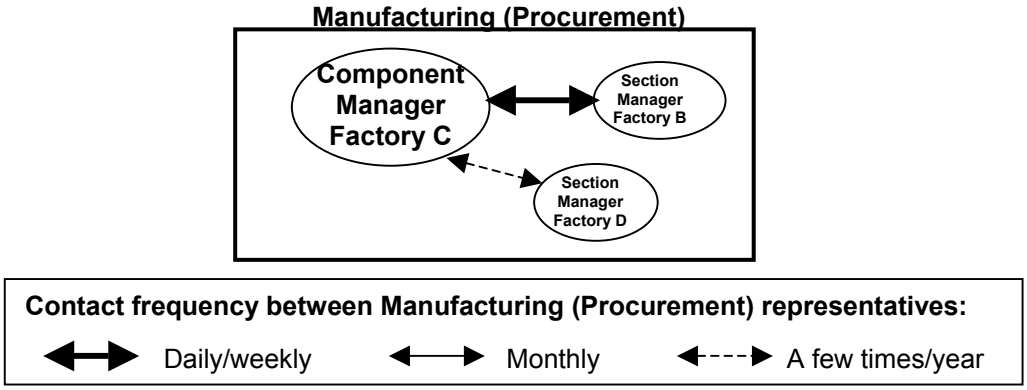

Figure 58. Manufacturing (Procurement) representatives and their inter-relationships in epsilon procurement

10.4.3 Co-operation

The Factory B Section Manager and the Factory C Component Manager worked in close co-operation in strategic sourcing. Both parties kept each other informed about developments with suppliers and sourcing in general, and both felt that the co-operation was working well.

Factory D participation in corporate-wide procurement co-operation was limited in that, by March 1999, it had only manufactured one single Pegasus product, and the volume was expected to be low in the near future. The procurement responsibility for epsilons was with Factory C at that time.

The Factory C Component Manager and the Factory D Section Manager had not participated in the MEP-projects headed by the Process Development personnel in the Pegasus Factory A procurement department. The Process Development Experts were stationed in Factory A, and there were no resources available in other factories, although one person from supplier development in the Factory D organisation was available.

10.4.4 Risk/reward sharing

Success and failure in strategic procurement were, in principle, equally divided between each participating product factory. The costs incurred in the work of each Manufacturing (Procurement) representative were allocated to the respective product factory. Nevertheless, it could be argued that the Component Manager's efforts and possible rewards or risk on the group level were shared equally only in principle, as all the costs associated with development and strategic procurement activities were allocated to the component manager's product factory. It is also worth mentioning that each product factory was represented in the component manager's organisation (as were the costs associated with his work) in proportion to their share of the total Pegasus purchasing volume.

The metrics for supplier performance were different in each product factory. Reporting on them to the sourcing executives and other managers in Pegasus was sometimes considered to be difficult and time consuming. Information had to be adapted to suit the requested format, even though the same information was already available in a marginally different format. The need was expressed for clear group-level specifications on supplier-delivery accuracy, quality and price level.

10.4.5 Commitment

The parties involved in strategic procurement were the Manufacturing (Procurement) Factory C Component Manager and the Manufacturing (Procurement) Section Managers from Factories B and D. The Factory B Section Manager appeared to be committed to group-level procurement activities, and he actively supported the work of the Component Manager. The Factory D Section Manager, on the other hand, appeared to focus his attention more on the interests of Factory D than on group-level procurement.

Top-level involvement in epsilon procurement consisted mostly of feedback and ideas from the sourcing group executive and managers, but there was very little direct involvement in the actual procurement work.

10.4.6 Relationship component scores

Figure 59 below shows the components of the relationship between the key Manufacturing (Procurement) representatives involved in epsilon procurement.

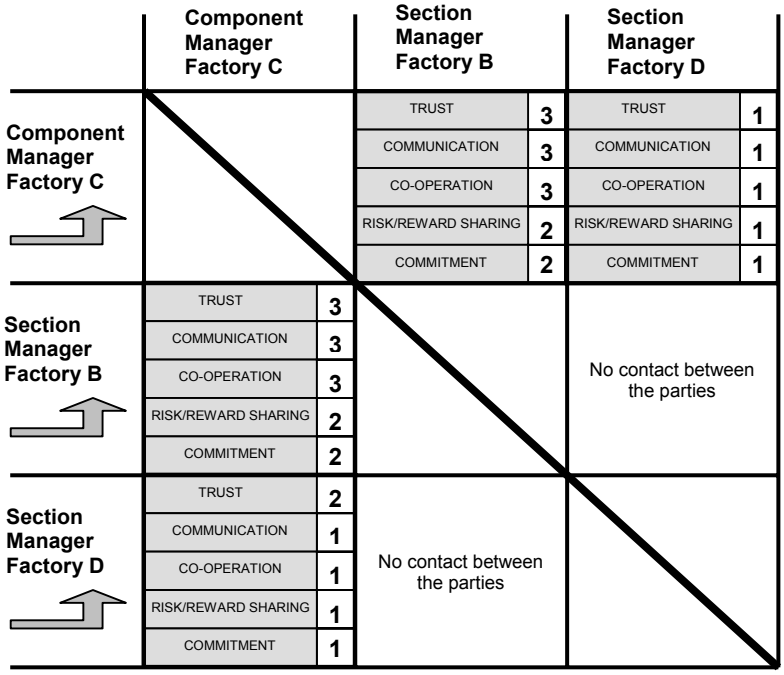

Figure 59. Relationship component scores of the intra-manufacturing (Procurement) relationships in epsilon procurement

The key individuals involved in the intra-functional relationships in Manufacturing (Procurement) were the Factory C Component Manager, the Factory B Section Manager and the Factory D Section Manager.

11 BUYER–SUPPLIER RELATIONSHIPS

The research data presented in the previous chapters is briefly summarised in the following, and the characteristics of both "high performing" and "low performing" buyer-supplier relationships are compared. Three years have passed since the relationship data was collected, and the final section of this chapter presents the current situation (in August 2002) with respect to Pegasus and each supplier relationship.

11.1 "High performing" relationships

Ten buyer-supplier relationships were originally under investigation (Seppälä 2001), but only from the inter-organisational perspective. It was on the basis of this previous study that these original relationships were ranked, and as a result, two "high performing" and two "low performing" buyer-supplier relationships were selected for further investigation from the inter-organisational, inter-functional and intra-functional perspectives. Table 26 below describes the two high-performing buyer-supplier relationships in terms of the relationship score, the supplier's rank and the component it supplies to the various Pegasus locations.

Table 26. High-performing suppliers

Supplier	RELATIONSHIP SCORE (scale: 0-100)	Rank	Component	PRODUCT FACTORY					SERVICE
				A	B	C	D	E License support and Service	
BELLONA	77	6	Beta	X	X	X	X	X	X
DIONYSOS	63	14	Delta	X	-	-	-	-	-

The letter X marks a relation and a minus sign ('-') indicates no relation. The supplier's rank refers to its size as a supplier (as volume supplied to Pegasus in monetary value); rank #1 is the biggest.

The following sections summarise the two high-performing buyer-supplier relationships, and describes the key characteristics from all three relationship perspectives.

11.1.1 Bellona: Supply Chain relationships

Figure 60 illustrates the relevant lines of communication and co-operation between the different parties in strategic sourcing from inter-organisational, inter-functional and intra-functional perspectives.

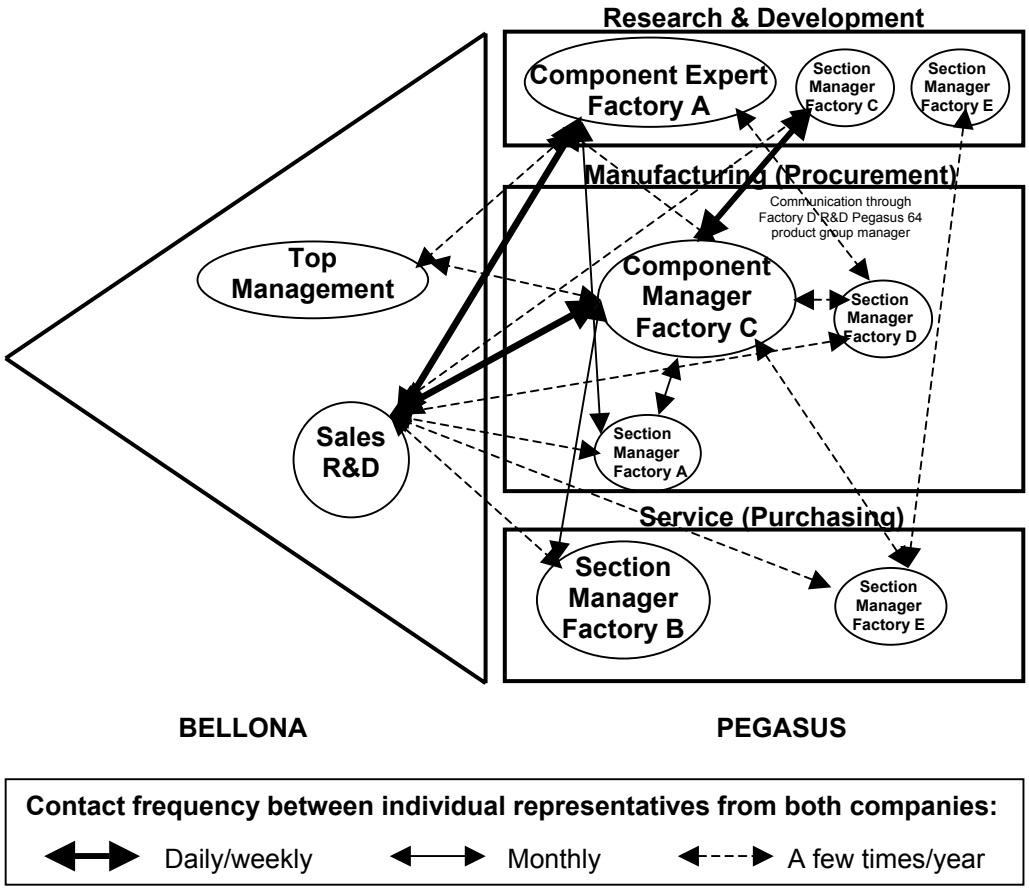

Figure 60. Relevant strategic sourcing relationships between different Pegasus business areas and Bellona representatives

The above figure shows that all three Pegasus business areas were relatively actively involved in maintaining the Bellona – Pegasus business relationship (inter-organisational perspective). There was also considerable interaction between the different Pegasus business areas (inter-functional perspective), and also within the Manufacturing (Procurement) function between different product factories (intra-functional perspective).

Figure 61 below illustrates the situation concerning each relationship component in the Bellona – Pegasus relationship. The parties involved included all participating Pegasus functional areas and Bellona. Note that each relationship component presented here is "an average" of individuals

participating in the inter-organisational and inter-functional relationships. The individual responses were grouped either on the supplier level or according to the Pegasus business area (i.e. function).

	Bellona		Manufacturing (Procurement)		Research & Development		Service (Purchasing)	
Bellona			TRUST	2	TRUST	2	TRUST	2
			COMMUNICATION	2	COMMUNICATION	2	COMMUNICATION	2
			CO-OPERATION	2	CO-OPERATION	2	CO-OPERATION	2
			RISK/REWARD SHARING	2	RISK/REWARD SHARING	1	RISK/REWARD SHARING	3
			COMMITMENT	2	COMMITMENT	2	COMMITMENT	3
Manufacturing (Procurement)	TRUST	2			TRUST	2	TRUST	1
	COMMUNICATION	3			COMMUNICATION	1	COMMUNICATION	2
	CO-OPERATION	2			CO-OPERATION	1	CO-OPERATION	1
	RISK/REWARD SHARING	2			RISK/REWARD SHARING	1	RISK/REWARD SHARING	1
	COMMITMENT	2			COMMITMENT	1	COMMITMENT	1
Research & Development	TRUST	2	TRUST	2			TRUST	1
	COMMUNICATION	2	COMMUNICATION	1			COMMUNICATION	1
	CO-OPERATION	2	CO-OPERATION	1			CO-OPERATION	1
	RISK/REWARD SHARING	1	RISK/REWARD SHARING	1			RISK/REWARD SHARING	1
	COMMITMENT	2	COMMITMENT	1			COMMITMENT	1
Service (Purchasing)	TRUST	2	TRUST	1	TRUST	1		
	COMMUNICATION	2	COMMUNICATION	2	COMMUNICATION	1		
	CO-OPERATION	2	CO-OPERATION	2	CO-OPERATION	1		
	RISK/REWARD SHARING	1	RISK/REWARD SHARING	1	RISK/REWARD SHARING	1		
	COMMITMENT	2	COMMITMENT	2	COMMITMENT	1		

Figure 61. Relationship component scores of the inter-organisational (Bellona) and inter-functional relationships in beta sourcing

Overall, the **inter-organisational relationship** between Pegasus and Bellona was working well. The area in which improvements were mostly called for was communication from Bellona. Co-operation between the two companies could also be improved to levels that might eventually even lead to joint strategy and goal setting. Bellona appeared highly committed to this relationship, and it would most likely result in overall benefits for both parties if Pegasus were to respond in a positive and co-operative manner. Nevertheless, overall communication appeared to work relatively well between the two parties, as all Pegasus business areas were involved and, despite the somewhat sluggish communication from Bellona, information was exchanged relatively efficiently and in sufficient frequency on a continuous basis.

Apparently, on the local Pegasus factory level, the **inter-functional relationships** appeared to be relatively developed and trusting. However, when these relationships spanned product-factory boundaries, they were much

less developed and less trusting. All in all, each business area representative seemed to prefer co-operation and communication across functional borders to be primarily on the local level. At first sight, this appeared to have been especially problematic in the case of the R&D Component Expert and the Manufacturing (Procurement) Component Manager, who were the key representatives of their respective business areas in inter-functional sourcing activities. Consequently, co-operation was limited and there was no joint strategy or goal setting. Service (Purchasing) representatives also argued that their needs were not taken into account sufficiently in the Component Manager's work. It must also be noted that Service (Purchasing) and Research & Development engaged in primarily operative-level contacts. In fact, the Service (Purchasing) Section Manager was not in contact with Research & Development. None of the business areas involved appeared very highly committed to Pegasus group-level sourcing activities, and preferred local-level co-operation instead. There was no joint risk and reward sharing between the business areas.

The intra-functional perspective was also under investigation in the context of Manufacturing (Procurement). Figure 62 below illustrates the relationship-component scores of the relationship between the key Manufacturing (Procurement) representatives involved in beta procurement: the Factory C Component Manager, the Factory A Section Manager and the Factory D Section Manager. The individual respondents have not been grouped here.

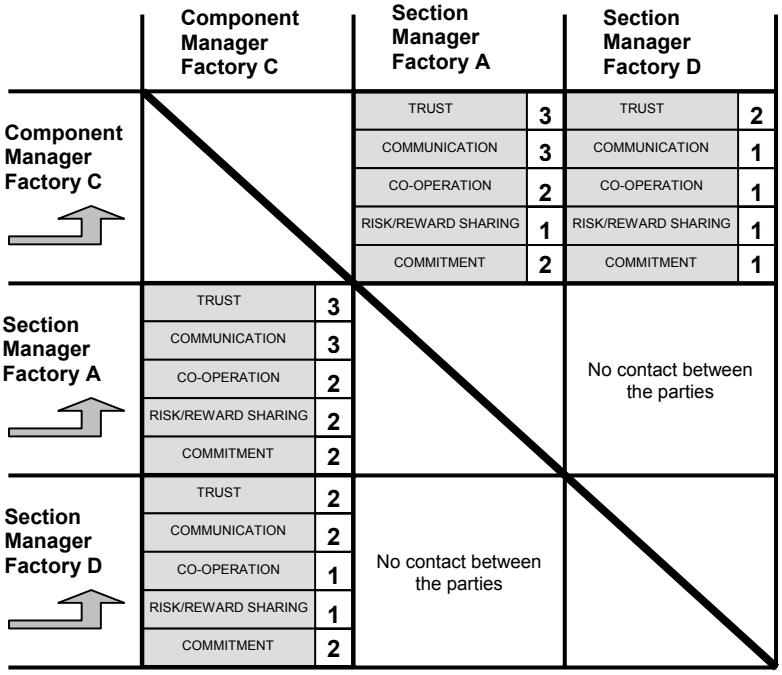

Figure 62. Relationship component scores of the intra-Manufacturing (Procurement) relationships in beta procurement

Intra-functional relationships in Manufacturing (Procurement) were working relatively well, but local-level interaction appeared to be preferred to interaction on the Pegasus group-level in the majority of cases. In the Manufacturing (Procurement) organisation, the Factory C Component Manager was the party responsible for Pegasus group-level procurement of beta components for both Pegasus and Medusa products. As is evident from the figure above, each Manufacturing (Procurement) Section Manager was involved in discussing the beta procurement requirements of their respective product factory with the Component Manager, who then co-ordinated strategic procurement activities in the whole Manufacturing Business Area (and Service (Purchasing) as well. It may well be that, because of this relatively well-functioning communication between the different Manufacturing (Procurement) representatives (intra-functional perspective), the lack of communication in inter-functional terms was not considered problematic and did not result in problems elsewhere, e.g., in inter-organisational relationships.

One of the motivating elements behind this study was the concept of supply chain management, and especially the relational element in supply chains, so far focusing mainly on transactions. Figure 63 below presents the Bellona – Pegasus buyer-supplier relationship as a supply chain from inter-organisational and inter-functional perspectives.

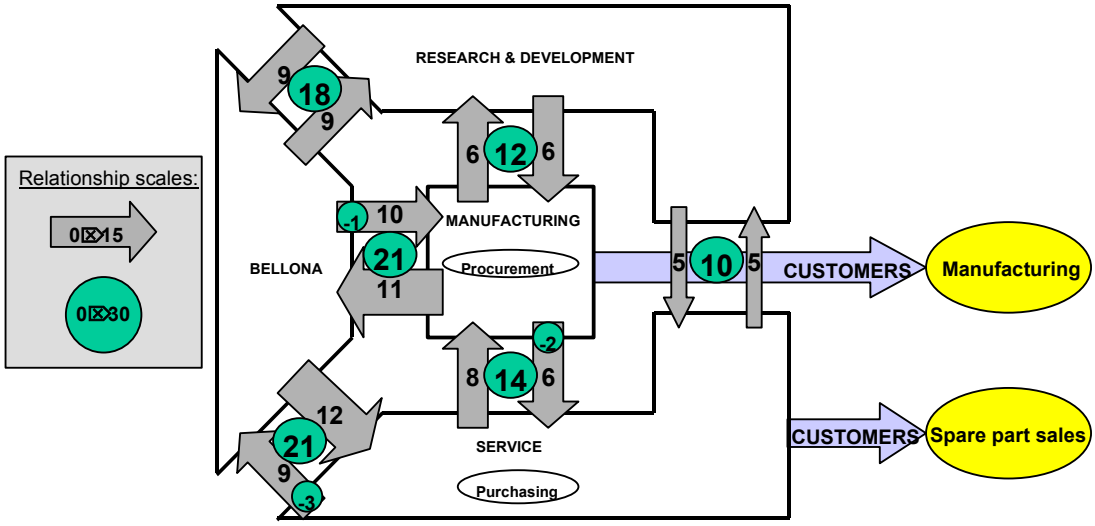

Figure 63. Pegasus – Bellona relationships in a supply chain context

In principle, the greater the relationship score of both parties, the closer the relationship. When applicable, the relationship balance is also to be seen in the smaller circle at the beginning of the arrow. It seems as if Bellona with its very centralised approach to relationship management and its system of account managers (i.e. technical sales person) managed to maintain a better relationship with the different Pegasus business areas than Pegasus did

internally in the inter-functional context. It might also have been the case that Bellona was more knowledgeable about its position in sourcing than the Pegasus representatives themselves. Except for the Pegasus – Service (Purchasing) interaction, the inter-organisational relationship was more or less in balance.

The fact that the intra-functional relationships in Manufacturing (Procurement) worked relatively well internally helped in coping with the lack of communication in the inter-functional relationships, especially between Manufacturing (Procurement) and Research & Development. There was also a balance difference between Service (Purchasing) and Manufacturing (Procurement), which was perhaps somehow related to the gap in relationship assessment values between Bellona and Service (Purchasing).

11.1.2 Dionysos – Supply Chain relationships

Figure 64 illustrates the relevant lines of communication and co-operation between the different parties in strategic sourcing from the inter-organisational, inter-functional and intra-functional perspectives.

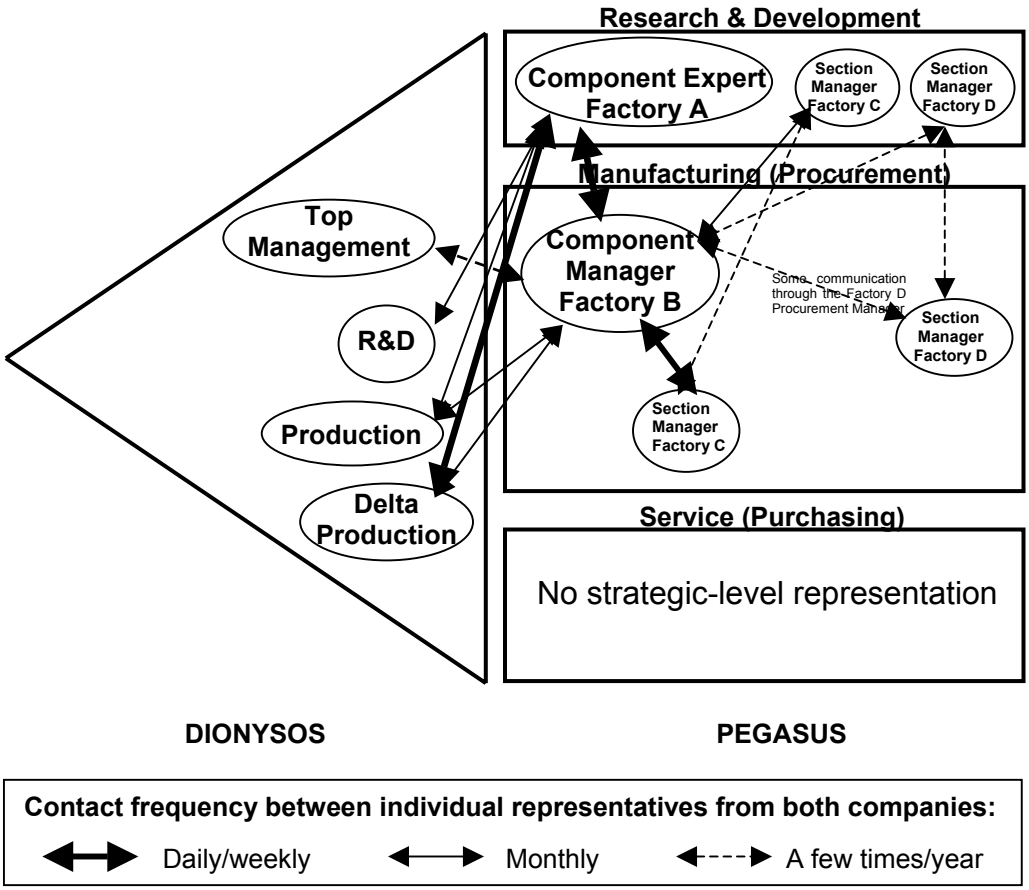

Figure 64. Relevant strategic sourcing relationships between different Pegasus business areas and Dionysos representatives

From Pegasus, Research & Development was the most active party in the Dionysos – Bellona relationship, as illustrated in Figure 64 above. Manufacturing (Procurement) was also involved, but Service (Purchasing) did not take part directly. The Manufacturing (Procurement) Component Manager was also responsible for strategic purchasing that concerned the Service business area.

Figure 65 below illustrates the situation concerning each component in the Dionysos – Pegasus relationship. From Pegasus, only Manufacturing (Procurement) and Research & Development were directly involved in these inter-organisational and inter-functional relationships. Note that each component presented here is "an average" of individuals participating in the inter-organisational and inter-functional relationships. The individual responses have been grouped at the level of the supplier or the Pegasus business area (i.e. function).

	Dionysos	**Manufacturing (Procurement)**	**Research & Development**	**Service (Purchasing)**
Dionysos		TRUST 2 COMMUNICATION 3 CO-OPERATION 2 RISK/REWARD SHARING 1 COMMITMENT 2	TRUST 2 COMMUNICATION 2 CO-OPERATION 1 RISK/REWARD SHARING 1 COMMITMENT 2	No strategic-level relationship between the parties. On the strategic level, Service (Purchasing) is represented by Manufacturing (Procurement).
Manufacturing (Procurement)	TRUST 2 COMMUNICATION 2 CO-OPERATION 2 RISK/REWARD SHARING 2 COMMUNICATION 2		TRUST 2 COMMUNICATION 2 CO-OPERATION 2 RISK/REWARD SHARING 1 COMMITMENT 2	Operative-level contacts only.
Research & Development	TRUST 2 COMMUNICATION 2 CO-OPERATION 2 RISK/REWARD SHARING 1 COMMITMENT 2	TRUST 2 COMMUNICATION 2 CO-OPERATION 2 RISK/REWARD SHARING 1 COMMITMENT 2		Operative-level contacts only.
Service (Purchasing)	No strategic-level relationship between the parties. On the strategic level, Service (Purchasing) is represented by Manufacturing (Procurement).	Operative-level contacts only.	Operative-level contacts only.	

Figure 65. Relationship component scores of the inter-organisational (Dionysos) and inter-functional relationships in delta sourcing

The **inter-organisational relationship** between Dionysos and Pegasus worked relatively well. The focal area of development appeared to be in risk/reward sharing. The parties engaged in developed collaboration by jointly

initiating delta production. The relationship atmosphere was apparently very positive, and the project was set to result in mutual gains if Dionysos expanded its sales to other Pegasus production units and Pegasus exploited favourable cost development, for example. Efforts could thus also be made to develop a mutual strategy, establish ground rules and set clear goals.

The **inter-functional relationship** between the R&D Factory A Component Manager and the Manufacturing (Procurement) Factory B Component Manager involved trust in and commitment to joint sourcing operations. Communication was frequent and the two parties were relatively well aware of each other's sentiments towards suppliers and delta sourcing in general, despite the fact that the information was not very formalised. Locally in Factory C, the Research & Development and Manufacturing (Procurement) representatives were also in contact with each other, but in a much more limited fashion. Risk/reward sharing was not a major concern in these relationships in any of the business areas involved, and there was no formal mechanism in place. Service (Purchasing) was not directly involved on the strategic level, and was more focused on day-to-day issues in communicating its purchase-volume requirements and other information to the Component Manager.

Once again, the **intra-functional relationships** were studied in the context of Manufacturing (Procurement). Figure 66 below illustrates the relationship component scores of the relationships between the key Manufacturing (Procurement) representatives involved in delta procurement.

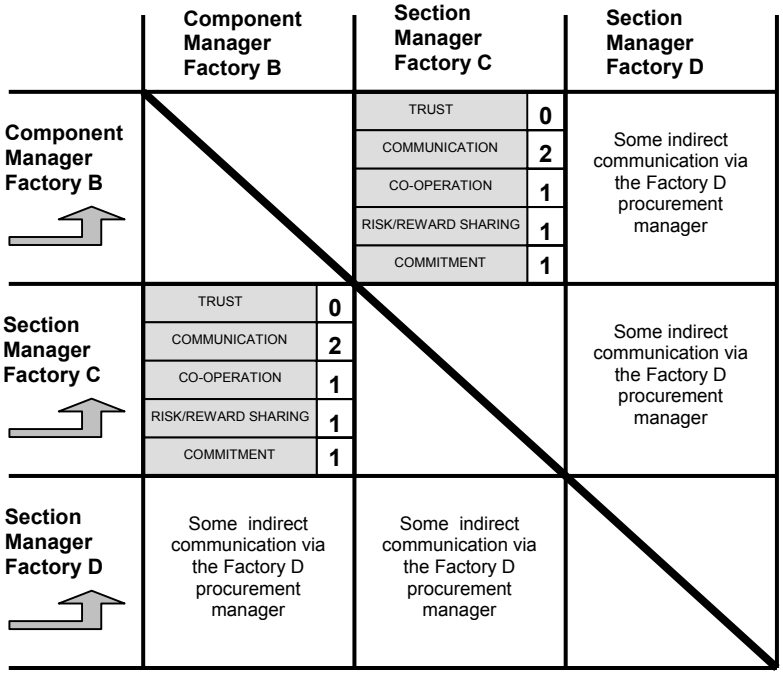

Figure 66. Relationship component scores of the intra-Manufacturing (Procurement) relationships in delta procurement

The key individuals involved were the Factory B Component Manager and the Factory C Section Manager. The Factory D Section Manager was not directly involved. The individual respondents are not grouped in the figure.

Factories A and B had been jointly co-ordinating their resources and activities in Manufacturing (Procurement) for years. In other words, the same person was responsible for section-manager duties in both, regardless of his or her physical location.

The Factory B Component Manager was responsible for all strategic procurement activities in the Manufacturing Business Area, and also in Service (Purchasing). The Factory C Section Manager was also actively involved, but apparently his commitment to joint procurement activities left room for improvement. This lack of both trust and commitment inevitably had an effect on the level of co-operation and trust between the parties, although they communicated relatively frequently. The Factory D Section Manager was only in contact with the Component Manager indirectly through the Factory D Procurement Manager.

Figure 67 below presents the Dionysos – Pegasus buyer-supplier relationship as a supply chain from the inter-organisational and inter-functional perspectives.

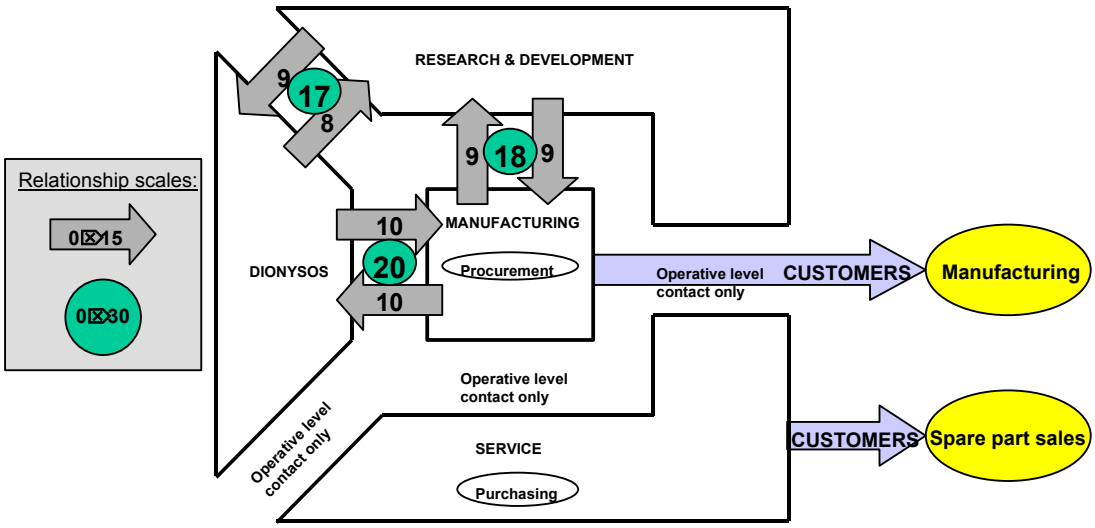

Figure 67. Pegasus – Dionysos relationships in a supply chain context

The inter-functional relationship between Manufacturing (Procurement) and Research & Development was working well. The two key individuals, the Manufacturing (Procurement) Component Manager and the R&D Component Expert, were in active contact with each other. The inter-organisational relationship was also working well.

However, the intra-functional relationships could hardly be considered satisfactory. The Factory B Component Manager and the Section Manager from Factory C "don't get along" professionally. Without good relations between Manufacturing (Procurement) in Factory B and Factory A Research & Development, this problem in Manufacturing (Procurement) was also liable to affect inter-organisational relationships, for example. Nevertheless, there were no differences in balance in perceptions of the dyadic relationship in any of the three perspectives.

11.2 "Low performing" relationships

The previous sub-section presented the two "high performing" buyer-supplier relationships from all three relationship perspectives. Table 27 below illustrates the two low-performing relationships in terms of the relationship score, the supplier's rank, and the component and Pegasus locations supplied.

Table 27. Low-performing suppliers

Supplier	RELATIONSHIP SCORE (scale: 0-100)	Rank	Component	PRODUCT FACTORY					SERVICE
				A	B	C	D	E License support and Service	
GEB	47	51	Gamma	X	X	X	X	-	X
ECHO	43	70	Epsilon	-	-	X	X	-	-

The letter X marks a relation and a minus sign ('-') indicates no relation. The supplier's rank refers to its size as a supplier (as volume supplied to Pegasus in monetary value); rank #1 is the biggest.

The following sub-sections summarise the two low-performing buyer-supplier relationships and describe their key characteristics from all three relationship perspectives.

11.2.1 Ge/Geb – Supply Chain relationships

Figure 68 illustrates the relevant lines of communication and co-operation between different parties in strategic sourcing between the Pegasus business areas and Ge/Geb.

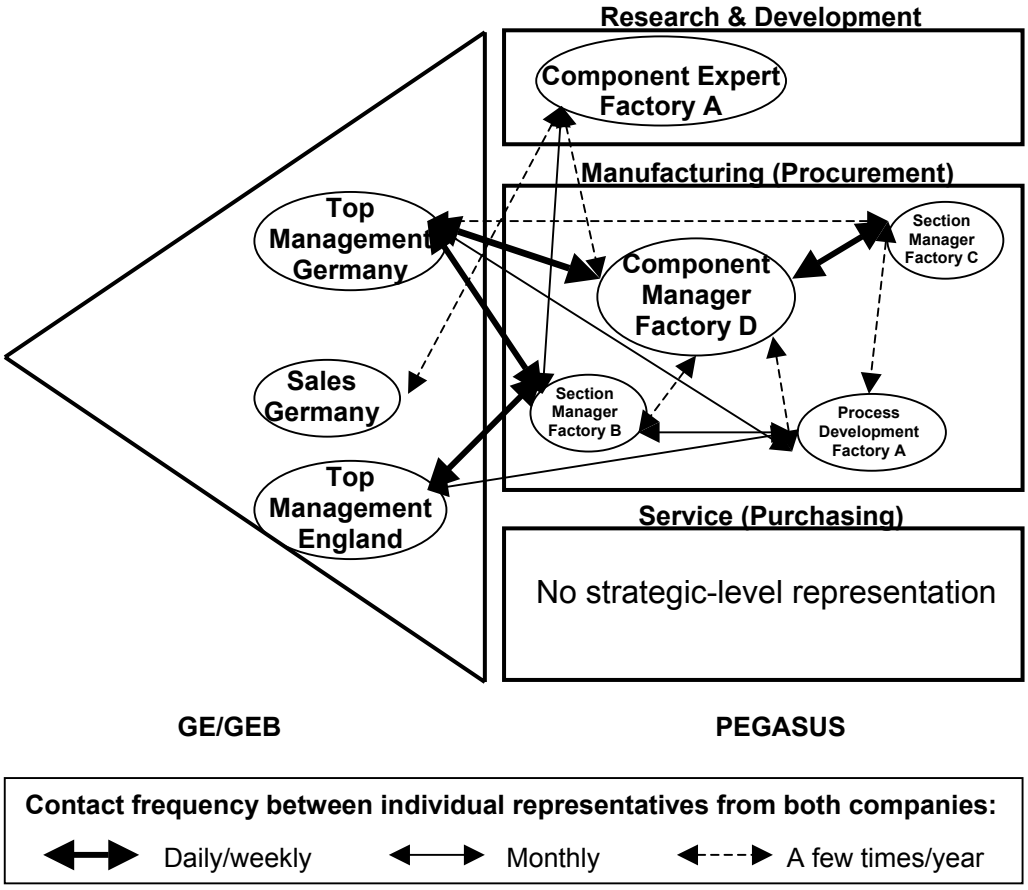

Figure 68. Relevant strategic sourcing relationships between different Pegasus business areas and Ge/Geb representatives

Figure 68 above shows the relevant lines of communication and interaction in the Ge/Geb – Pegasus buyer-supplier relationship from all three relationship perspectives. The most active party was Manufacturing (Procurement), with limited involvement from Research & Development. Service (Purchasing) was not represented on the strategic level, and thus was not directly involved. Internally in Manufacturing (Procurement), the most active party was the Section Manager from Factory B, although the Factory D Component Manager, the Section Manager from Factory C and the Factory A Process Development Expert were also involved. It is worth noting that the Factory D Component Manager should be the most active party co-ordinating this relationship.

Figure 69 below illustrates the situation concerning each relationship component in the Ge/Geb – Pegasus relationship. Note that the components presented here represent "an average" of individuals participating in the inter-organisational and inter-functional relationships. The individual responses are grouped at either the supplier level or at the Pegasus business area (i.e. function) level.

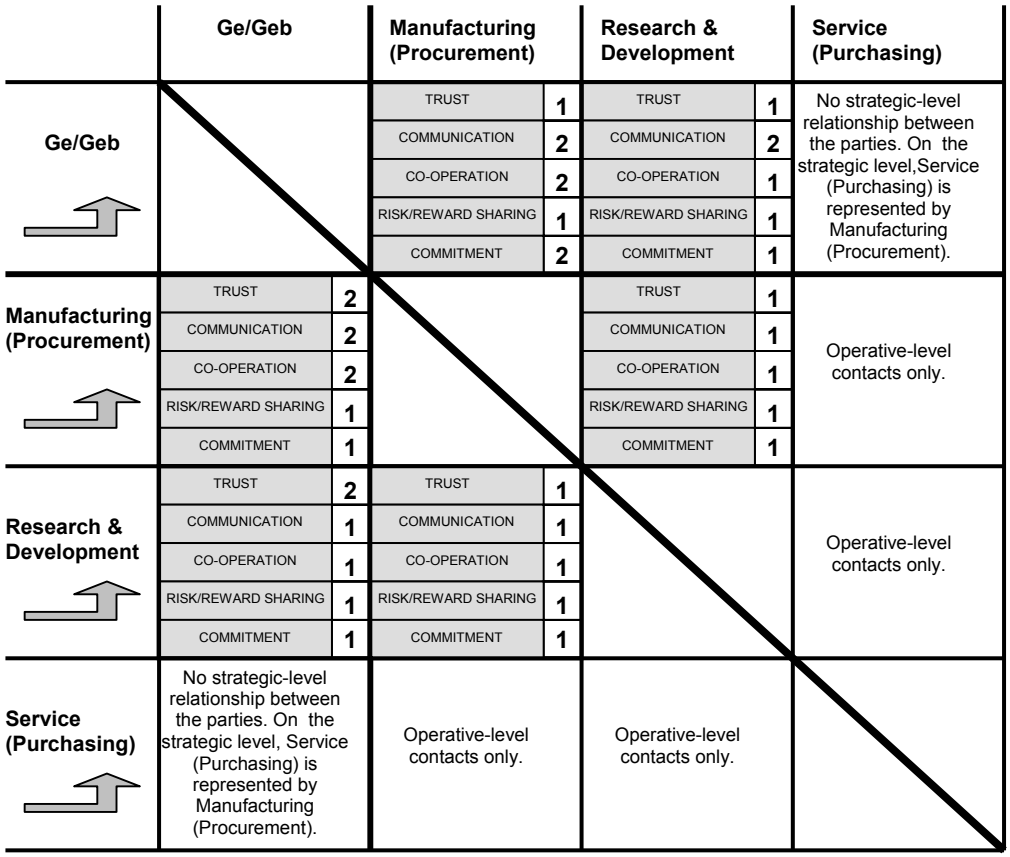

Figure 69. Relationship component scores of the inter-organisational (Ge/Geb) and inter-functional relationships in gamma sourcing

Overall, the **inter-organisational relationship** between Pegasus and Ge/Geb shows arm's-length characteristics in all of the relationship components. Pegasus does not appear to have had a strong desire (or need?) to develop it into a more collaborative type of relationship.

There was limited trust between the two partners, and communication was also relatively limited, apparently due to some internal problems at Pegasus. Co-operation only concerned the MEP-project and the associated transactions (i.e. buying and selling). Commitment, at least from the Pegasus side, also appears low: it had recently introduced a new supplier (Geryon) to its gamma-supplier portfolio. There were no formal risk/reward mechanisms or joint performance-measurement systems.

On the **inter-functional level,** the two active business areas in gamma sourcing operated independently of one another on the group level. The relationship between the key Research & Development and Manufacturing (Procurement) representatives was problematic, and this is also reflected in the relationship components. Despite some local contacts and activities, the overall level of inter-functional co-operation was poor. All in all, there was very little commitment to inter-functional sourcing activities from any

business area, and no established mechanisms for joint performance-measurement or risk/reward-sharing.

The **intra-functional relationships** were also investigated. Figure 70 below illustrates the relationship component scores of the relationships between the key Manufacturing (Procurement) representatives involved in gamma procurement: the Factory D Component Manager, the Factory B Section Manager, the Factory D Section Manager and the Factory A Process Development Expert.

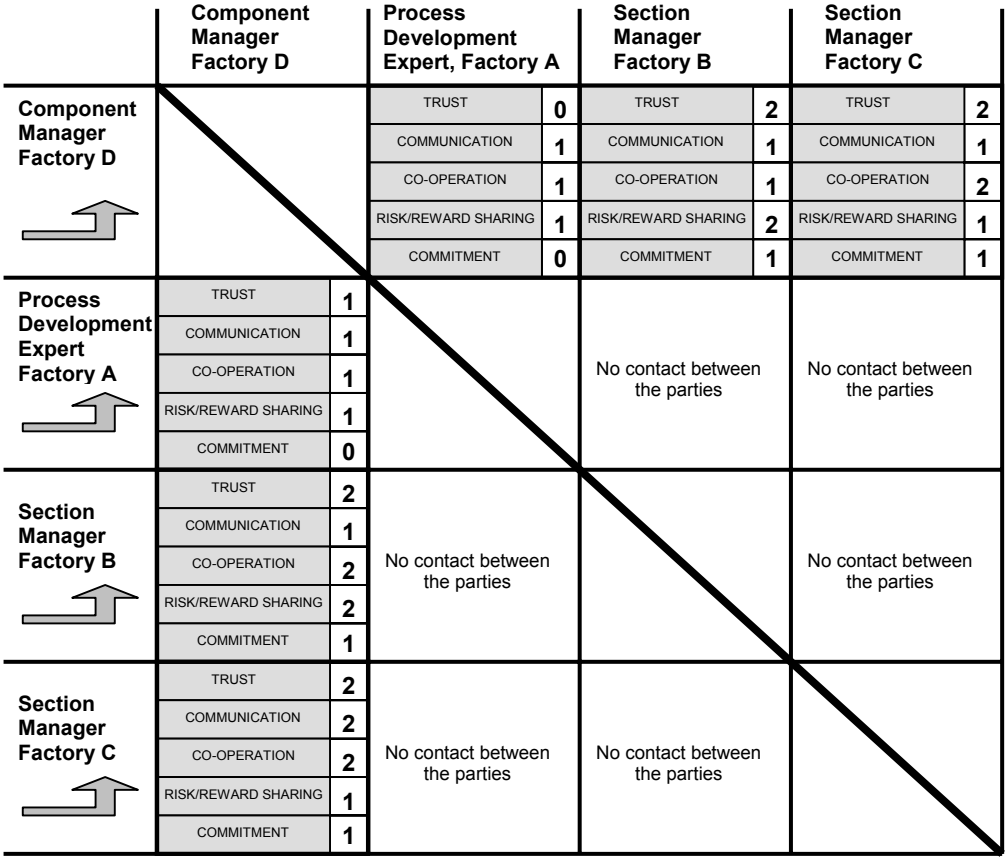

Figure 70. Relationship component scores of the intra-Manufacturing (Procurement) relationships in gamma procurement

The Component Manager organisation in Manufacturing (Procurement) was designed to centralise procurement co-ordination and decision-making authority to a single person working with a "team" of local experts in each product factory. This type of centralised organisation was intended to be useful in dealing with suppliers and other Pegasus business areas, for example. However, it was apparently not fully implemented in gamma procurement.

A number of other individuals in addition to the Component Manager were active in dealing with suppliers, co-ordinating procurement activities and managing supplier relationships. This type of behaviour clearly left its mark in

terms of trust between the parties, and this was especially apparent in the relationship between the Factory D Component Manager and the Factory A Process Development Expert.

Lack of communication was clearly a problem between the parties, and this in all probability also had an effect on trust. Co-operation was also relatively limited and more locally centred in Factories A and B rather than in a wider context: this would naturally fall within the responsibility of the Component Manager. Risk and reward sharing were not happening on the Pegasus group-level in Manufacturing (Procurement).

The Factory A and B representatives showed very little commitment to the Component Manager or to group-level procurement activities. This may partly be explained by the fact that both factories specialised in the manufacture of Pegasus brand products, whereas the Factory D portfolio mostly featured Medusa-type products.

Figure 71 below presents the Ge/Geb – Pegasus buyer-supplier relationship as a supply chain from the inter-organisational and inter-functional perspectives.

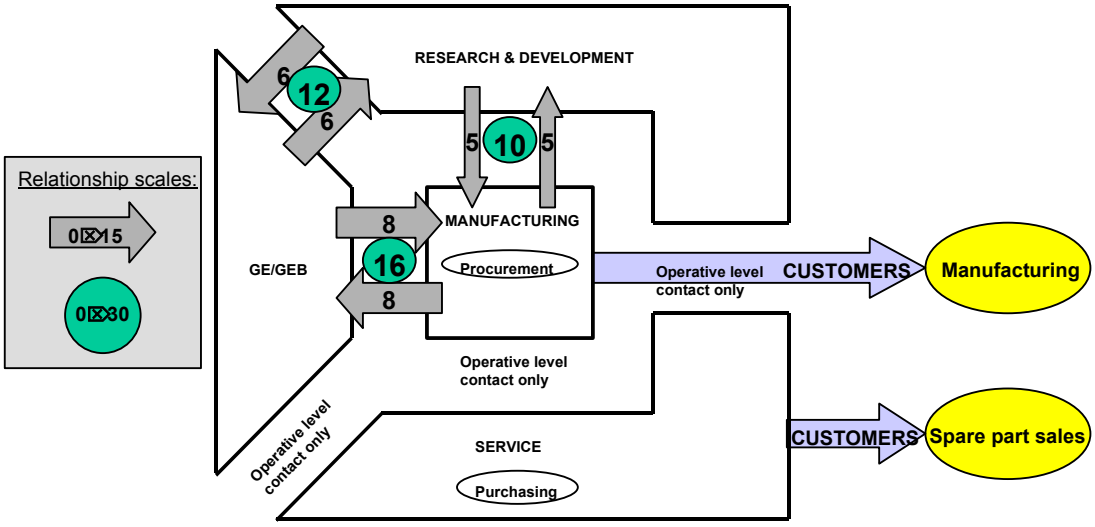

Figure 71. Pegasus – Ge/Geb relationships in a supply chain context

The intra-functional relationships in the Manufacturing (Procurement) organisation were on a poor level. Trust and commitment to co-operation between the product-factory representatives was limited (or non-existent), and communication was not working well either.

Evidently, this had some effect on the inter-functional relationships between Manufacturing (Procurement) and Research & Development. The situation concerning the inter-organisational relationship was not the best either, and had apparently deteriorated. Nevertheless, there were no differences in balance

between the dyadic-relationship perceptions in any of the three relationship perspectives.

11.2.2 Echo – Supply Chain relationships

Figure 72 below shows the relevant lines of communication and co-operation between the different parties involved in strategic sourcing between the Pegasus business areas and Echo.

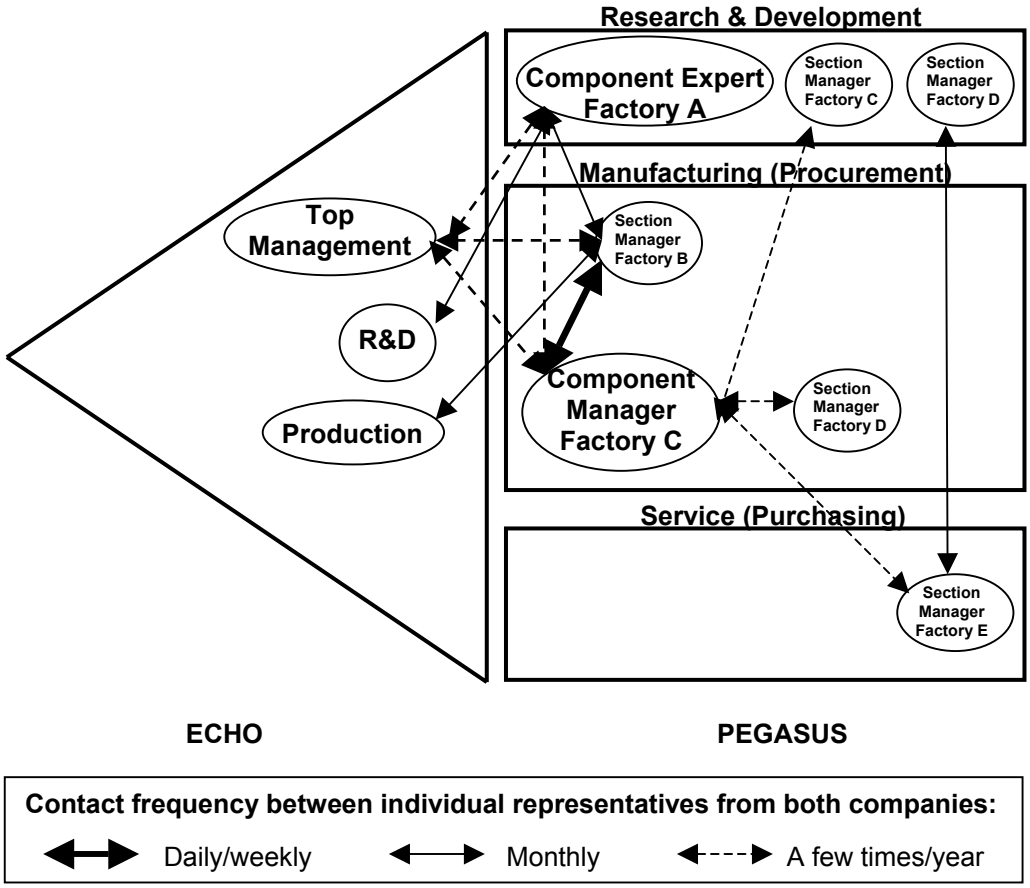

Figure 72. Relevant strategic sourcing relationships between different Pegasus business areas and Echo representatives

Figure 72 above illustrates that, all in all, the interaction and communication frequency between the Pegasus and Echo representatives was limited. The Pegasus business area mostly involved in this relationship was Manufacturing (Procurement), along with Research & Development to some extent. Service (Purchasing) was not directly involved. The intra-functional relationships are presented in the context of Manufacturing (Procurement).

Figure 73 below illustrates the situation concerning each relationship component in the Echo – Pegasus relationship. Note that each component

presented here is “an average” of the individual representatives involved in the inter-organisational and inter-functional relationships. The individual responses were grouped in either the supplier or the Pegasus business area (i.e. functional) level.

	Echo	Manufacturing (Procurement)	Research & Development	Service (Purchasing)
Echo		TRUST 2 COMMUNICATION 2 CO-OPERATION 2 RISK/REWARD SHARING 1 COMMITMENT 1	TRUST 1 COMMUNICATION 1 CO-OPERATION 1 RISK/REWARD SHARING 1 COMMITMENT 1	No strategic-level relationship between the parties. On the strategic level, Service (Purchasing) is represented by Manufacturing (Procurement).
Manufacturing (Procurement)	TRUST 2 COMMUNICATION 2 CO-OPERATION 1 RISK/REWARD SHARING 1 COMMUNICATION 1		TRUST 2 COMMUNICATION 1 CO-OPERATION 1 RISK/REWARD SHARING 1 COMMITMENT 2	TRUST 2 COMMUNICATION 1 CO-OPERATION 1 RISK/REWARD SHARING 1 COMMITMENT 1
Research & Development	TRUST 1 COMMUNICATION 1 CO-OPERATION 1 RISK/REWARD SHARING 1 COMMITMENT 0	TRUST 2 COMMUNICATION 1 CO-OPERATION 2 RISK/REWARD SHARING 1 COMMITMENT 1		TRUST 2 COMMUNICATION 1 CO-OPERATION 1 RISK/REWARD SHARING 1 COMMITMENT 1
Service (Purchasing)	No strategic-level relationship between the parties. On the strategic level, Service (Purchasing) is represented by Manufacturing (Procurement).	TRUST 2 COMMUNICATION 2 CO-OPERATION 1 RISK/REWARD SHARING 1 COMMITMENT 1	TRUST 2 COMMUNICATION 1 CO-OPERATION 1 RISK/REWARD SHARING 1 COMMITMENT 1	

Figure 73. Relationship component scores of the inter-organisational (Echo) and inter-functional relationships in epsilon sourcing

On the corporate level, the **inter-organisational relationship** between Echo and Pegasus was not working well. It appears from the figure that, on this level, the relationship-development areas were linked to some internal problems in the Pegasus organisation. These problems clearly had an impact on communication and co-operation between the two companies. Commitment from both parties was also apparently relatively limited, although Echo appeared somewhat more committed.

On the **inter-functional level,** communication and co-operation between each of the three business areas was for the most part limited to the local level in each product factory. This is clearly evident in the case of Echo, where the Manufacturing (Procurement) Factory C Component Manager tried to introduce this supplier in Factory A. Factory A Research & Development did

not approve of this at the time[77]. However, well-functioning relationships within Manufacturing (Procurement) offered alternative modes of communication and co-operation between the different business areas. The Manufacturing (Procurement) Factory B Section Manager acted as an information link between the Manufacturing (Procurement) Factory C Component Manager and the Research & Development Factory A Component Expert.

As was the case with most other components and subsequent relationships, neither joint planning and strategy setting nor risk and reward sharing were practised in the business areas, which tended to work more or less independently of one another on the Pegasus corporate level. Commitment to and trust in the relationships and co-operation appears – for the most part – to have been limited to the local level. There was considerable room for improvement in the inter-functional relationships across product factories.

The **intra-functional relationships** were also studied in the context of Manufacturing (Procurement). Figure 74 below illustrates the components of the relationships between the key Manufacturing (Procurement) representatives involved in epsilon procurement: the Factory C Component Manager, the Factory B Section Manager and the Factory D Section Manager. The individual respondents have not been grouped.

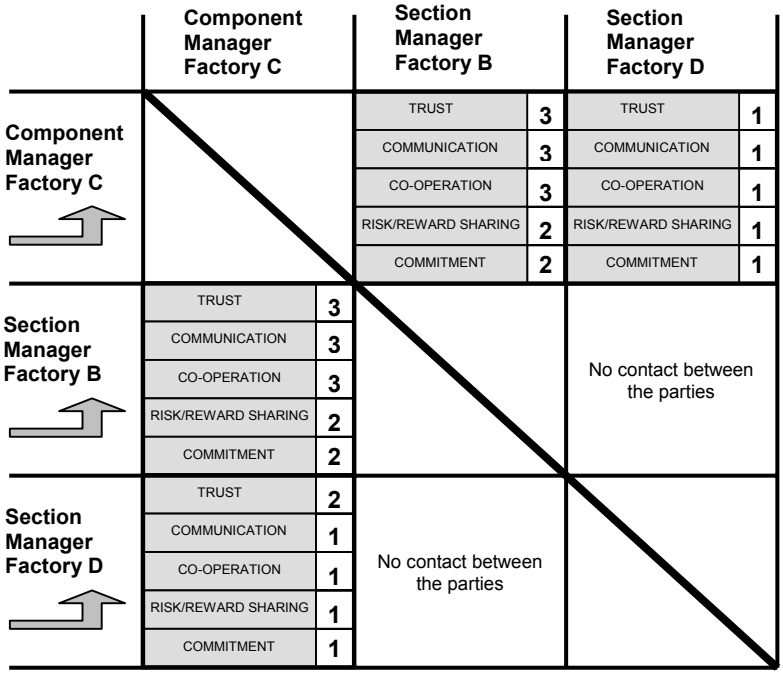

Figure 74. Relationship component scores of the intra-Manufacturing (Procurement) relationships in epsilon procurement

[77] In 2002, Echo is actively supplying to Factory A.

The intra-functional relationships in epsilon procurement were working well, especially between Factory B and Factory C. The Factory C Component Manager was responsible for all strategic procurement activities in the Manufacturing Business Area, and also in Service (Purchasing). He operated in very close co-operation with the Factory B Section Manager, and their relationship was highly developed.

In contrast, the relationship between the Factory C Component Manager and the Factory D Section Manager left considerable room for improvement, especially in the areas of information exchange, co-operation and commitment to joint intra-functional procurement operations. Again, as was the case with many other components, the Manufacturing (Procurement) organisation appeared to be split into Pegasus product factories (Factories A, B and C) and Medusa-brand manufacturing units (Factory D).

Figure 75 below presents the Echo – Pegasus buyer-supplier relationship as a supply chain context in the inter-organisational and inter-functional perspectives.

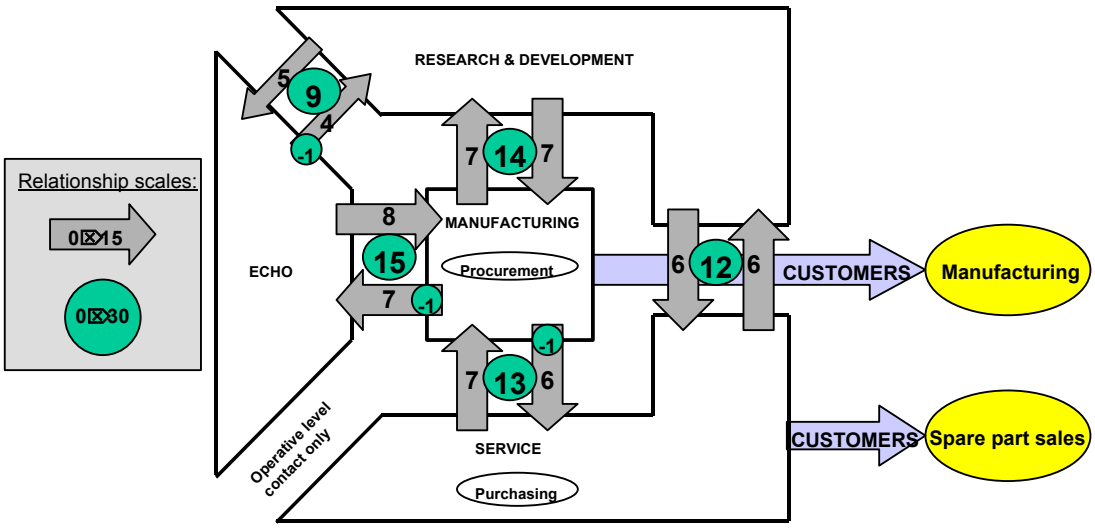

Figure 75. Pegasus – Echo relationships in a supply chain context

On the Pegasus group-level, Manufacturing (Procurement) and Research & Development did not work in a close and co-operative inter-functional manner with respect to the Echo – Pegasus inter-organisational relationship. However, the intra-functional relationships between key Manufacturing (Procurement) representatives were relatively good. There were only minor differences in balance between the different dyadic-relationship perceptions from the inter-organisational and inter-functional perspectives.

11.3 High- and low-performing relationships – a comparison

The two high- and low-performing relationships were selected from the original set of 10 buyer-supplier relationships studied and evaluated in Seppälä (2001). The basis for the evaluation was the Pegasus supplier-relationship score in the inter-organisational perspective. These scores were determined using the buyer-supplier relationship assessment model and applying it in the inter-organisational (company – company) context (see Seppälä 2001).

Figure 76 below presents the grouped[78] inter-organisational, inter-functional and intra-functional relationship perspectives for the two high-performing relationships. Each perspective is presented on a scale from 0 to 100, with 0 representing a poor relationship and 100 a very developed – "perfect" – relationship. All in all, it should be noted that the high- and low-performing relationships discussed in this study are by no means the "polar opposites" on the low – high performance scale.

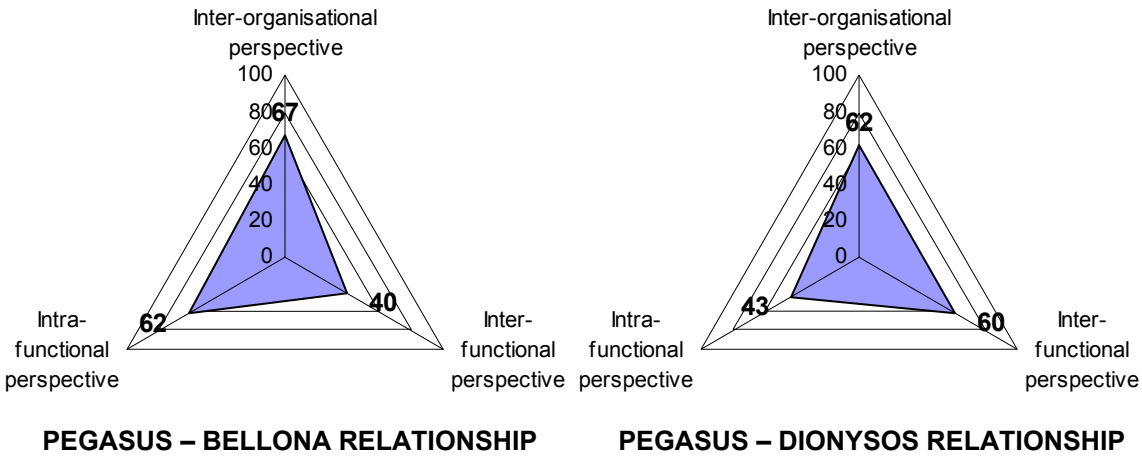

Figure 76. High-performing relationships from the inter-organisational, inter-functional and intra-functional perspectives

By definition, the high-performing buyer-supplier relationships studied here achieved a high relationship score (in relative terms) in the inter-organisational perspective: both the Pegasus – Bellona and the Pegasus – Dionysos relationships achieved more or less equal scores, 67 and 62 points respectively. There were differences in the inter-functional perspective, with

[78] The grouping was done so that, e.g., the inter-functional perspective includes all applicable inter-functional relationships, i.e. Manufacturing (Procurement) – Research & Development, Manufacturing (Procurement) – Service (Purchasing) and Research & Development – Service (Purchasing). Note that the grouped relationship scores remain commensurable regardless of the number of functional areas involved.

the Pegasus – Bellona relationship scoring only 40 points and the Pegasus – Dionysos relationship achieving 60, and in the intra-functional perspective where the relative scores were 62 points and only 43 points.

Figure 77 below presents the two low-performing relationships from the inter-organisational, inter-functional and intra-functional perspectives again, with the individual relationship components and respondents grouped accordingly.

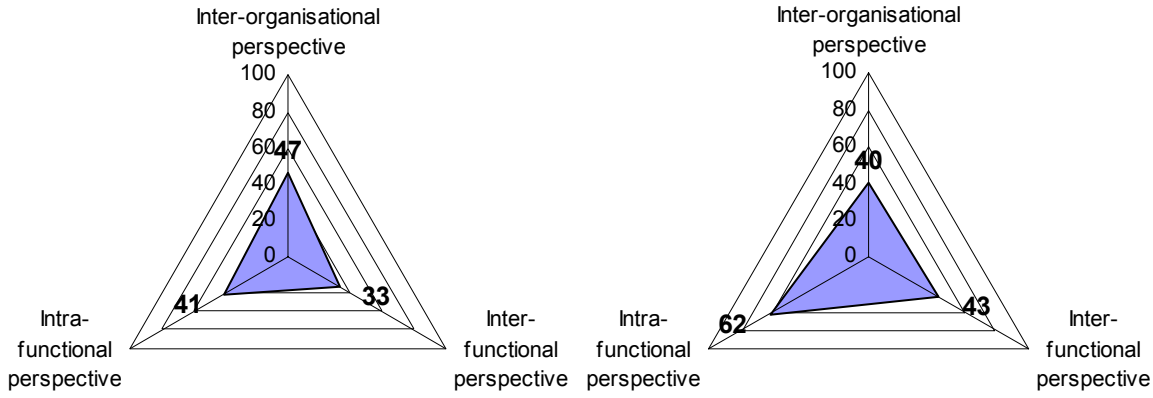

Figure 77. Low-performing relationships from the inter-organisational, inter-functional and intra-functional perspectives

The Pegasus – Ge/Geb and Pegasus – Echo relationships scored 47 and 40 points respectively on the inter-organisational perspective. In relative terms, these relationships are low-performing from the inter-functional perspective in comparison with the high-performing Pegasus – Bellona and Pegasus – Dionysos relationships.

In principle, the Pegasus – Ge/Geb relationship shows similar weaknesses in all three relationship perspectives, with scores equal to 47, 33 and 41 on the inter-organisational, inter-functional and intra-functional perspectives respectively. Given that this is a buyer-seller relationship, the perspectives would appear to be linked in some form or another.

However, the Pegasus – Echo relationship achieved a relatively high score in the intra-functional perspective (62 points) and a low score in the inter-functional perspective (43 points). This is very similar to the situation with the Pegasus – Bellona high-performing inter-organisational relationship, and yet the Pegasus – Echo score on inter-organisational relationships was relatively low (40 points).

In the case of the Pegasus – Bellona and Pegasus – Dionysos relationships, weakness in either the inter-functional or intra-functional sense was compensated by strength in the other perspectives. It appears as if the organisational network in Pegasus was able to “by-pass” the problematic areas

in its formal operating structure via less formal relationships and communication links. It is clear that this kind of creative problem solving did not take place in the case of the Pegasus – Echo relationship.

The findings on the Pegasus – Ge/Geb relationship would appear to suggest that weakness in both inter-functional and intra-functional terms would seriously hinder the development of inter-organisational buyer-supplier relationships. Moreover, neither of the two high-performing inter-organisational relationships showed weakness in the inter-functional or intra-functional perspectives.

11.4 The RAM and MSU results – a comparison

For this study, extensive semi-structured interviews were conducted to assess each individual relationship component in the relationship assessment model (RAM). This qualitative data collection was ultimately processed into a quantitative figure indicating the relationship score on a scale from 0–100.

During the research process, an opportunity also arose to conduct a quantitative survey-based investigation of the research area. This was achieved by applying the MSU benchmarking questionnaire, and by mapping individual MSU-questions onto RAM-constructs (see Appendix 2 and 3 for details). The research scope of the MSU benchmarking is not any individual buyer-supplier relationship. Instead the investigation is rather centred on the overall state of supply chain integration in case-company operations.

Here, some key informants who took part in the relationship assessment interviews also completed the MSU benchmarking survey (see Appendix 2 for details). The MSU survey only involved the Pegasus side of the business relationships. Each MSU benchmarking informant was then mapped to represent the four buyer-supplier relationships under investigation in this study. Table 28 below illustrates the results and differences between both the relationship assessment model (RAM) and the applied use of the MSU benchmarking tool.

Table 28. A comparison of the Relationship assessment model (RAM) and the MSU Benchmarking (MSU) results.

Supplier		**Inter-organisational perspective**			**Inter-functional perspective**			**Intra-functional perspective**		
		RAM	MSU	Δ	RAM	MSU	Δ	RAM	MSU	Δ
High-performing relationships	Bellona	67	72	+5	40	64	+24	62	N/A	N/A
	Dionysos	62	65	+3	60	69	+9	43	N/A	N/A
Low-performing relationships	Geb	47	70	+23	33	36	+3	41	N/A	N/A
	Echo	40	71	+31	43	63	+20	62	N/A	N/A
Average		54	70	+16	44	58	+14	52	N/A	N/A

NOTE: Each perspective is scaled to a range between 0 and 100. Note that the MSU benchmarking tool does not offer the specific assessment of the intra-functional perspective.

Basic arithmetic analysis[79], clearly reveals that there are differences between the results of the two methods and methodologies used for assessing relationship characteristics. Overall, the MSU results seem to offer a more optimistic view than the RAM relationship score. The differences in the high-performing relationships are in single figures, with the exception of the inter-functional relationship in the case of Bellona. However, in the case of the low-performing relationships, there is a considerable gap between the two sets of results, with the exception of inter-functional Ge/Geb relationships.

It should be borne in mind that the different unit of analysis (RAM: individual relationship vs. MSU: overall supply chain operations) may have contributed to the difference in results. The MSU results represent the average picture, whereas the RAM results are specific to a particular relationship. Nevertheless, it could be assumed that the average results of the relationship assessment model and MSU benchmarking (at the bottom of Table 28) reflect relatively little difference between interview (RAM) and the survey (MSU) findings.

Both the RAM and MSU results were presented to Pegasus representatives in two workshops, one in August 1999 and the other in March 2000. The comments received suggested that the RAM results presented a relatively accurate picture of the state of the buyer-supplier relationships under investigation. However, the results of the whole MSU benchmarking were judged to portray a somewhat too optimistic view of the reality. This would appear to support the use of the relationship assessment model. The reason why respondents chose to answer the MSU questions more optimistically may have been because it was more comforting to respond in a positive manner. They may also have misinterpreted the questions altogether, despite careful preparation and questionnaire "localisation", with further explanation linked to almost every MSU benchmarking question.

11.5 Epilogue – the situation after three years

The purpose of this section is to describe briefly what has happened since the empirical data of this study was collected in 1999. The focus is on both the buyer–supplier relationships and the Pegasus organisation, especially on what impact the research results had on the Pegasus way of working.

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[79] Due to the relatively small number of respondents (RAM: 8–10 respondents/relationship / MSU: 1–7 respondent(s)/relationship) for each buyer-supplier relationship, more developed statistical analyses would offer little additional insight into the differences between the assessment methods and the models applied.

General market developments have not been favourable to Pegasus or its competitors in the past three years. The overall slowdown in the economy across the globe has resulted in a contracting market situation, which in turn has resulted in lower production volumes and ever-increasing pressure on prices. Naturally, this has had its effect on the buyer-supplier relationships under investigation in this study. In the longer term, there also appears to be a shift, albeit slow, in the market and possibly also production activities from Europe to Asia, which may also explain some of the events that have taken place.

11.5.1 Pegasus and its way of working

The empirical results of this study, in the form of the company report, were presented in a sourcing group workshop in the latter part of 1999. The company report identified a number of development areas in the Pegasus buyer-supplier relations from each of the three relationship perspectives. The ideas ranged from the development of common targets and reward mechanisms internally and externally with suppliers, to the need for a more formal process-like approach to sourcing operations, including inter-organisational relationships. After some time, it was clear that all of the individual development ideas would more or less come under the wing of sourcing-process development, and consequently the primary output of this workshop was the initiation of a sourcing-process project. This project was aimed at defining and implementing a relatively formal sourcing process that would lay down the basic operating principles in inter-functional sourcing operations. At the end of 1999, a multifunctional project team was established to define and develop the sourcing process.

Over the following two years this project team did indeed define the sourcing process, and this definition now stands for the most part across the whole corporation. However, there are still areas that have not been fully defined, such as the key performance indicators for the sourcing process and its sub-processes. The implementation has not progressed as smoothly as it could have done, either. This work on the sourcing process was also one of the starting impulses for the development of Pegasus-wide business processes that are currently (in 2003) underway.

Pegasus has also now started to categorise its suppliers within its own defined segments (six in total), and has agreed on three different types of relationships: arm’s-length, co-operation and partnership. Further definition and implementation of this approach is still in progress.

11.5.2 Buyer-supplier relationships

Currently, three years after the RAM relationship data was collected, **Bellona** is still one of the beta suppliers for Pegasus, but some changes have taken place. First of all, the Bellona technical sales person (i.e. the account manager) has left the company. According to the Pegasus representatives, Bellona (a multidivisional company) appears to be in the process of seriously considering the future of its large beta production unit. Its MEP-project was not very successful due to over-optimistic estimates of production-volume growth. It scaled its investments on the basis of these volume figures, and now the production capacity is under-utilised. This has resulted in cost pressure, which has not been favourable to Pegasus. Consequently, Pegasus has not accepted the proposed price increases and is now looking for and developing an alternative source of supply, gradually shifting its purchasing volume elsewhere. All in all, the long-term outlook for this relationship does not look promising.

Dionysos is still supplying deltas to Pegasus. The business has not developed as projected in 1999, mainly due to increased cost pressure from Dionysos. This supplier is still part of the Pegasus delta-supplier portfolio, but at the moment there are no plans to extend the scope of this business.

Soon after its move from Germany to England, **Ge/Geb** announced that it would discontinue is production of large-size gammas, and production had stopped by early 2002. Despite this decision to close down its production, Ge/Geb apparently also made sure that Pegasus would have sufficient time to find alternative sources of supply. Because of this "graceful exit", no major problems occurred. At Pegasus, the Factory D Component Manager resigned from that position and her duties were reassigned to the Factory C Section Manager. She is still working as a Section Manager for other components in Factory D.

During the past three years, **Echo** has become one of the most significant epsilon suppliers to the Pegasus Corporation. It is also supplying to Factories A and B and, in fact, has now started to approach the levels of Dionysos in its share of epsilon supply to Pegasus.

The inter-functional relationships were not working very well at the time of the research-data collection in 1999. The person then acting as the Factory A R&D Component Expert left the company in early 2000, thus possibly giving room for Echo to enlarge its scope of business with Pegasus. Nevertheless, it appears as if the well-functioning intra-functional relationships in Manufacturing (Procurement) were the driving force behind the introduction of Echo as a supplier to the whole of the Pegasus Corporation.

Table 29 below illustrates the purchase/sales volume figures from the perspectives of both Pegasus and the supplier, first in 1999 and then in 2002.

Table 29. Purchase-volume development

Supplier		Share of Pegasus component-purchasing volume supplied by supplier		Pegasus share of supplier's total sales	
		1999	2002	1999	2002
High-performing relationships	Bellona	60%	35%	15%	35%
	Dionysos	75%	75%	2%	2%
Low-performing relationships	Geb	60%	0%	50%	0%
	Echo	17%	24%	3%	3%

Bellona's share of Pegasus' total beta demand dropped quite dramatically from 1999 to 2002. Yet, during the same time period, the significance of Pegasus to Bellona increased to represent over one third of its large-size beta unit sales. Pegasus shifted some of its purchasing volume to a new supplier, and apparently Bellona has not been able to find growth in other customer accounts to substitute for the share of Pegasus business it lost.

The outlook for Dionysos' delta business looked promising in 1999, with high volume-growth estimates at both Dionysos and Pegasus. The business never really took off, as the Pegasus product using this delta type did not reach its production-volume estimates. Dionysos still supplies this particular delta type to Pegasus, but the business has not expanded further. In 2002 Pegasus was also looking for some alternative supplier, not specifically to replace Dionysos as a delta supplier, but not ruling out this option either. In practice, replacing Dionysos could easily lead to a situation in which it would give up the delta business altogether.

In late 1999, Geb announced that it would discontinue its activities in the large-size gamma business. Activities were gradually discontinued, and at no time was Pegasus left with a shortage of supply, and was gradually able to shift its purchasing volume to other suppliers. One alternative supplier was Geryon (see Seppälä 2001 for details), which was introduced to the Pegasus gamma-supplier portfolio to balance its dependence on Geb.

Echo's share of the Pegasus epsilon purchasing volume increased from 17% to 24% between 1999 and 2002, while Pegasus's share of Echo's total output remained the same, or even declined marginally. Echo has also now gained an approved supplier status in Factory A.

12 CONCLUSIONS

12.1 Research results

The purpose of this study was to develop a relationship assessment model and a methodology for studying buyer-supplier relationships in inter-organisational, inter-functional and intra-functional perspectives. This model was also applied and developed interactively in a case-company setting. In addition, some research questions were formulated to increase research knowledge and methodology in the area of buyer-supplier relationships. The first research question addressed the existing research literature in terms of both theoretical and empirical approaches:

1. How well does contemporary research literature reflect and explain the existence of business relationships in inter-organisational, inter-functional and intra-functional perspectives?

The theoretical approaches discussed in this report all recognise buyer-supplier relationships as a more or less stable exchange formation in the inter-organisational relationship perspective. However, the inter- and intra-functional perspectives are not equally well recognised.

Transaction cost theory considers developed relational exchange to be a temporary phenomenon destined to dissolve or become integrated into a single organisation. The unit of analysis in this theory is the transaction, and not the relationship that is the context in which this transaction is performed. It thus does not consider the implications linked to the social aspects of individual transactions or other transactional relationships. The basis for exchange is derived from minimised transaction, production and governance costs. In principle, make-or-buy decision-making results in either internalised (hierarchy-based), or market-based transactions. In transaction cost terminology, different exchange formations are referred to as ‘governance mechanisms’, and the decision concerning the appropriate governance mechanism is made unilaterally by the firm in question. In fact, transaction cost theory explains the existence of developed relational exchange as a solution for reducing transaction costs, but it offers very few concepts or tools for managing developed relationships. This theory also considers the benefits and drawbacks of different organisational forms, but again it offers very little guidance for understanding or managing the inter- or intra-functional

relationships in relation to the inter-functional relationship perspective. The transaction cost approach is also a widely accepted theoretical framework in research on supply chains, mainly on the transaction level. This approach basically does not address relational elements such as trust and commitment in the relationships between the parties in the supply chain.

The **relationship marketing/purchasing approach**, in its broad form, appears to be an applicable theoretical frame of reference for studying buyer-supplier relationships in all three relationship perspectives. The unit of analysis in this theoretical approach is the dyadic relationship, in which individual transactions are simply episodes. Successful relational exchange results in relationship benefits (e.g., increased sales), and minimised transaction and production (including governance) costs.

In the terminology of relationship marketing and purchasing, 'relationship type' is used to describe the exchange formation, and here the decision concerning the relationship type is often bilateral involving both the buyer and the supplier. The approach focuses on the relationship and, in focusing on reduced costs, it also considers the possible benefits (e.g., reduced uncertainty) of the developed relational exchange. It places a strong emphasis on the more developed relationship types, whereas the dyadic approach (i.e. the narrow view of relationship marketing) fails to recognise the embeddedness of individual relationships in the surrounding environment, and thus shows limited concern for other relationships. Yet, the intra- and inter-functional perspectives on relationships (also in relation to inter-organisational relationships) are recognised in the broader view of relationship marketing, e.g., in the form of internal marketing.

The relationship marketing/purchasing framework would appear to be a suitable approach for analysing procurement decision-making in the dyadic inter-organisational relationships on the relationship-type continuum. Research questions and decision-making in this theoretical approach typically concern appropriate partner selection and relationship type determination. Despite offering concepts for describing inter-organisational relationships, it offers very few tools for effectively managing these relationships. In addition, for the most part, the rationale for developed relational exchange would appear to be borrowed from transaction cost theory. The relationship marketing/purchasing approach has not been widely used in research on supply chains, which is mostly concerned with relational elements such as trust and commitment between members of the chain and does not address the transaction level and its characteristics.

In the **IMP-group/Industrial network approach,** individual relationships form a network in which the relationship is embedded in the social structures of the organisations in question, and in the network of other relationships.

Consequently, the exchange-formation terminology in this theoretical approach refers to the company's position in the network rather than to individual relationship types. The network position itself is dependent not only on the focal company's decision-making, but also on the changes elsewhere in the network that have an effect upon the position of the focal company. The IMP-group/Industrial network approach recognises the range of different exchange formations and their interlinked nature, and naturally not all relationships are considered to be of equal importance.

According to the industrial network approach, individual relationships are embedded in the network of individual relationships. This type of holistic analysis would appear to be suitable for highly developed buyer-supplier relationships. On the relationship-type continuum, the approach is believed to be most suitable for buyer-supplier relationships ranging from the purely dyadic towards the individual company (yet falling short of full vertical integration) in which the network configuration is assumed to be relatively well established and identifiable. All in all, the IMP-group/Industrial network approach recognises all three relationship perspectives (inter-organisational, inter-functional and intra-functional) and their interlinked nature. In principle, it addresses research questions similar to those in the relationship marketing/purchasing approach, yet within the network context. Typical research questions concern network positioning and networks as a source of competence. As in the case of the relationship marketing/purchasing approach, the IMP-group/Industrial network approach offers a number of concepts for describing networks and relationships, but very few tools for effectively managing these networked relationships. It considers supply chains as networks of interacting firms. The focal area of interest is the relationship (in the network context) between the interacting parties in the supply chain, and not so much in the transactions taking place across it.

Some of the key characteristics of the three theoretical approaches are summarised in Table 30 on the general level, and some of the elements specific to the focal area of research in this study are also listed.

Table 30. Key characteristics of the theoretical approaches

Key characteristics	THEORETICAL APPROACH		
	Transaction cost theory	**Relationship marketing/purchasing approach**	**IMP-group/ Industrial network approach**
Unit of analysis	Transaction	Dyadic relationship	Dyadic relationships embedded in the network context
Basis for exchange	Minimised transaction and production costs (including governance costs)	"Relationship benefits" and minimised transaction and production costs	"Relationship benefits" and minimised transaction and production costs. Not all relationships are equal.
Exchange formation terminology	Governance mechanism	Relationship type	Network position
Exchange/relation-ship selection	Unilateral decision	Bilateral decision	Multilateral "decision"
Recognition of "embeddedness"	No (in respect of social aspects linked to transactions and other relationships)	No (with respect to other relationships)	Yes
Recognition of inter-functional and intra-functional relationship perspectives	Extensive discussion on different organisational forms, but without much concern for inter- and intra-functional relationships.	The broad view of relationship marketing recognises marketing and purchasing as cross-functional processes and the significance of internal marketing.	Yes
Supply chain perspective	Widely used theoretical framework in transaction-level research on supply chains. Not much concern for the relational elements of SCM.	Supply chain relationships recognised in a dyadic context. Focus mainly on relational elements, with less emphasis on the transaction level.	Supply chain or supply chain networks. Focus mainly on relational elements, with less emphasis on the transaction level.

In principle the three theoretical approaches do not have to be treated as very different as all the three theoretical approaches consider minimised transaction and production costs as the basis for exchange. The differences in other characteristics can to great extent be attributed to differences in the ontological stance. Transaction cost theory appears to lie in the 'realist'-end of the scale with the world as treated as given and external to the observer, whereas both the relationship marketing and IMP-group/Industrial network approach perceive the reality as a product of one's mind. With this in mind, the theories don't seem that distant from one another.

To complement the theoretical overview, some recent empirical investigations were also reviewed. The second part of the first research question concerned existing literature on empirical approaches to research on buyer-supplier relationships.

Current literature on developed relational exchange suggests that organisations engaged in it are active on all organisational levels and across both functions and units. They "speak the same language", are committed to the relationship, and jointly plan their activities both internally in their respective organisations, functions and units, and externally with their partners. (see e.g., Lambert et al. 1996, 12) All in all, developed relational

exchange tends to increase the requirements for intra-organisational integration (Turnbull et al. 1992). Correspondingly, one might assume that recent empirical investigations on buyer-supplier relationships applied methodologies that could capture, or at least recognise, the inter-organisational, inter-functional and intra-functional perspectives.

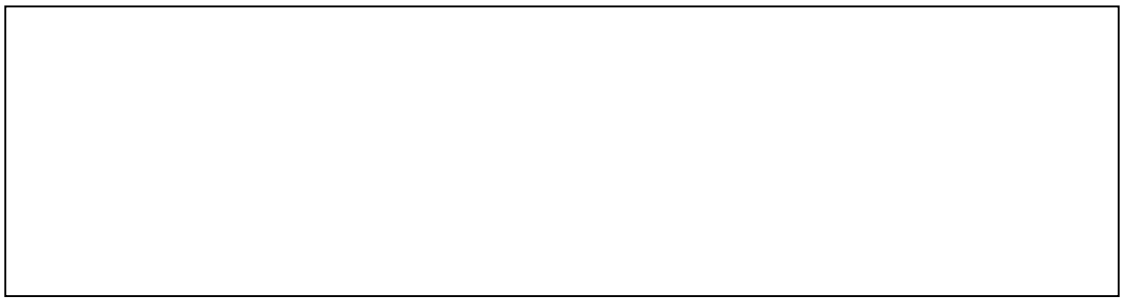
However, for the most part, the examples of current empirical studies on inter-organisational relationships reviewed in this report address – at best – the dyadic relationship between the buying and selling organisations. Often only single informants were involved in each company, and sometimes only one party to the relationship is represented in the studies. Similar conclusions may be drawn from the review of recent empirical inter-functional studies. All in all, it would appear as if the use of multiple informants is a prerequisite in developed relationship research not only between organisations, but also within organisations to if we wish to paint a more comprehensive picture of the relationships.

The current literature on empirical inter-organisational research reviewed in this study does not, for the most part, simultaneously recognise the inter-organisational, inter-functional and intra-functional perspectives on buyer-supplier relationships. Each perspective is discussed and empirically addressed separately, and there appear to be no empirical inter-organisational studies, except for this thesis, that extend beyond the dyadic interaction between the buying and the selling firms, and also take into account the inter-functional and intra-functional aspects. The inter-relationships within the different perspectives should also be more pronounced in future research in this field. Moreover, the supply chain perspective (or mindset) is not well represented in current empirical investigations.

With respect to the research constructs and measures applied, it was somewhat disappointing to realise that quite a number of the studies do not fully disclose the measures used to investigate the research constructs. This seriously limits the opportunities to replicate the findings or, most importantly, to fully evaluate the studies and research methods applied.

It is not difficult to agree with Spekman (2000, 26), who has “always been less than satisfied with aggregation of individual scores to reflect buying center measures”. The grouping of individual respondent answers does not allow for e.g. one-to-one matching of individual parties to a relationship.

The remaining research questions were developed on the basis of the relationship assessment model and the applied research methodology in the context of this empirical study:



The relationship assessment model was built on five relationship constructs, which have commonly been recognised as developed relationship components. This model and these constructs (trust, communication, co-operation, risk/reward sharing and commitment) were then used to assess the buyer-supplier relationships in inter-organisational, inter-functional and intra-functional contexts.

The applied methodology clearly demonstrates that, in the light of this study, the case company does not always "speak the same language" when it comes to maintaining relationships in any of the perspectives. Relationships with very low performance in either the inter- or the intra-functional perspective may or may not reflect the inter-organisational perspective. In some cases (e.g., the Pegasus – Echo relationship), problems in one perspective (i.e. inter-functional) were "by-passed" via good relations in another (i.e. intra-functional).

This study concerned both parties to the relationship. However, there were no major differences in the relationship perceptions of either party. At least in the light of the empirical data, the two parties paired in a relationship always had more or less the same perceptions about it. It is probably no surprise to anybody that relationships are, to a great extent, reciprocal, even down to the level of the separate constructs of the relationship assessment model. However, on the basis of this study, one cannot conclude that it would be sufficient from a methodological perspective only to involve the other party to a relationship in determining how well it works as a whole.

In the light of this study, the use of "the snowballing technique" in determining who is knowledgeable about each of the relationships could, in hindsight, be considered the correct one. Many of the empirical studies discussed in this paper would have relied on the perceptions of the product factory Procurement Managers. In this study, this kind of approach would not have been successful. Moreover, fully relying on the formal roles of individuals in the Pegasus sourcing organisation would, in all likelihood, not have revealed the true nature of the intra-functional relationship perspective (e.g., in the Pegasus-Ge/Geb relationship). The use of multiple informants also

turned out to be very beneficial in adding depth to our understanding of different buyer-supplier relationships.

12.2 Theoretical implications

The most significant theoretical contribution of this study is the relationship assessment model and the applied methodology. Figure 78 below illustrates the positioning of each of the relationship perspectives in relation to each other.

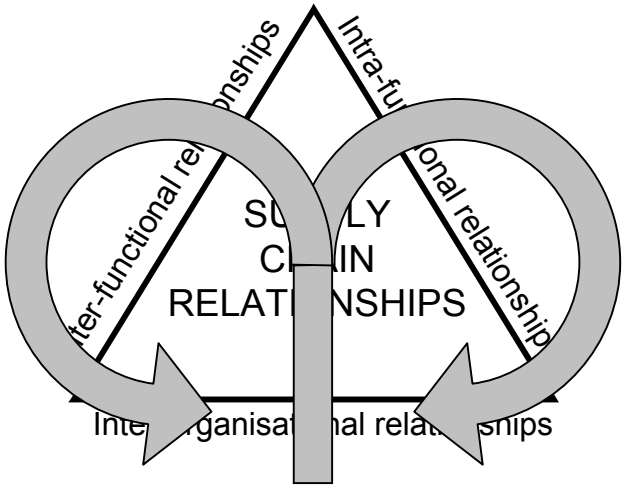


Figure 78. Positioning the three relationship perspectives in this study

None of the three theoretical approaches discussed and assessed in this study readily explain all of the three relationship perspectives. Most of them are focused solely on the inter-organisational relationships in the transactional, dyadic or network configuration, without much concern for the remaining two perspectives. Moreover, they offer very few tools for effectively managing such relationships. Clearly, these findings suggest that researchers should attempt to develop theoretical frames of reference to capture the inter-organisational, inter-functional and intra-functional perspectives on buyer-supplier or any business relationships.

The review of recent empirical investigations also shows that current research treats each of the three relationship perspectives more or less independently without widely recognising the interdependencies. To date, there appear to have been no previous attempts to assess buyer-supplier relationships using this kind of buyer-supplier assessment model and methodology that involves not only the inter-organisational, but also the inter-functional and intra-functional perspectives. The relationship assessment model and the methodology capture all three buyer-supplier relationship

perspectives and provide some interesting insights into the interrelationships. Naturally, it should be kept in mind that these results were obtained in a single case company setting.

It would also be fruitful to evaluate the accuracy of this research model in predicting relationship success. Such an opportunity arose when the researcher was made aware of the current situation (in August 2002) with respect to each of the four buyer-supplier relationships. Now, in hindsight, the "hit-rate" of the buyer-supplier relationship assessment model in predicting future developments in the relationships in question was two-sided. On the one hand, it came as no surprise that one of the low-performing relationships was discontinued. However, neither of the high-performing inter-organisational relationships is really blooming, partly due to the market situation and partly because of the events and decisions made in their development. The overall market development in the whole industry has not been favourable during the time period ranging from 1999 to 2002. Some of the suppliers have been able to retain their market share in the Pegasus supplier portfolio where as some have lost some of it to their competitors.

One of the earlier high-performing relationships is now stable, but at a low level of transaction volume, and there are limited possibilities to increase the business volume due to pressure on prices that the competition is better able to match. The other high-performing buyer-supplier relationship is now also stable in terms of volume, but it could possibly also be phased out due to price pressure. In this case, the earlier investments agreed and developed jointly, but financed by the supplier, are now apparently still under-utilised. In contrast, one of the earlier low-performing relationships has started to flourish, in relative terms, for various reasons, mainly to do with the Pegasus internal way of working. One R&D expert left the company, and this apparently allowed for Manufacturing (Procurement) to better pursue its own goals: consequently, Echo was more widely introduced to the supplier portfolio. In fact, it appears that, according to the inter- and intra-functional perspectives on buyer-supplier relationships, the concept of power might have at least some significance in explaining the inter-organisational aspects. Moreover, although the buying center is a powerful conceptualisation of the group of individuals involved in sourcing activities, the way of working may still, to a great extent, be determined by the actions of even a single individual.

Current literature on supply chain management is mostly concerned with transactional-level interaction between supply chain partners. The buyer-supplier relationships studied here have, in addition the transaction level, a highly significant relational content involving trust, commitment and other social/behavioural factors. In individual cases, these relationship elements are the foundation on which the transactions take place. In other words, future

research on supply chain management would clearly benefit from taking into account not only the transaction level, but also relational factors, e.g., the components of the relationship assessment model.

12.3 Managerial implications

All in all, in the light of this study, it would appear that companies would need to "get their act together" in their inter-functional and intra-functional relationships in order to increase the likelihood of achieving effective inter-organisational relationships. However, it should also be kept in mind that the products exchanged in these relationships are rather developed in nature and require interaction between R&D and procurement. In the case of simple and standard "nuts and bolts" components, this kind of developed interaction between different functional areas does not take place and therefore there is naturally less emphasis on inter-functional and intra-functional relationships. Nevertheless, organisations should put considerable effort into managing their internal relationships prior to engaging in developed inter-organisational relationships with key business partners. It goes without saying that developed relationships are by no means an end worth striving for in themselves.

The relationship assessment model could also be used to quickly determine the state of some key inter-organisational/functional and ultimately inter-personal relationships. This type of test could allow the company management to identify possible areas of concern, or "red flags", in some critical buyer-supplier relationships in inter-organisational, inter-functional and intra-functional perspectives. Regular use of this quick test method would allow trends to be identified and the impact of personnel changes to be assessed, to mention only two possible applications.

In order to identify possible areas for development, a company could first position some of its components on the two component matrices. Then the most critical suppliers could be identified and relationships could be further investigated using the relationship assessment model to identify critical gaps and to develop corrective action plans.

However, there is no one-to-one correlation between poorly-performing inter-functional and intra-functional relationships. In fact, some weakness in either one can be compensated by the other, so that inter-functional relationships are not seriously affected by either of the two other relationship perspectives. Creative problem solving and wide communication networks should be encouraged in cases in which some problems exist ultimately on the inter-personal level.

In this kind of multi-unit highly functional organisation, which Pegasus is, the management should remember the phrase: "You are what you measure!" (Hauser – Katz 1998). If almost all of the performance metrics and risk/reward-sharing mechanisms are geared toward the benefit of the functional area or the respective unit, sub-optimisation is inevitable. Ultimately one could, in fact, rephrase the Hauser & Katz sentence as, "You are what you reward!" because it is not always what you measure that gets done.

12.4 Discussion and limitations

As noted in Chapter 2, this research was initiated in close co-operation with the case company. At the early stages, the focus was primarily on the exploratory empirical investigation, and it was not until later that the theoretical issues came to the forefront. With hindsight, had the theories of buyer-supplier relationships and other theoretical approaches received more attention at the beginning, more developed theoretical results would probably have been produced, and the link between the empirical research and the theory building would probably have been stronger. Yet, without this mode of research approach, the study would probably have never been initiated in the first place.

All in all, no research report is complete without a discussion of the results produced and the research approach itself. There are several criteria for good research, and here the three criteria of reliability, internal validity and external validity are used for the purpose of evaluation.

The number of informants interviewed, and the selection and scope of the study, would suggest that this research gives a relatively accurate and reliable picture of the buyer–supplier relationships concerned. The number of informants and the triangulation possibilities contribute to both the reliability and the internal validity.

One apparent weakness in this study is the fact that the semi-structured theme-guided interviews were not tape-recorded. Instead, extensive notes were made during them, and in most cases all of the collected data was processed into a research-report format as soon as possible, often during the same day. The business relationships under investigation were very sensitive, and it was assumed that tape recording would limit informant openness and honesty, resulting in reduced reliability. This assumption turned out to be correct for most of the interviews.

Moreover, the research aim was not to categorise or seek any meaning structures or inter-relationships in the data collected – had this been the case,

tape-recorded interviews would have been very beneficial in allowing for word-for-word analysis of respondent contributions. A relatively clear and structured relationship assessment model was used in the investigation.

Further, the data reported in the empirical part of this thesis was checked with multiple Pegasus representatives, first during the research process, then a second time after the company report was produced, and finally after the analysis, in the final stages of writing of the thesis. Some minor clarifications and supporting explanations emerged during these "interactive discussions", yet the case descriptions and research data were found to be, for the most part, accurate and correct. The company report was available to most of the interviewees in the Pegasus organisation, and some clarifying comments were received. The theoretical aspects were also presented and tested in academic conferences and doctoral tutorials and workshops (see e.g., Seppälä 1999, Seppälä (2000a, 2000b, 2000c), Ojala et al. 2000, Seppälä – Vafidis 2000 and Seppälä 2002). Yet, with hindsight, it would have been very useful from a validation standpoint to systematically confirm the research data, and possibly also the conclusions, with the interviewees from Pegasus and from the supplier representatives.

To complement the qualitative interview-based relationship assessment model, a quantitative survey-based MSU benchmarking method was also used in an adapted form to determine what kind of picture of the focal area of research would be produced using the two alternative methods. A comparison of both sets of results should increase our understanding of their validity.

The two sets of results differed quite significantly. The MSU results indicated much more positive relationship characteristics than those from the relationship assessment model. Conversely, it could also be argued that the RAM results were much more negative than the MSU results. However, the case-company representatives had the opportunity to comment on both, and this may indeed throw some light on the question of which results offer a more accurate picture of the buyer-supplier relationships concerned. The RAM results were presented and discussed in detail in a workshop in August 1999, whereas the MSU results were revealed in a case-company workshop in March 2000. The overall feeling was that the RAM results presented a relatively accurate picture of the state of the buyer-supplier relationships under investigation, but that the results of the whole MSU benchmarking process – which was used to some extent in this study – were judged to portray a somewhat too optimistic picture of the reality. This would appear to support the use of the relationship assessment model. The reason why the respondents chose to answer the MSU questions in a more optimistic manner may have been because they wanted to respond positively (feel-good factor), or because they may have misinterpreted the questions altogether.

The relationship assessment model constructs could have included some additional components as for example, the overall market situation and its development were not directly included among the model constructs. Now at hindsight it might have been worth while to include the transaction level and the substance exchanged better into the model directly or as enabling and motivating factors. The frequency exchanged could have included for example in the form of number of transactions annually and the overall value of the exchange. This might have offered additional insights to the relationships and the RAM component values.

As with any case research, the ever-present problem of generalisation is also an issue in this study. In the spirit of survey-based quantitative research, for example, this problem is fatal: in principle, a case-study researcher cannot make statistical generalisations. However, as pointed out by Hillebrand et al. (2001), among others, achieving generalisable results equal to those of survey-based research would necessitate a large number of cases and, given the resource-intensive nature of case research, would place great demands on time and also often money, in terms of what is spent on theory-testing in multiple cases. In addition, access to the phenomenon of interest may become an even greater problem than money or time.

It has to be accepted that, in principle, a case-study researcher cannot make statistical generalisations. It is rather the readers who are expected – in addition to understanding the interpretations – to arrive at their own conclusions on the basis of the rich case descriptions (Stake 1998, 100). This kind of theoretical generalisation could be made on the basis of structural similarity, for instance (i.e. the research results would be applicable for all identical situations), or by the identification of the internal logic or real mechanisms (causal, teleological or other) behind the phenomenon in question (Lukka – Kasanen 1995, 78). Such conceptual generalisation often result in extensions to existing theoretical frameworks. “Theory developed from case study research is likely to have important strengths in novelty, testability, and empirical validity, which arise from the intimate linkage with empirical evidence” (Eisenhardt 1989, 548).

On a general level, this study aimed to provide a better understanding of the applicability of different theoretical and empirical approaches in conducting research on buyer-supplier relationships. In addition, the rich case descriptions and the analysis that followed produced fruitful insights into the different relationships, and indeed demonstrated the validity of the relationship assessment model and the usefulness of the research method applied.

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demonstrated the validity of the relationship assessment model and the usefulness of the research method applied.

Although the study was conducted in a single-case-company setting, organisational issues such as management and the basic organisational structure at Pegasus remained constant, thus maintaining comparability across the four buyer-supplier relationships under more detailed study. This allows the reader to better understand the research environment and the internal logic of the case company, and to consider, as well as possibly test, the applicability of the results in another similar setting. Hillebrand et al. (2001, 653) defined this kind of theoretical generalisation as declaring the results of case research valid for a larger population on the basis of both structural similarity and logical argumentation. All in all, the external validity of this research is considered sufficient in terms of the case-study approach.

12.5 Suggestions for further research

This study was conducted using a qualitative interview-based research method. This research approach, with multiple informants, is quite demanding and time-consuming. Expanding the scope of the study using the same research approach and method does not seem feasible. Therefore it may be of use to attempt to develop a survey on the basis of the relationship assessment model. Provided that the possible problems related to key informant identification and access, for example, can be overcome, this survey could be applied in research into a wide range of companies and buyer-supplier dyads, and the model could be developed and tested further. One such direction of development could be to establish weights on RAM components and inter-relationships between the elements of the relationship model. An alternative approach would be to investigate whether there are statistical dependencies between the different relationship perspectives, or preferred paths towards well-functioning inter-organisational relationships.

From a more managerially-driven perspective, this model could also be used as a managerial aid in relatively quickly assessing individual relationships or the overall state of a company's relationship-management practices in the context of trust, communication, co-operation, risk/reward sharing and commitment, for example.

Although some current literature suggests otherwise (see e.g., Morgan & Hunt 1994, Stuart & McCutcheon 1995, Davies 1996 and Williamson 1997), power appears to have an influence on relationships, especially from the inter- and intra-functional perspectives. In some form, power was part of the co-

operation construct in the relationship assessment model, but it should perhaps be incorporated into the model as a separate construct.

The overall market situation and its development should also be taken into account in future research on buyer-supplier relationships. For example, the market structure and its effect on the characteristics of the relationships could be included in the investigation. A natural next step would be to move from static snapshot-like investigations to studies that could determine to what extent buyer-supplier or any business relationships are dependent on the market cycles in different industries.

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APPENDIX 1: INTERVIEW THEMES

General relationship background

I Trust

1. What is the nature of the contract? Are there any enforcement problems?
2. Does everything have to be agreed on paper (contract)?
3. Do things get done without a specific contract?
4. If some developed co-operative arrangement has taken place (with high uncertainty involved), "Would you do it again"?

etc.

II Communication and information exchange

1. Daily and face-to-face communication (means, frequency and nature of the communication)?
2. Quality, quantity and timeliness
3. Visits between the parties in a given time frame?
4. General impressions of communication with the other party?

etc.

III Co-operation

1. Co-operation with the other party (joint projects, design, etc.)?
2. Any joint development projects (e.g., MEP-projects)?
3. Nature of technological co-operation with supplier (e.g., R&D agreement)?
4. Have there been any problems between the parties? If so, of what nature and how were the problems solved?
5. Is there any joint strategy development or goal setting between the parties?

etc.

IV Risk/reward sharing

1. Are there any joint performance-measurement systems and metrics in place that both parties have agreed upon? (R&D, procurement or otherwise?)
2. If a supplier exceeds the set performance criteria, how is the supplier rewarded (or "punished" in the opposite case)?
3. In a possible joint research project is the supplier/Pegasus allowed to apply the developed technology and knowledge accumulated with other suppliers/customers?

etc.

V Commitment

1. The parties involved in the relationship? (operative/strategic/top-management)
2. If the Pegasus/business area/supplier top-management is involved, what is the nature is of their involvement?
3. Any relationship-specific investments?
4. What is the length of each relationship and purchasing contracts?

etc.

APPENDIX 2: KEY INFORMANT INTERVIEWS

PEGASUS

Research & Development

Location	Title	Interview date	MSU benchmarking
Factory A	Concept Engineer Assistant Director	21.5.1999	
	Component Expert (alpha)	12.2.1999	
	Component Expert (beta)	15.2.1999	X
	Component Expert (gamma+epsilon)	18.2.1999	X
	Component Expert (delta)	11.2.1999	
Factory C	Section Manager (alpha)	24.2.1999	
	Section Manager (beta)	17.3.1999	X
	Section Manager (delta)	16.3.1999	
Factory D	Product Manager	25.3.1999	
	Assistant Product Manager	25.3.1999	

Manufacturing (Procurement)

Location	Title	Interview date	MSU benchmarking
Factory A	Vice-President, Sourcing	11.1.1999 25.1.1999 9.3.1999 3.5.1999 29.6.1999	
	Process Development Expert	18.2.1999	
	Component Manager (alpha)	2.3.1999	
	Section Manager (beta) Former Component Manager (alpha)	2.3.1999	X
	Procurement Manager	12.3.1999	
Factory B	General Manager	11.1.1999 25.1.1999 9.3.1999 3.5.1999 29.6.1999	
	Procurement Manager	19.2.1999	
	Component Manager (delta) Former Section Manager (epsilon)	5.3.1999	X
	Section Manager (epsilon)	5.3.1999	
	Section Manager (gamma)	8.3.1999	
Factory C	Component Manager (beta) Section Manager (alpha)	16.3.1999	X
	Section Manager (delta)	16.3.1999	X
	Component Manager (epsilon)	15.3.1999	X
	Section Manager (gamma)	1.4.1999	
Factory D	General Manager	22.3.1999	
	Procurement Manager	23.3.1999	
	Component Manager (gamma) Section Manager (alpha) Section Manager (epsilon)	23/24.3.1999	
	Section Manager (beta)	24.3.1999	X
	Section Manager (delta)	25.3.1999	

Service (Purchasing)

Location	Title	Interview date	MSU benchmarking
Factory A	Procurement Manager	11.3.1999	
	Manager, Materials Management	11.3.1999	
	Operative Purchaser (delta)	11.3.1999	
	Strategic Purchaser (alpha)	12.3.1999	
Factory B	Strategic Purchaser (beta)	4.3.1999	X
Factory E	Strategic Purchaser (alpha+epsilon)	30.3.1999	X
	Strategic Purchaser (beta)	30.3.1999	X
	Former Manager, Purchasing	31.3.1999	
	Manager, Purchasing	31.3.1999	

SUPPLIERS

Supplier	Title	Interview date	Status
Ajax (Germany)	Sales Manager	13.4.1999	N/A
	Sales Representative	13.4.1999	N/A
	R&D manager	13.4.1999	N/A
Anubis (Italy)	President Managing Director	20.4.1999	N/A
	Production and Design Manager	20.4.1999	N/A
	Sales Manager	20.4.1999	N/A
	Engineering and Design expert	20.4.1999	N/A
Apollo (UK)	Sales and Marketing Manager	23.4.1999	N/A
	Chief Engineer	23.4.1999	N/A
Bellona (Germany)	Technical Sales Manager (Pegasus)	15.4.1999	High-performing relationship
	Technical Sales Manager (Medusa)	15.4.1999	High-performing relationship
	General Manager (Business Unit President)	16.4.1999	High-performing relationship
	General Manager	16.4.1999	High-performing relationship
Ge/Geb (Germany/ UK)	Sales Manager (Ge)	19.4.1999	Low-performing relationship
	Managing Director (Ge)	19.4.1999	Low-performing relationship
	Managing Director (Geb)	21.4.1999	Low-performing relationship
Geryon (Finland)	Managing Director	11.5.1999	N/A
	Project Manager	11.5.1999	N/A
	Business Unit Manager	12.5.1999	N/A
Daphne (Finland)	Area Sales Manager	4.5.1999	N/A
	Managing Director	4.5.1999	N/A
	Design Manager	4.5.1999	N/A
Dionysos (Finland)	Production Manager (delta+epsilon)	6.5.1999	High-performing relationship
	Marketing manager (delta+epsilon)	6.5.1999	High-performing relationship
	Design Manager (epsilon)	6.5.1999	N/A
	Production Manager (delta)	7.5.1999	High-performing relationship
	Production Development Expert (delta)	7.5.1999	High-performing relationship
Echo (Belgium)	General Manager	27.4.1999	Low-performing relationship
	Technical Director	27.4.1999	Low-performing relationship
	Sales Director	28.4.1999	Low-performing relationship

N/A = Not applicable in this study.

Table 31. Business area involvement in respect of each supplier and company location/product factory

Component	Supplier	LOCATION/PRODUCT FACTORY				
		Factory A	Factory B	Factory C	Factory D	Factory E
Alpha	Ajax	■▲●	■▲	■▲●	■[2]	
Alpha	Anubis	■[1]▲●[1]			■▲●	▲●
Alpha	Apollo	■▲				
Beta	Bellona	■▲		■	■/●	●
Gamma	Ge/ Geb	■▲	■	■		
Gamma	Geryon	■▲	■			
Delta	Daphne	■▲ + ●[2]	■	(■)	(■)	
Delta	Dionysos					
Epsilon	Dionysos	■▲	■	■[1]		
Epsilon		▲		■▲	■▲●	

■ **Manufacturing (Procurement)** ▲ **Research & Development** ● **Service (Purchasing)**

1) No active supply relationship;
Manufacturing (Procurement) Component Manager
and/or Service (Purchasing) strategic purchasing only.

2) Operative purchasing only.

NOTE: Since the end product produced by each Pegasus product factory is unique, these selected components are not substitutes for one another. In other words, a shortage of alphas in Factory A production cannot be compensated for from Factory B. Despite some differences between each supplier's products, the suppliers themselves may be substitutes for each other in each component group in the particular product factory.

APPENDIX 3: COMPONENTS OF THE RELATIONSHIP ASSESSMENT MODEL AND CORRESPONDING MSU BENCHMARKING SURVEY QUESTIONS

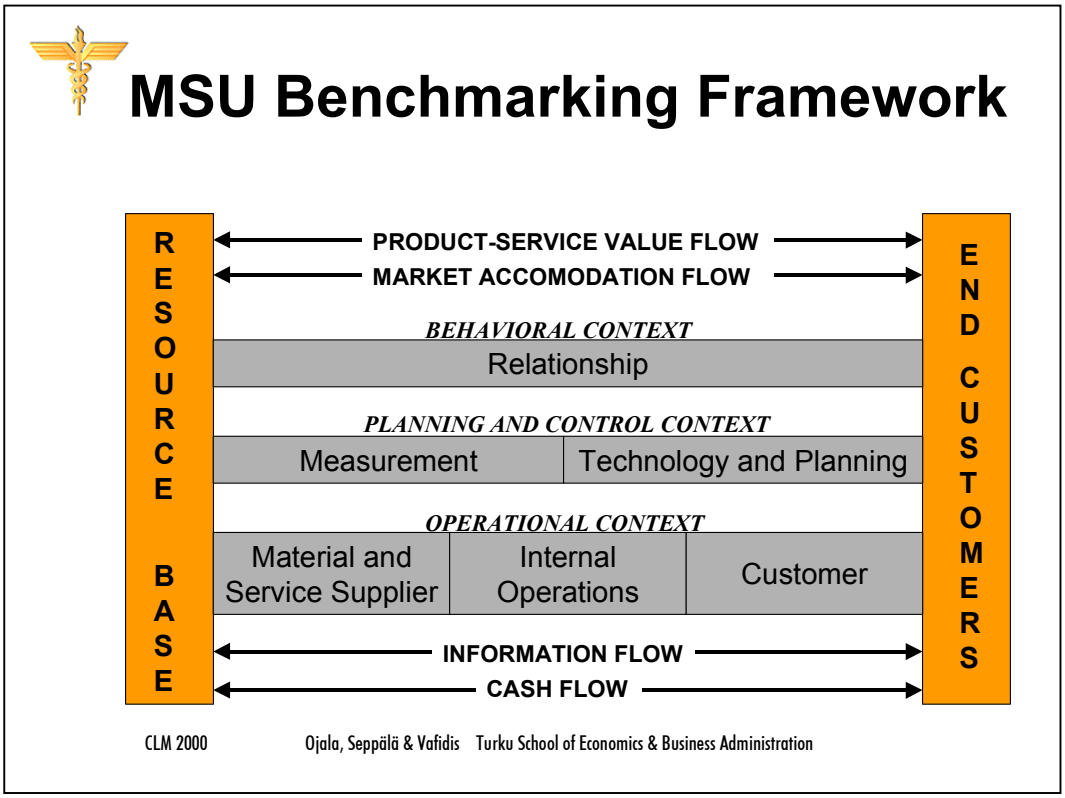
Table 32. Questions on the inter-organisational relationship perspective in the MSU benchmarking questionnaire.

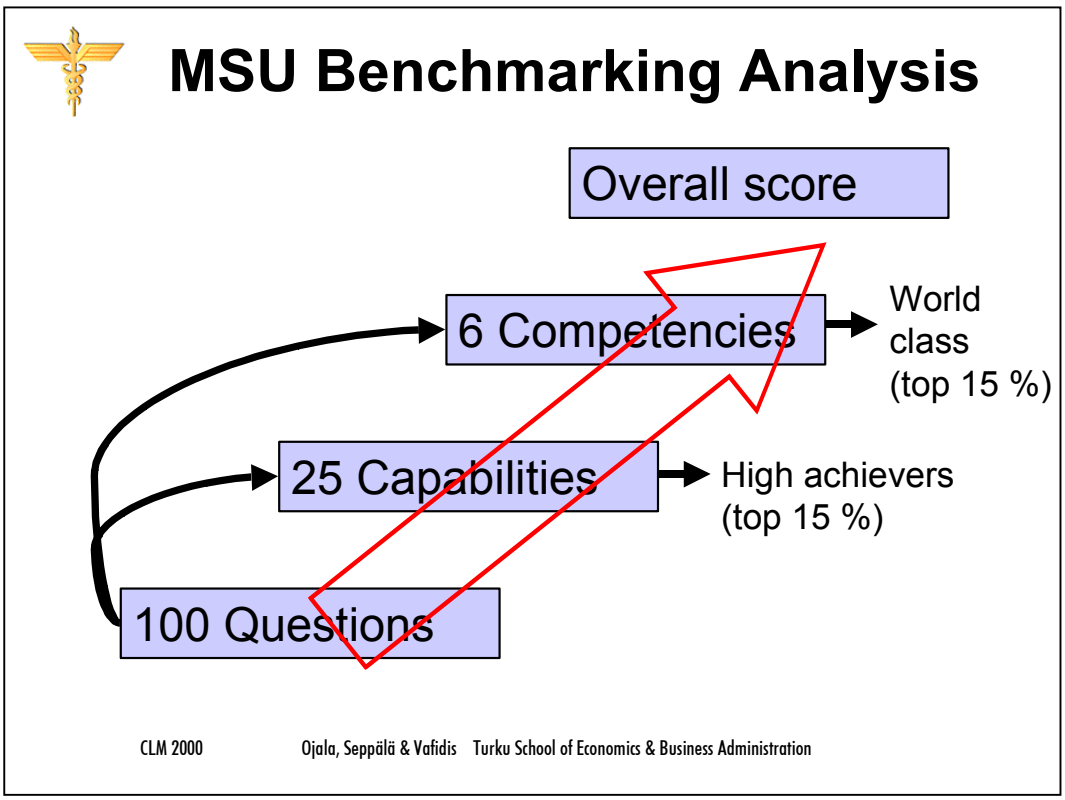
RELATIONSHIP ASSESSMENT MODEL COMPONENT	BENCHMARKING SURVEY QUESTION (Inter-organisational perspective)
Trust	N/A
Communication	6. My firm effectively shares operational information externally with selected suppliers and/or customers. 7. My firm has adequate ability to share both standardised and customised information externally with suppliers and/or customers. 59. My firm is willing to share strategic information with selected suppliers and/or customers.
Co-operation	18. My firm experiences improved performance by integrating operations with supply chain partners. 31. My firm has increased operational flexibility through supply chain collaboration. 37. My firm clearly defines specific roles and responsibilities jointly with our supply chain partners. 40. My firm successfully integrates operations with customers and/or suppliers by developing interlocking programs and activities. 54. My firm believes that the strategic direction, role and performance of our supply chain partners are critical to achieving our success. 57. My firm has guidelines for developing, maintaining and monitoring supply chain relationships. 69. My firm has a track record of allowing suppliers to participate in strategic decisions. 79. My firm has guidelines for terminating partnerships/alliances. 80. My firm collaborates in forecasting and planning with suppliers and/or customers. 82. My firm has active programs to positively impact our supplier's suppliers. 93. My firm has clearly defined a legal framework to guide involvement in supply chain collaboration. 99. In leadership situations, my firm has clearly specified ranges of acceptable behaviour in a partnership or alliance. 101. My firm has facilitated a strong supply network encouraging cooperation with the entire chain of primary and secondary suppliers. 106. My firm actively pursues and shares a common set of expectations with supply chain partners.
Risk/reward sharing	15. My firm has developed performance measures that extend across supply chain relationships. 21. My firm has supply chain arrangements with suppliers and customers that operate under principles of shared rewards and risks. 33. The number of internal performance measures regularly used by my firm has increased over the past three years. 74. My firm is willing to share the results of supplier performance with cooperating suppliers. 95. My firm shares research and development costs and results with primary suppliers.
Commitment	24. My firm places employees at a business facility of suppliers and/or customers to facilitate coordination. 76. My firm is willing to help suppliers finance capital equipment. 83. My firm shares technical resources with key suppliers to facilitate operations. 85. My firm is willing to consider investment in supply material or process development. 102. My firm is willing to enter into long-term agreements with suppliers.

Table 33. Questions from the inter-functional relationship perspective in the MSU benchmarking questionnaire.

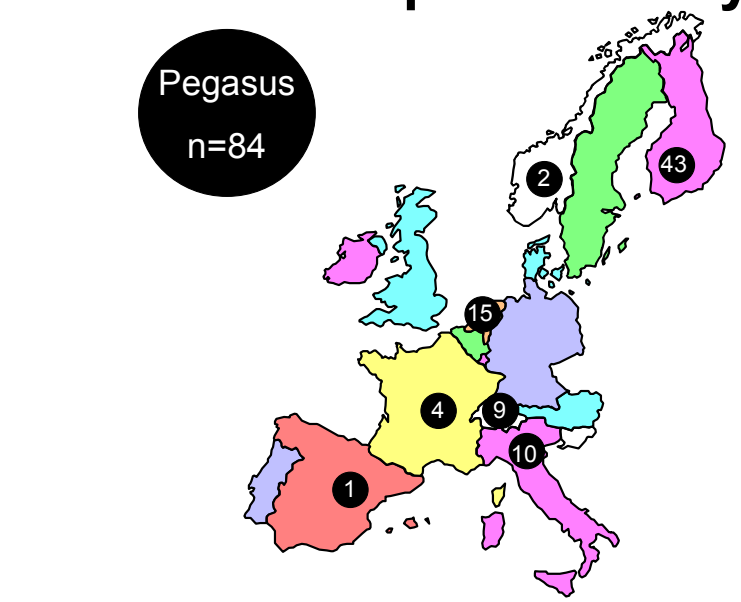
RELATIONSHIP ASSESSMENT MODEL COMPONENT	BENCHMARKING SURVEY QUESTION (Inter-functional perspective)
Trust	N/A
Communication	41. The information available in my firm is accurate, timely and formatted to facilitate use. 42. My firm effectively shares operational information between departments. 43. My firm has adequate ability to share both standardised and customised information internally.
Co-operation	4. My firm extensively utilises cross-functional work teams for managing day-to-day operations. 36. The orientation of my firm has shifted from managing functions to managing processes.
Risk/reward sharing	10. My firm's compensation, incentive and reward systems encourage adherence to stated policies and procedures. 33. The number of internal performance measures regularly used by my firm has increased over the past three years. 97. My firm has developed performance incentives based on process improvement.
Commitment	N/A

APPENDIX 4: THE USE OF THE MSU BENCHMARKING TOOL





No. of respondents by country



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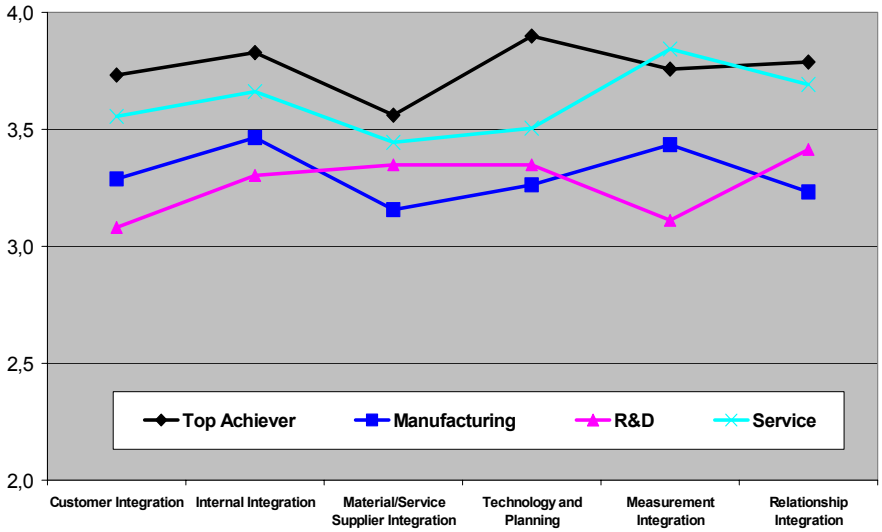
Pegasus results by business area



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