

## MASTER

### Buyer-supplier relationship

impact of trustworthiness on transaction costs and business performance

Hernández Mendieta, J.I.

*Award date:*  
2011

[Link to publication](#)

#### **Disclaimer**

This document contains a student thesis (bachelor's or master's), as authored by a student at Eindhoven University of Technology. Student theses are made available in the TU/e repository upon obtaining the required degree. The grade received is not published on the document as presented in the repository. The required complexity or quality of research of student theses may vary by program, and the required minimum study period may vary in duration.

#### **General rights**

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain

Eindhoven, March 2011

**Buyer-Supplier Relationship:  
Impact of trustworthiness on Transaction Costs  
and Business Performance**

by  
Jaime Idinael Hernández Mendieta

BSc Industrial Engineering  
Student identity number 0621161

In partial fulfilment of the requirements for the degree of

**Master of Science  
in Innovation Management**

Supervisors:  
Prof. dr. A.J. van Weele, ITEM, TU/e  
dr. M.M.A.H. Cloudt, ITEM, TU/e  
Toine Jochems, Philips Healthcare, Best

TUE. School of Industrial Engineering  
Series Master Theses Innovation Management

Subject headings: trust, trustworthiness, transaction costs, asset specificity.

## **Abstract**

Trust in buyer-supplier relationships has attracted a growing research interest among academics and practitioners. Previous studies have concentrated on the benefits of trust to business outcomes and economic performance, as it is considered to be a source of competitive advantage. Despite an increased level of interest in this topic, the notion of trust is still poorly understood. Hence, the motivation of this study was stimulated by the need to increase our knowledge and understanding of the role and nature of trust in buyer-supplier relationships.

This empirical study investigates the buyer trustworthiness using data from suppliers. Its effect on transaction costs and business performance are evaluated in a practical environment. Recommendations are given to Philips Healthcare managers to build/improve trust in the relationship with their suppliers.

## Preface

This Master Thesis report is the result of my graduation project for the Master program, Innovation Management, at the faculty of Industrial Engineering and Innovation Sciences at the Eindhoven University of Technology. The report is the result of the research done at Philips Healthcare in Best. It describes an exploratory study of the role of trust on transaction costs, information sharing, and asset specificity in buyer-suppliers relationships.

My personal objective for this study was to gain experience in conducting academic research. Beside this, I have also had the opportunity to develop it in a business environment. All this has added valuable experience in the private, practical, and study contexts.

I would like to thank my supervisors of the Eindhoven University of Technology for all their support. First, Prof. Dr. Arjan J. van Weele for his feedback, suggestions, and professional support during the project, second, Dr. M.M.A.H. Cloudt (second supervisor) for her useful feedback and opinions.

Within Philips Healthcare, I would like to thank Toine Jochems and Bert Mollen for giving me the opportunity to work on this project, for the time they have invested in our discussion and for their contribution to my research.

Finally, I would like to thank everybody who has contributed to this research or has supported it during the process. I would like to thank my spouse Martha Cecilia, my daughter Claudia Marcela, and my son Jaime Andres for their understanding and support during all this time.

Jaime I. Hernandez Mendieta

March 2011

## **List of Abbreviations**

BOM Bill of Materials

CT Computed Tomography

GOSC Global Operations and Supply Chain

IS Imaging Systems

MR Magnetic Resonance

NM Nuclear Medicine

OPS Operations

PH Philips Healthcare

SAMs Supply Account Managers

UK United Kingdom

US United States

## Management Summary

The topic of trust in buyer-supplier relationships has received considerable attention in the academic literature as a result of opportunistic behaviour and dependence asymmetry which have negative impact on business performance. These are key factors that destabilize close relationships between organizations.

In this research, we have adopted the definition of trust made by Noteboom (2006). He defined trust as “the expectation that a partner will not engage in opportunistic behaviour, even in the face of opportunities and incentives for opportunism”. Therefore, the perception of trust by both parties may influence the firm’s performance throughout the manner they negotiate, communicate, and make customized investments. Moreover, trust facilitates open flow of information, particularly important because the supplier’s designs and innovation may be critical in helping the buyer to differentiate its products on the market.

This study is carried out at the IS OPS Purchasing Department at PH. This department is responsible for finding and contracting suppliers, who deliver specific commodities to the X-ray and MR manufacturing units. Additionally, it supports other divisions in case they do not reach an agreement with the provider. PH is interested in creating value sourcing and value engineering with its suppliers. Value sourcing leverages supply markets in order to stimulate innovation, and value engineering creates the biggest impact on the interface between marketing and development. It is the PH’s strategy to reduce costs and incentivize suppliers to generate transactional value. Therefore, the objective of this study is to evaluate the buyer’s trustworthiness and to see whether this helps the buyer to reduce transaction costs and to observe its effect on the buyer’s performance. Therefore the main question is:

***“Does buyer trustworthiness help to reduce transaction costs and contribute to the firm’s performance?”***

Our contribution to the academic literature in this view is an empirical research about trust and its effects on transaction costs, information sharing, and asset specificity. In order to answer the main research question the following sub questions were formulated:

- What is the difference between a trust relationship and a trustworthy party?
- How to gain trust?
- What are the benefits of trust in buyer-supplier relationships?

***What is the difference between trust relationships and trustworthy party?***

A trust relationship is one of interdependence, where one party is vulnerable to the opportunistic behaviour of the other party in the relationship but the vulnerable party accepts the risk of its vulnerability. A trustworthy party is one which will not unfairly exploit vulnerabilities of the other parties in the relationship.

***How to gain trust?***

A relationship trust starts around a zero point of neither trust nor distrust because of the absence of trustworthiness information of the counterparty. Development of trust is often slow and incremental because parties tend to be reserved about trusting. Over time, the level of trust grows and then remains constant. If trust-violation occurs, the overall level of trust is destroyed and great effort is required to return to the zero point and extra effort to move into positive trust domain.

***What are the benefits of trust in buyer-supplier relationships?***

Trust influences organizations from structural perspectives and from mobilizing perspectives. From structural perspectives enduring interaction partnership between organizations and from mobilizing perspective motivate actors to contribute, combine, and coordinate resources toward collective activities. Some benefits of trust in buyer-supplier relationships are: superior information sharing, better coordination, joint efforts to minimize inefficiencies, and encouragement of suppliers' involvement in product development.

The answers to the sub questions provide the basis for the answer to the main research question.

***“Does buyer trustworthiness help to reduce transaction costs and contribute to the firm’s performance?”***

The answer is, “yes”. Trust between parties brings collaboration benefits such as information sharing and communication, and reduces collaboration drawbacks such as negotiation costs. All this, in turn, works in favour of positive performance and economic outcomes in the relationship.

These recommendations given are based on the interviews and the analysis results. They are the following:

- ***Find the Role of Trust:*** Before using trust as a tool to promote economic improvement, managers should realize whether or not trust is critical to their inter-organizational relationships.
- ***Suppliers' size and trust:*** Buyers could use the suppliers' size as a basis for transferring trust to unknown suppliers, relying on the experience of others.
- ***Stress the importance of trust to the SAMs:*** Develop an acute awareness of the roots of mistrust in interpersonal relationships. Trust levels are usually at their ebb during period such as organizational crises, downsizing, and mergers; when situations are weak. Low trust is, therefore, likely to have a direct negative effect.
- ***Listen to the supplier:*** The nature of bilateral dependence between the transacting parties is the most critical guideline for estimating the real costs and risks to interfirm business and detecting the need for specific governance arrangements. Listen to and talking with the suppliers could represent a good source of market data.
- ***Enhance Information Sharing:*** The results indicate that the expectation of trust is a crucial condition for both sharing information and developing a climate of trust. Accurate information helps the organization to estimate the trustworthiness of (potential) partners and decreases investments in monitoring and enforcing, eventually, reducing transaction costs.
- ***Deal with high suppliers' asset specificity:*** Our recommendations are, firstly, to identify which type of relationship matches the competitive conditions surrounding the product or services exchanged and, secondly, to design the appropriate management model for each type of relationship.

## Contents

Abstract.....	3
Preface .....	4
List of Abbreviations .....	5
Management Summary .....	6
List of Figures .....	11
List of Tables .....	11
1. Project Context and Research Design.....	12
1.1 Background .....	12
1.2 Problem Statement.....	15
1.3 Company Description.....	17
1.4 Intermediate Conclusion.....	18
1.5 Scope and Limitations .....	19
1.6 Thesis Organization.....	19
2. Theoretical Background.....	20
2.1 Definition of concepts.....	20
2.1.1 Trust .....	20
2.1.2 Trustworthiness .....	23
2.1.3 Asset Specificity.....	24
2.1.4 Power and Dependence.....	25
2.2 Role of Trust in Supply Chain Relationships.....	27
2.3 Trust and transaction costs.....	29
2.4 Trust and Information Sharing.....	30
2.5 Intermediate Conclusion.....	31
3. Methodology.....	32
3.1 Types of Research .....	32
3.2 Reliability and Validity.....	33
3.3 Research Setup .....	34
3.4 Hypotheses .....	34

3.5	Research Model .....	37
3.6	Operational Measures .....	40
3.7	The Survey Questionnaire.....	42
3.8	Sample Choice.....	42
3.9	Response Rate.....	43
3.10	Noresponse Bias.....	43
3.11	Data Analysis .....	44
3.12	Missing Data.....	45
3.13	Intermediate Conclusion.....	45
4.	Results.....	46
4.1	Reliability Test: Cronbach’s Alpha.....	46
4.2	Hypothesis testing.....	46
4.3	Intermediate Conclusion.....	49
5.	Discussion.....	50
5.1	Trust and ex ante and ex post transaction costs .....	50
5.2	Trust and Information Sharing.....	51
5.3	Trust and Asset Specificity .....	51
5.4	Power and Dependence.....	52
5.5	Intermediate Conclusion.....	52
6.	Conclusion.....	54
6.1	Managerial Recommendations .....	56
6.2	Suggestions for Further Research.....	57
6.3	Limitations.....	58
	References .....	60
	Websites .....	63
	Appendix 1 - Definitions of trust (Das and Teng, 2004) .....	64
	Appendix 2 – Questionnaire .....	68

## List of Figures

Figure 1: Bill of Materials (%) spend in low cost countries .....	13
Figure 2: Suppliers representing 80% of purchasing spend.....	13
Figure 3: Creating value sourcing with the suppliers (Source: Philips Healthcare) .....	14
Figure 4: Creating value engineering with suppliers (Source: Philips Healthcare) .....	14
Figure 5: Layout of the study .....	19
Figure 6: Antecedents, dimension/components, and consequences of trust (adapted from Seppänen et al. 2007) .....	21
Figure 7: Evolutionary phases of trust (Curral & Inkpen, 2006) .....	22
Figure 8: The relational portfolio (Bensaou, 1999).....	25
Figure 9: Buyer-supplier power (Kralijk, 1983) .....	26
Figure 10: Research model .....	39

## List of Tables

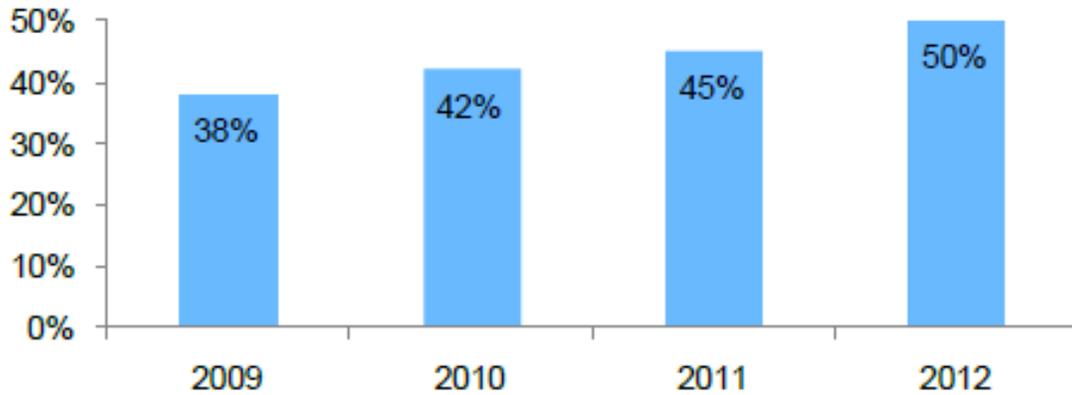
Table 1 - Means and standard deviations.....	46
Table 2 - Correlation matrix.....	47
Table 3 - Results of the regression.....	47
Table 4 - Other findings.....	48

## 1. Project Context and Research Design

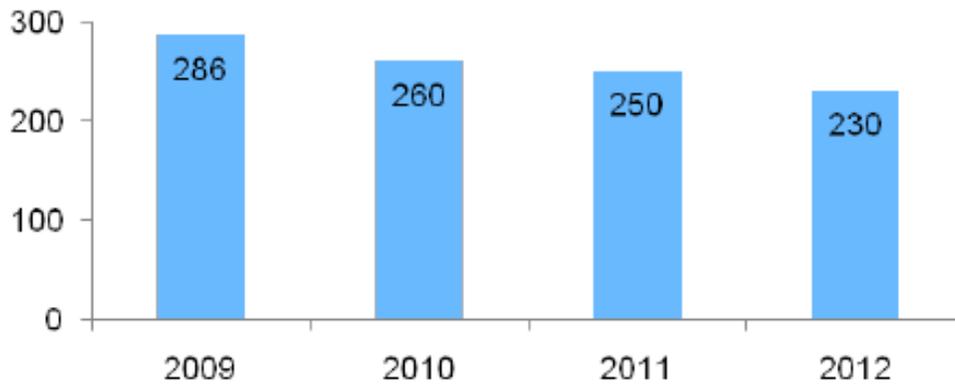
This thesis which is titled '*Impact of the buyer's trustworthiness on Transaction Cost and Buyer Performance*' has been conducted as a master thesis in Innovation Management at the Eindhoven University of Technology. The research was done with the collaboration of Imaging Systems Operation Purchasing of Philips Healthcare (PH) located in Best, Netherlands. This chapter will give a short introduction about inter-organizational relationships, trust, transaction costs, information sharing, and asset specificity as well as a brief resume about the company, Royal Philips.

### 1.1 Background

Philips Healthcare (PH) is a global leader in imaging systems, home healthcare solutions, and clinical care system and healthcare informatics. PH focuses on addressing the evolving needs of the healthcare market by developing meaningful innovations that contribute to better healthcare, at lower cost, around the world. To continue being the leader, Philips' Global Operations and Supply Chain (GOSC) have identified the following as the key business at PH Purchasing: First, the continuity to drive operational excellence, expanding its margins and improving quality, and second, driving an emerging market growth. This is being done through the supply base optimization which has, as a strategic priority; to drive costs improvement throughout strategic supplier consolidation, enhance innovation from suppliers, increase low cost countries sourcing, and value engineering. For example, PH increases its cost reduction by increasing the percentage of Bill of Materials (BOM) savings (Figure 1) and by reducing the number of suppliers representing the 80% of purchasing spends (Figure 2).



**Figure 1: Bill of Materials (%) spend in low cost countries**



**Figure 2: Suppliers representing 80% of purchasing spend**

Beside the mentioned two points, PH is increasingly interested in creating value sourcing and value engineering with its suppliers. Value sourcing leverages supply markets to stimulate innovation (using traditional and new suppliers, see Figure 3) and value engineering creates the biggest impact at the interface between marketing and development (Figure 4).

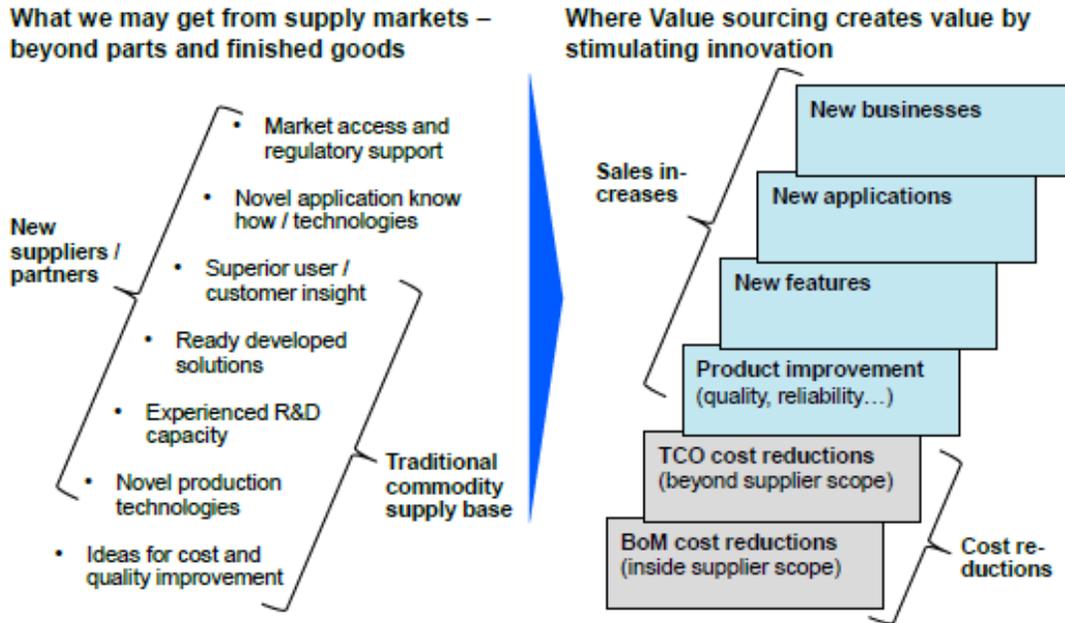


Figure 3: Creating value sourcing with the suppliers (Source: Philips Healthcare)

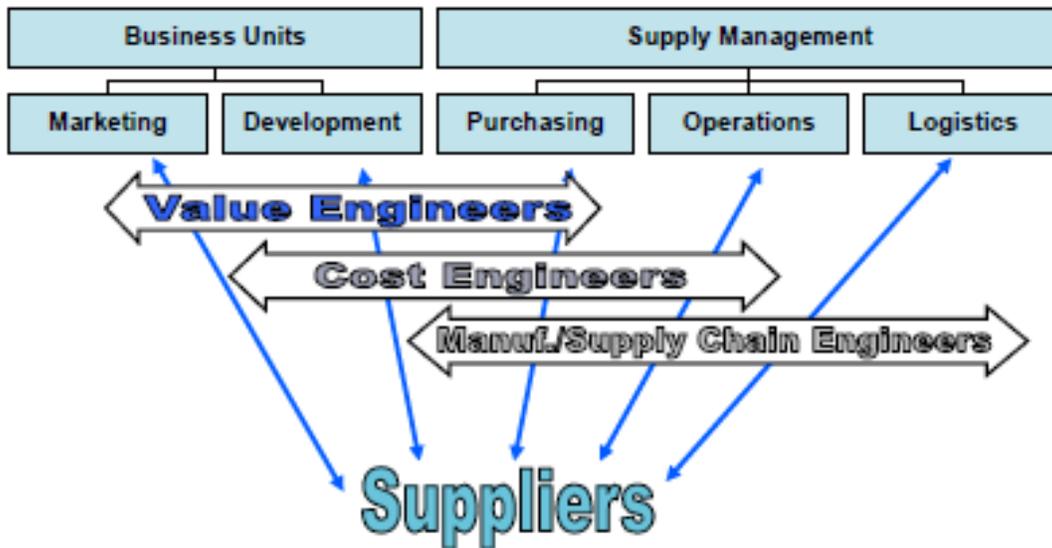


Figure 4: Creating value engineering with suppliers (Source: Philips Healthcare)

Value creation often requires a different way of thinking and is based on a systematic approach to come to lower costs. PH expects suppliers to also adopt this methodology for lowering costs on their sides which will lead to the following:

- Access to innovation, cost reduction technologies
- Adopt the mindset of open innovation; bring new technologies
- Establish joint technology roadmaps
- Invest in value engineering efforts with their business
- Work collaboratively with PH to implement with ‘speed’

As is illustrated above, it is PH’s strategy to reduce costs but at the same time incentivize suppliers to generate transactional value. However, theoretical debates and empirical studies have shown incompatibility between these two approaches. A single-party cost minimization ignores the interdependence between exchange partners in the search of joint value (Zajac and Olsen, 1993). Additionally, in order to improve value creation and its transfer in a dyad relationship, it is not enough to optimize and coordinate management and control systems (Hald et al. 2009). It should be necessary to include the expected perception of trust and expected perception of dependence of the parties’ concerned (Hald et al. 2009). In this manner, both parties will improve their performance (Dwyer et al. 1987).

## 1.2 Problem Statement

For decades, researchers have conducted studies in different disciplines to understand the benefits of close buyer-suppliers relationships and the different strategies used to reach positive business results. Some researchers have shown negative outcomes as a result of opportunistic behaviour and the abuse of power. Economists pointed to opportunism as the key factor that destabilizes close relationships between organizations (Williamson, 1981). Marketing researchers estimated that partners grow increasingly dissatisfied as the relationships continue (Anderson and Jap, 2005). Strategic management researches on joint venture posit that partners initially depend highly on each other. Over time, as each party learns what the other knows, the relationship becomes unstable and vulnerable (Carral and Inkpen, 2006).

Buyer-seller relationships can be analysed from different theoretical perspectives. One perspective that has gained significant popularity over time is the transaction cost theory.

According to Williamson (1975) the transaction cost perspective is based on two human factors (bounded rationality and opportunism) and two environmental factors (uncertainty and asset specificity). *Bounded rationality* refers to the fact that people have limited cognitive processing

power. No matter how knowledgeable they might be, they cannot consider all the possible alternative courses of action (Hennart, 2008). *Opportunism* refers to the possibility that people will act in a self-interested way. That is, people may not be entirely honest and truthful about their intentions, or they may attempt to take advantage of unforeseen circumstances that gives them the chance to exploit another party (Hennart, 2008). The third factor, uncertainty, refers to the difficulty to foresee the eventualities that might occur during the course of the transaction (Heide and John 1990). Uncertainty might cause problems because of bounded rationality (it is not possible to forecast all possible eventualities), because of information asymmetries, and also because of the danger of opportunism. Lastly, asset specificity refers to the investments an exchange partner makes. They are highly specialized and cannot be easily redeployed (Dyer and Chu, 2003). Asset specificity acts as a safeguard against opportunism and uncertainty, however, increases dependence of one party on the other (Bensaou, 1999)

Williamson (1975) divided the transaction costs into *ex ante* transaction costs (search and contracting costs) and *ex post* transaction costs (monitoring and enforcement costs). *Search and transaction costs* incorporate the costs of selecting a desirable trading partner and then negotiating and writing mutually acceptable agreements. *Monitoring and enforcement transaction costs* imply the costs associated with monitoring the agreement and then taking the actions necessary to ensure that each party fulfils the predetermined set of obligations (Dyer and Chu, 2003). Despite the fact that some economists exclude the possibility that trust plays a role in business relationships, it is proposed that trust reduces transaction costs, increases communication skills, and, therefore, improves the company's performance. Trust itself is also assumed to be created by the ongoing social exchange process (self interest/mutual attraction) aimed to enhance both parties' performance (Dwyer et al. 1987). Beside this, social exchange influences the distribution of dependence and power in the relationship (Hald et al. 2009).

The critical transactional issue for business relations is not a single organization's concern for minimizing its transaction costs, but rather, both organizations' concern for also: firstly, knowing the partner's preferences and concerns as a basis for exchange and mutual gain, and secondly, discovering ways in which similarities or shared interest can be exploited to maximize co-operative joint gains that increase to both parties (Zajac and Olsen 1993).

This thesis could provide PH a suppliers' view about transaction costs as well as value creation, trust, and dependence. As explained in section 1.1, at PH, this topic has high relevance since its global policy and its strategies have been changing in the last years. PH is focusing on reducing costs but is at the same time incentivizing suppliers to create value. Therefore, the objective of this study is to evaluate the buyer's trustworthiness in buyer-supplier relationships and its effects on transaction costs and firm performance. The main question of this study is:

*“Does buyer trustworthiness help to reduce transaction costs and contribute to the firm's performance?”*

In order to answer the research question we divided it into three sub questions:

- What is the difference between a trust relationship and a trustworthy party?
- How to gain trust?
- What are the benefits of trust in buyer-supplier relationships?

### **1.3 Company Description**

Royal Philips was founded in 1891 by Anton and Gerard Philips to manufacture incandescent lamps and other electrical products. Nowadays, Philips has 127 production sites around the world and a workforce of 115.924 full time employees divided in its three business sectors: Consumer Lifestyle, Lighting, and Healthcare. Beside its “sense and simplicity” brand promise, Philips brand value was estimated at more than 8.1 billions of USD. Philips had €23.2 billions of sales in 2009.

#### **Philips Healthcare**

Philips started its medical activities in 1918 with its introduction of the medical X-ray tube. Nowadays, Philips Healthcare (PH) has a workforce of more than 34.000 employees and had €7.8 billion sales in 2009 distributed across its five business units (Clinical Care Systems and Healthcare Informatics were merged in 2010):

- Imaging Systems (IS): X-ray, computed tomography (CT), magnetic resonance (MR), and nuclear medicine (NM).
- Clinical Care Systems: ultrasound imaging, hospital respiratory systems, cardiac care systems, children's medical ventures.

- Healthcare Informatics: healthcare informatics, patient monitoring systems, and management.
- Home Healthcare Solutions: sleep management and respiratory care, medical alert services, remote cardiac services, and remote patient management.
- Customer Services: consultancy, clinical services, education, equipment financing, asset management and equipment maintenance and repair.

## **IS OPS Purchasing**

The research was conducted at PH Best, in the Imaging System (IS) Operations Purchasing department. This department is responsible for finding and contracting the suppliers who deliver specific commodities to the X-ray and MR manufacturing units. Additionally, it supports other divisions in case they do not reach an agreement with the provider about logistic or administrative conditions for example. This is what the Supplier Account Managers (SAMs) do. Then, the SAMs are responsible for managing the daily relations with the suppliers. He or she coordinates activities such as; searching for a new supplier, negotiation, contracting, monitoring, and enforcement of the relationship. The SAM also works as a mediator between the production business units and the suppliers in case of problems such as time delivery, quality, etc.

### **1.4 Intermediate Conclusion**

In this chapter a short review of Royal Philips was done and the problem statement, subject of this study, announced. To continue being the leader in the market, Royal Philips GOSC has as a policy the continuity to drive operational excellence, expand its margins, improve quality, and draw emerging market growth. This is being done through the supply base optimization. The main objective is incentivizes suppliers to reduce costs and generate transactional value. To reach its goals, Royal Philips should evaluate its trustworthy image in the supplier community. The research was made in Philips Healthcare in the IS OPS Purchasing Department in the city of Best and evaluated the buyer trustworthiness, from suppliers' perspective, and its effect on transaction costs and business performance.

## 1.5 Scope and Limitations

There are certain limitations to the scope of this study. The focus is on relationships between a buyer and its suppliers. Consequently, intra-organizational trust relations and inter-personal trust are left aside. Moreover, buyer-supplier relationships are considered to be collaborative entities.

## 1.6 Thesis Organization

Figure 5 shows the layout of this study.

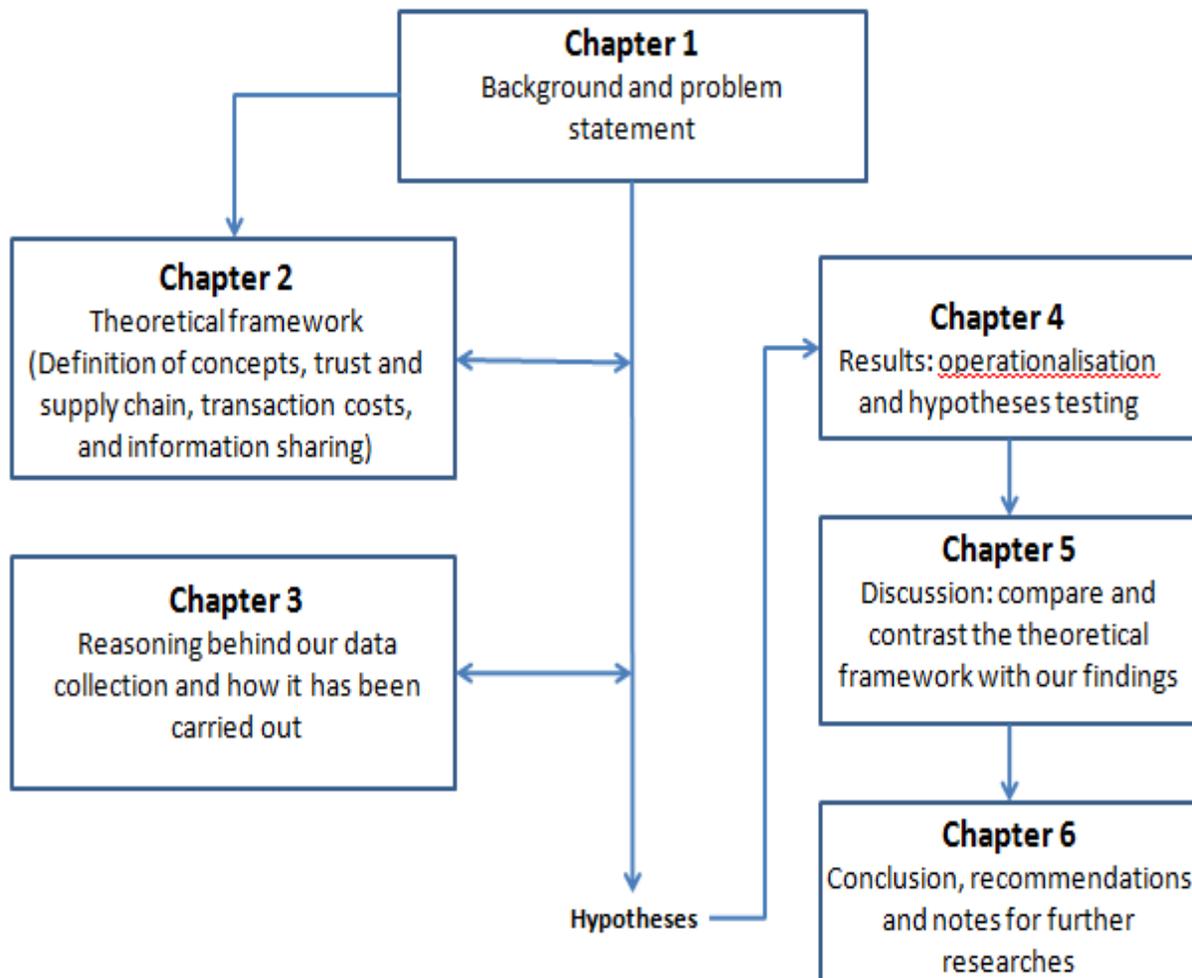


Figure 5: Layout of the study

## **2. Theoretical Background**

### **2.1 Definition of concepts**

#### **2.1.1 Trust**

How to define organizational trust is a problem faced by most of the researchers interested in inter-organizational relationships. For instance, Bachmann and Zaheer (2008) wrote that despite the attention many researchers have given to defining it in the past 15 years, considerable theoretical debates remain concerning the role and value of trust in relationships between business partners. Most of the controversies are mainly due to the conflicting assumptions and premises of different disciplinary approaches within the business and management literature (Bachmann and Zaheer, 2008); which have led to confusion and misunderstanding (Noteboom, 2006). A synopsis made by Das and Teng (2004) of the different definitions of trust can be seen in Appendix 1. In these definitions, some common concepts are found such as mutual confidence, positive expectations, willingness, uncertainty, vulnerability, opportunism and risk.

Although all the definitions summarized by Das and Teng (2004), the most related to inter-organizational exchange are those made by Rotter (1967), Zucker (1986), Barney and Hansen (1994), Hosmer (1995), and Mayer et al. (1995). Vulnerability and opportunism seem to be the more mentioned terms in relation with trust. Dyer and Chu (2003 p. 58) defined trust as “one party’s confidence that the other party in the exchange relationship will not exploit its vulnerabilities”. This definition did not differ much from that made by Michalos (1990), Sabel (1993), and Barney and Hansen (1994). In relation to opportunism, Noteboom (2006 p. 252) stated trust as “the expectation that a partner will not engage in opportunistic behaviour, even in the face of opportunities and incentives for opportunism”. Hence, opportunism is also mentioned by Bradach and Eccles (1989) and Cummings and Bromiley (1996). Opportunism is behavioural uncertainty (Williamson, 1985) where some people may occasionally or strategically mislead. Moreover, opportunism and asset specificity typically increase the likelihood and difficulty of negotiation which results in higher transaction costs. Therefore, the definition of trust used in the continuation of this research will be the one made by Noteboom (2006, p. 252).

Trust is “the expectation that a partner will not engage in opportunistic behaviour, even in the face of opportunities and incentives for opportunism”.

**2.1.1.1 Trust as a reciprocal concept**

Trust seems to have some properties that make studying it harder. In their empirical research covering studies on inter-organizational trust from 1990 to 2003 (see figure 6), Seppänen et al. (2007) found that trust is a reciprocal concept. For instance, the interrelationships between trust and information sharing and trust and cooperation have both been suggested to be reciprocal. This causality could be seen as one of the reasons for the ambiguity and confusion in defining the antecedents, dimensions, and consequences of trust (Seppänen et al, 2007). Intentionality, past behaviour, information sharing, and transaction costs are remarked. These concepts have direct influence in our research.

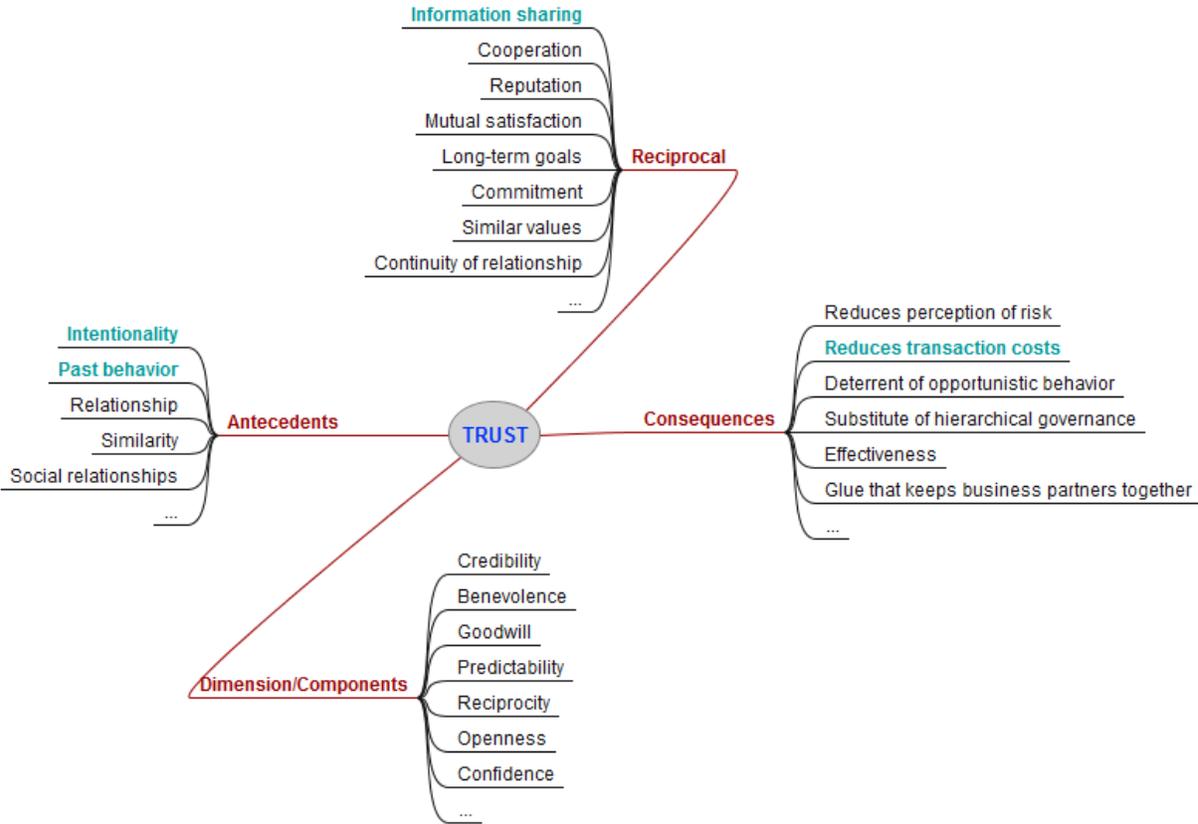


Figure 6: Antecedents, dimension/components, and consequences of trust (adapted from Seppänen et al. 2007)

### 2.1.1.2 How to Gain, Build, and Maintain Trust

Much of the interaction of trust at the interpersonal, intergroup, and inter-organizational level takes place during the development of trust. Figure 7 shows the evolutionary phases of trust proposed by Currall & Inkpen, (2006). Trust starts at point zero with neither trust nor distrust because of the parties' lack of information about the trustworthiness of their counterpart. In the building trust phase, development of trust is slow and incremental because parties tend to be reserved about trusting. Over time, when trust-building actions are taken, the level of trust grows until it begins to level off (maintaining trust phase). In this phase, the level of trust remains almost constant if neither party takes actions that erode trust. Under trust-violating events, the overall level of trust drops into the destroyed trust phase. Enormous efforts are then simply required to return to the zero point and even further efforts are then required to move into the positive trust domain.

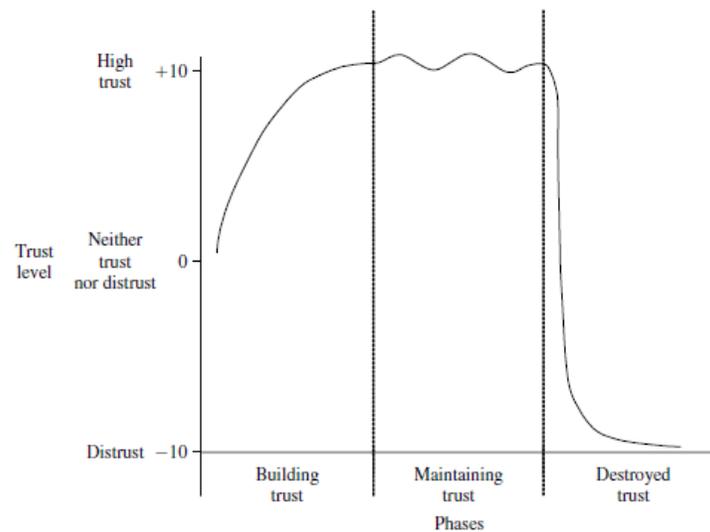


Figure 7: Evolutionary phases of trust (Currall & Inkpen, 2006)

### 2.1.2 Trustworthiness

Hardin (2002) reported that trustworthiness has been rarely mentioned in the literature on trust, in spite of the fact that much of those works were about trustworthiness and not about trust. He defined trustworthiness as “the capacity to judge one’s interest as dependent on doing what one is trusted to do” (p. 28). Most of the authors define trustworthiness in function of the definition of trust (Barney and Hansen, 1994). Hereby, an exchange partner is trustworthy when he is worthy of the trust of others. An exchange partner worthy of trust is someone, who will not take advantage of the vulnerability of the other party. Barney and Hansen (1994) noticed that while trust is an attribute of a relationship between exchange partners, trustworthiness is an attribute of individual exchange partners. Banerjee et al. (2006) stated that trust and trustworthiness are not simple descriptive terms but normative concepts (ethical or moral). Norms for behaviour can be effective because they directly motivate us through our commitment to them or because they indirectly motivate us through the force of social sanctions (rewards and penalties) that back up the norms. Banerjee et al. (2006) defined trustworthiness (p.304) as “meriting confidence for proved soundness, integrity, veracity, judgment, or ability”. They state two types of qualities: objective (soundness and ability) and subjective (integrity, veracity and judgment). Objective quality was referred to as being the solvency of a company to pay its bills or not. Therefore, trust can be based solely on facts. As a result of its actions, companies build a reputation. If a company cannot pay its bills, the company will develop a negative reputation amongst the business community. In the same way, if a firm has met its obligations, it is rewarded with a positive reputation which leads to higher level of social status and power. Reputation becomes both objective and subjective through the use of interactions and speculations. Subjective quality was more relevant from the ethical perspective and was a function of the dynamics of the trust relationship. Values act as a road map in making decisions. Both sets of quality are abiding and contextual-independent to the trusted party’s objective qualities (Banerjee et al. 2006).

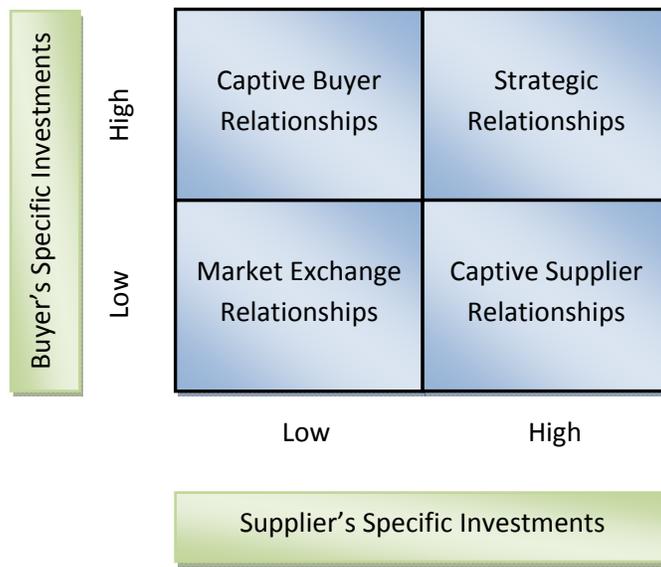
As Hardin (2002) explained, trustworthiness is constrained by social conventions (moral rules – reward and penalties) and organizational incentives (commitment, expectations). Strong norms are likely to be embedded in close communities that mobilize commitments to their norms with such sanctions as a shunning and exclusions and the expectation of trust provides the basis for a trust action through the trustor’s subjective perception of the trustee’s motivation (perceived self-interests) to correspond to the trustor interest. The author concluded that strong forms of

trustworthy exchange partners help to discover other trustworthy exchange partners that increase competitive advantage (economic actors) from working with each other. Hardin (2002, p.25) called this “trust as encapsulated interest”. That is, the trusted party has incentive to be trustworthy, incentive that is grounded in the value of maintaining the relationship into the future because of the value of the relationships. This is what Coleman (1990) called social capital. According to him, social capital is the resource you can mobilize through others and the way in which your connections to others facilitate achieving one’s goals.

### **2.1.3 Asset Specificity**

Transaction cost theory (Williamson, 1985) states that market transactions involving high specialized assets cause relational dependency among partners, which can yield high transaction costs if any of the partners pursues its own self interest at the expense of the others (opportunism). Specific investments such as capital equipment, dedicated human resources or specialized information systems can make it difficult for an unsatisfied party to walk away (Heide and John, 1990). Williamson (1985) defined assets specificity as durable investments that are undertaken in support of particular transactions. Then, transactions with high asset specificity bring both parties into the same hierarchy and may offer greater efficiency than a comparable market transaction.

Asset specificity has been used as a control variable for the vulnerability of the supplier with regard to transaction-specific investments (Dyer and Chu, 2003). These investments influence the dyadic governance structure (framework of negotiation, contracting, execution, and monitoring) by requiring safeguards against appropriation of the associated rents (Zaheer et al. 1998) and enforcing contractual coordination throughout symmetrical investments (Buvik and Haugland, 2005). From the supplier perspective, Heide and John (1990) found that investments in specific asset increase the expectation of continuity and collaboration. Asset specificity increases switching costs and makes it possible for the more dominant party to exploit the less dominant one.



**Figure 8: The relational portfolio (Bensaou, 1999)**

Bensaou (1999) discovered that the level of specific investments made by the partners significantly correlates with practices commonly associated with strategic partnerships, such as long-term relations, mutual trust, and cooperation. He classified the buyer-supplier relationships in terms of the intensity and symmetry of the relationship-specific investments (see figure 8). In the “strategic partnership” cell, both parties have posted highly idiosyncratic assets into the relationship. The “market exchange” cell represents the cluster of relationships in which neither of the parties has developed specialized assets; they can work together using general-purpose assets. The “captive buyer” cell refers to those asymmetric relationships in which the buyer is held hostage by a supplier free to switch to another customer. Finally, in the “captive supplier” relationships, the supplier enters the trap of unilaterally making idiosyncratic investments to win and keep the business with the customer. Bensaou (1999) found a strong association of specific investments with strategic partnership involving mutual trust and long-term relationship.

#### 2.1.4 Power and Dependence

Power and dependence are terms inversely related. Thus, power fundamentally resides in the dependence of one actor on another. Party A’s power over B is determined by B’s dependence on A for valued resources. B’s dependence on A is high when there are limited alternative resources to those valued resources (Dwyer et al. 1987). Power emerges from having resources

that the other party needs and additionally from controlling the alternative source of those resources. Dwyer et al. (1987) stated that power results from the ability to achieve intended effects or goals. Having relative power over its dependent partner, makes it likely to use that power to achieve the partner’s cooperation and to obtain valuable outcomes (Gelderman, 2003). Handfield and Bechtel (2002) found the perception of dependence an important dimension of buyer-suppliers relationships. Power, in buyer-suppliers relationships, is measured as the difference between supplier’s dependence and buyer’s dependence. Gelderman (2003) distinguished between interdependency asymmetry (relative power) and total interdependence (total power). *Interdependency asymmetry* is the difference between two partner’s levels of dependence. These kind of buyer-supplier relationships lead to unproductive partnerships, attempts to exploitation, and attrition of the weaker party in long-term business relationship (Gelderman, 2003). *Total interdependence* refers “to the intensity of a relationship” (p.119). A high level of total interdependence is associated with cooperative long-term relationship as a result of mutual investments. These kinds of relationships are characterized by mutual trust and mutual commitment, desire to continue the relationship, and motivation to keep the partnership (Gelderman, 2003). Dependence has shown a positive effect on vulnerability in one of the parties involved in the business relationship (Mudambi and Helper, 1998).

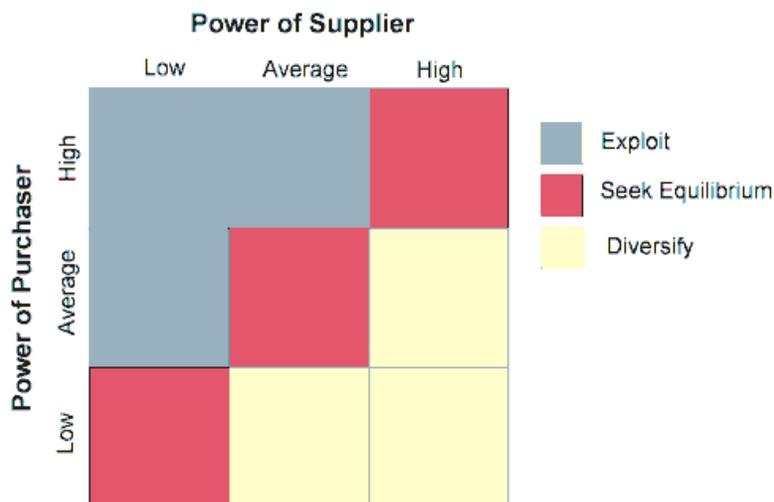


Figure 9: Buyer-supplier power (Kralijk, 1983)

Kralijc (1983) evaluated the buyer and supplier power (figure 9) throughout the classification of the products or materials identified as “strategic” in the purchasing classification matrix. The

purpose of this analysis is to identify strategic items, the relative power position of the company, and the balance of power in the buyer-supplier relationship. The matrix identifies areas of opportunity, vulnerability, assess supply risk, and derive strategic trust for those items. The “exploit” cell represents the buyer market dominance. Positive profit can be reached “through favourable pricing and contract agreements” (p. 113). “Diversify” represents the supply power over the buyer. In this case, the buyer should start looking for material substitutes or new suppliers. The “balance” cell represents equilibrium where items do not represent risks or benefits for both parties.

## 2.2 Role of Trust in Supply Chain Relationships

In the academic literature numerous empirical studies have been done and different theories have been proposed to get a better understanding of the inter-organizational relations and the way this relation can be managed. Dwyer et al. (1987) considered that firms engage in cooperative buyer-supplier relationships because the firms expect to benefit from the relationships. Only as long as the firms perceive a benefit from the relationship, they continue the cooperative buyer-supplier relationship. Theories such as the co-evolution theory, the resource dependency theory, theories of power, political economy and political science, exchange theory, transaction costs economics, agency theory, self organizational theory, and institutional theory have been subject of study by researchers from different disciplines (Hibbert et al. 2008). In this study, attention is given to the transaction costs theory and the resource dependency theory.

Researchers have been using the transaction costs approach (Williamson, 1975, 1985) to understand the form, functions and effectiveness of inter-organizational strategies (e.g. Barney & Hansen, 1994, Zaheer et al. 1998, Dyer and Chu, 2003, Hald et al. 2009). Williamson (1981) stated two human behavioural assumptions on which the transaction cost theory relies: “the recognition that human agents are subject to bounded rationality” and “the assumption that at least some human agents are given to opportunism (p. 553)”. *Bounded rationality* refers to the fact that people have limited cognitive processing power. No matter how knowledgeable they might be, they cannot consider all the possible alternative courses of action. *Opportunism* refers to the possibility that people will act in a self-interested way. That is, people may not be entirely honest and truthful about their intentions, or they may attempt to take advantage of unforeseen circumstances that gives them the chance to exploit another party (Hennart, 2008). According to

the transaction cost theory, those assumptions generate uncertainty in the future of the business relationships. Legal contracts and specific investments are governance mechanisms that safeguard business relationships against vulnerability, uncertainty, and opportunism. Economists describe relationships in general as being calculative rather than based on trust (Bachmann and Zaheer, 2008).

Contrary to the economist's view of trust, most of the researches link trust with positive inter-organization relationships results. Trust not only influences organizations from a structural perspective, enduring interaction partnership between organizations; it also from a mobilizing perspective motivates actors to contribute, combine, and coordinate resources toward collective activities (McEvily et al. 2003). Some benefits of trust in buyer-supplier relationships are; superior information sharing, better coordination, joint efforts to minimize inefficiencies, and encourages suppliers' involvement in product development (Monczka et al. 1998, Heide and John, 1990, Wynstra et al. 2001). In their research using data from 107 buyer-suppliers in the equipment manufacturing industry, Zaheer et al. (1998) found trust the most important driver of exchange performance, negotiation, and conflict resolution. Moreover, trust provides the conditions under which cooperation, high performance, and/or more positive attitudes and perceptions are likely to occur (Dirks and Ferrin, 2001). Hill et al. (2009) defined trust as the firm's dependence to other entities with which is it voluntarily engaged, and which will protect its rights and interests. Hence, trust acts as a safeguard to protect specific investments, increases supplier's responsiveness, and prevents effects of psychological contract violation (Handfiel and Bechtel, 2002, Hill et al. 2009).

Other authors have based their researches on the resource dependency theory. This theory focuses on the interdependence of an organization with other organizations in its environment (Huxhan and Beech, 2008, Cai et al. 2008). As explained, in chapter 3.1.3 and 3.1.4, asymmetric investments could generate power unbalance in the dyad relationship (captive buyer or captive supplier relationships). Organizations depend on reliable input and output resources to fulfil their goals. Vertical integration facilitates firms to gain technological capabilities difficult to obtain from arm-length market relationship (Cai et al. 2008, Liu et al. 2010). In long-term relations, non-coercive power inspires partners to work together for their common interests enhancing mutual communication and understanding, reducing conflicts, and increasing satisfaction and

willingness to engage in further cooperation (Liu et al. 2010). Interdependence, trust and coordination are attributes required by organizations to be successful (Monczka et al. 1998). Williamson (1981) stated that the resource-dependence theory makes reference to efficiency but “more often relies on power in explaining organizational outcomes” (p.572). The theory argued that organizational power could potentially be gained from transactions with external actors and conversely, the latter could create external constraints on organizations. These constraints would limit the autonomy of an organization and thus affect its profitability (Huxhan and Beech, 2008).

Cai et al. (2008), in their study of quasi-integration governance mechanisms based on transaction cost theory and resource dependency theory, found legal contracts an important foundation of joint problem solving. Furthermore, they found legal contracts, joint planning, and collaborative communication positively related to the supplier’s performance, while joint problem solving and cooperative communication significantly enhance the buyer’s commitment to the relationship. On the other hand, Anderson and Jap (2005) stated that close buyer-suppliers relations are not synonymous with good relations. They noted that close relationships that seem the most stable can also be the most vulnerable to decline and destruction (dark side phenomenon of close relationships). In the U.S. automotive industry, some buyers had taken advantage of the competitive weakness of their suppliers (Mudambi and Helper, 1998).

### **2.3 Trust and transaction costs**

Trust is of most economic value when it is based on non-contractual, rather than contractual mechanisms (Dyer & Chu 2003). Some mechanisms have direct effect on financial results such as cost reduction and time compression; others can have indirect effect such as competency development, innovation, and supplier’s involvement in new products (Hald et al. 2009, Panayides et al. 2009). According to Dyer and Chu (2003), trust eliminates the need for formal contracts, which are costly to write, monitor, and enforce. Moreover, under conditions of high inter-organizational trust, costs of negotiation are less costly because agreements are reached more quickly and easily (Zaheer et al. 1998).

A popular assertion in the academy of managerial studies is that the firm with lower production costs and lower transaction costs will win in the marketplace. Transaction cost theory (Williamson, 1975, 1985) proclaims that the relative attractiveness of each governance mechanism is based on its differential ability to minimize transaction costs. Handfield and

Bechtel (2004) in their longitudinal study stated trust as the most valuable economic asset because trust decreases transaction costs and increases flexibility. Dyer and Chu (2003) cited that transaction costs represent between 35-40% of the costs associated with economic activities, and what they call interactions (searching, coordinating, and monitoring that people and firms do when they exchange good services or ideas) account for over a third of economic activity in the United States. Transaction costs involve all the costs associated with conducting exchanges between firms: search, negotiation, and contracting costs (ex ante transaction costs), and monitoring and enforcement costs (ex post transaction costs).

According to Dyer and Chu (2003), under mutual buyer-supplier trust, the parties will spend less time on ex ante contracting because they trust that Payoffs will be fairly divided. As a result, the transactors do not have to plan for all future contingencies because they are confident that equitable adjustments will be made as market conditions change. Then, trust reduces the inclination to guard against opportunistic behaviour (Dyer and Chu, 2003). Additionally, negotiations are less costly because agreements are reached more quickly (Zaheer et al. 1998). Related to ex post transaction costs, again under condition of high trust, trading partners will spend less time and resources on monitoring how the other party is performing (opportunistic behaviour) and less time and resources spent on bargaining and haggling over problems that arise in the transaction period (Dyer and Chu, 2003). In long-term partners' relationships, high level of inter-organizational trust helps to give each other the benefit of doubt and firms are less inclined to rely on elaborate safeguards for specifying, monitoring and enforcement agreements (Zaheer et al. 1998). Despite the fact that trust eliminates the need for formal contracts, Cai et al. (2008) found legal contracts as a mechanism required for maintaining and promoting an effective buyer-supplier relationship.

## **2.4 Trust and Information Sharing**

In the presence of a high level of trust, information sharing has shown to have a positive impact on the generation of innovative ideas (Monczka et al. 1998; Jhonsen, 2009) new product development (Wynstra et al. 2001, Kotabe et al. 2003, Petersen et al. 2003), process improvement (Dyer and Singh, 1998), inventory reduction and cost reduction (Lee et al. 2000). Dyer and Chu (2003) stressed the high value of information sharing as a valuable resource due to product complexity and industrial uncertainty. Suppliers may be unwilling to share information,

e.g. on production or design problems, if they do not trust the buyer to work in a cooperative way in joint problem solving. Wynstra et al. (2001) indicated that a lack of trust between buyer and supplier can result in less effective and less efficient communication and collaboration. Then, if the supplier trusts the buyer not to behave opportunistically, it will be more willing to share confidential information concerning product design, production costs, and process and product innovation.

## **2.5 Intermediate Conclusion**

Trust avoids uncertainty and vulnerability throughout open communication channels. It is also clear that buyers and suppliers have different incentives for developing close relationships. By working together, under trust, both firms gain new competences that are not easy for competitors to copy. Buyer-suppliers trust has shown a positive effect on information sharing, assets specificity, and transaction costs (ex ante and ex post transaction costs). All of these together have a positive effect on the company's performance.

Additionally, trust, trustworthiness, power and dependence are related concepts in buyer-suppliers relationships. Trust is frequently referred to as a safeguard against uncertainty, opportunism, and vulnerability. However, trust is generally associated with a long-term rather than a short term business relationship. Power and dependence are concepts inversely associated. Additionally, there is a difference between interdependency asymmetry (relative power) and total interdependence (total power). Total power is associated with cooperative long-term relationships, mutual trust and mutual commitment.

Finally, the Bensaou's model did not differ much from the Kralijk's portfolio matrix in terms of power, dependence, and trust. For instance, the "captive buyer" quadrant represents buyers with high specific investments to produce technically complex products. Contrarily, the supplier has strong bargaining power and proprietary technology which makes it less dependent. Because the lack of trust and power differences, the buyer's purchasing agents and engineers have to spend a large amount of time in mutual and frequent visits. Moreover, the difference in power increases the buyer's vulnerability and reduces cooperation and communication, which is only limited to the transactions. To conclude, high specific investments made by both parties (strategic partnership) represent the ideal business partnership, characterized by mutual trust, cooperation and communication.

### **3. Methodology**

So far, this study has presented the relevant theoretical background surrounding this research. Some hypotheses have been postulated based on the research made by Dyer and Chu (2003). The purpose of this chapter is to describe the development of the empirical research in order to test the proposed hypotheses. First, the research setup is presented. Next, the development of the questionnaire, the sample choice, and response rate is described. Finally, the tools employed to analyze the data is explained.

#### **3.1 Types of Research**

According to Yin (2003) there are three types of research, namely; exploratory, descriptive, and explanatory. He stated that exploratory research intends to define the questions and hypotheses of a theory, or it is aimed at determining the feasibility of the desired research procedures. In other words, it is designed to generate basic knowledge, clarify relevant issues, uncover variables associated with problems, uncover information needs, and/or define alternatives for addressing research objectives. The second approach, descriptive research (statistical), aims at presenting a complete description of a phenomenon within its context, or to estimate the proposition of a population that has a defined set of characteristics. This design provides further insight into the research problem by describing the variables of interest and examining associative relationships. The last type of research, explanatory (causal), is applied when investigating cause-effect relationships between variables is the main aim.

This thesis intends getting an understanding of the buyer-suppliers relationships throughout the examination of the different variables involved. Therefore, the type followed in this thesis is a descriptive research.

Conducting a survey investigation is often the best approach. Qualitative research often has the aim of description and researchers may follow-up with examinations of why the observation exists and what the implication of the findings are.

### **3.2 Reliability and Validity**

Yin (2003) differentiates between four design tests in empirical research, namely: construct validity, internal validity, external validity, and reliability. In this section, these topics are considered to improve validity and reliability.

#### ***Reliability***

A research is reliable when the methodology used can be repeated with the same results (Yin, 2003). The goal of reliability is to reduce errors and bias in the research. In other words, high reliability means, that when another researcher replicates the case study, similar findings would result. This study followed the parameters of the research made by Dyer and Chu (2003). Then, after the results of this study are found, our findings will be compared with the findings of Dyer and Chu (2003) to verify its replication.

#### ***Construct validity***

Construct validity refers to establishing correct operational measures for the concepts being investigated (Yin, 2003). One manner to improve this type of validity is to use multiple sources. As explained earlier (see section 4.2), this study has used three sources; namely a survey questionnaire, scientific related literature, and a personal interview.

#### ***Internal validity***

Internal validity refers to creating a causal relationship, whereby certain conditions are shown to lead to other conditions to preserve the research from spurious relationships (Yin, 2003). This type of validity is only appropriate for exploratory research, and not for exploratory or descriptive researches. Because this is a descriptive research, the internal validity will not be further discussed.

#### ***External validity***

External validity refers to creating the domain to which the findings of a research can be generalized (Yin, 2003). As this is a replication of a research made by Dyer and Chu (2003), it can support the external validity. The early findings are tested in a different company (PH) from the original research.

### **3.3 Research Setup**

The method used to collect data is based on a survey questionnaire, the use of existing literature, and personal interviews. A survey is a proper way to find out the characteristics, behaviours, or opinions of a particular population. A sample survey is applied to gather information on a large group of suppliers by interviewing only a small part of the group (Salant and Dillman, 1994). The survey questionnaire is a replication of the study made by Dyer and Chu (2003). The questionnaire was aimed at finding out the level of trust which suppliers had in the buyer (PH), the disposition they had to share confidential information, and the willingness, which the supplier had to invest in specific assets dedicated to PH. The questionnaire is based on the method used by Dyer and Chu (2003).

The second methodology applied was the literature for the conceptual framework. A literature review was conducted to gain insight in buyer-supplier relationships, trust, information sharing, and asset specificity (see chapter 3). The literature was used to understand the attraction of inter-organizational relationships to engage in business partnership, the influence of trust as a governance mechanism to facilitate transactions, avoid misunderstandings and reduce transaction costs. Additionally, the literature served to understand the benefits of open communication channels, and the benefits and disadvantages of investments in customized asset specificity. All this helped to support the hypotheses that were evaluated.

The third source of information was a personal interview conducted with the SAMs. They selected the list of the suppliers to be interviewed based on the amount of transactions they had done during 2009 and the prospects of the business relationships for the coming years. In addition to this, a short conversation was held during this general interview about the understanding and importance of the terms used in this study such as trust, asset specificity, ex ante and ex post TC.

### **3.4 Hypotheses**

In order to answer the main question, six hypotheses have been formulated. The first two are related to trust and its effect on transaction costs, the third refers to the influence of trust on information sharing, hypothesis four evaluates the relation between trust and specific assets,

number five and six evaluate the effect of information sharing and specific assets on transaction costs respectively.

Transaction costs involve costs incurred by firms when making an economic exchange such as search and contracting transaction costs (ex ante) and monitoring and enforcement transaction costs (ex post) (Dyer and Chu, 2003). Ex ante transaction costs, include costs incurred when searching a new business partner, bargaining costs reaching an acceptable agreement with the other party and drawing up an appropriate contract. It is hypothesized that when trust is present in a buyer-seller relationship, less time is required to reach an agreement and for negotiation (Dyer and Chu, 2003; Zaheer et al. 1998):

- i. *Greater supplier's trust in the buyer reduces the ex ante transaction costs (negotiation and contracting costs) incurred by the exchange partners*

Monitoring and enforcement transaction costs are the costs made to make sure the other party executes the terms of the contract, and takes the right action to ensure the transaction. Under conditions of trust, trading partners will spend less time and resources on monitoring whether the other party performs the agreements (absence of opportunism). Additionally, trust helps to reduce time and resources required for bargaining over problems that arise in the course of the transacting (Dyer and Chu, 2003). Therefore, we hypothesize:

- ii. *Greater supplier trust in the buyer reduces the ex post transaction costs (monitoring and enforcement costs) incurred by the exchange partners*

The next hypothesis would help to enhance the importance of trust and open flow of information between buyer and suppliers. Open flow of communication between the business partners enhances coordination, and efforts to maximize efficiency throughout the supplier involvement in early product and process improvements (Monczka et al. 1998, Heide and John, 1990, Wynstra et al. 2001). However, suppliers will not share their valuable information if they do not trust the other party. Hence, trust eliminates the supplier's feelings about the buyer opportunism to misuse the information. This leads to our third hypothesis:

- iii. *Greater supplier trust in the buyer stimulates the sharing of valuable (confidential) information with the buyer*

Question four is related to the supplier's specific assets and its influence on productivity in exchange relationships. Investments in specific asset increase the expectation of continuity and collaboration (Heide and John, 1990). However, transactions involving high specialized assets cause relational dependence among partners (Williamson, 1985). This dependence can yield high transaction costs if any of the partners pursues its own interest at the expenses of the other (opportunism). Moreover, suppliers do not make the optimal level of investments because they are unwilling to expose themselves to the risk of being opportunistically exploited (Dyer and Chu, 2003). In the absence of trust, suppliers will be less likely to make investments to a particular customer. Therefore, we hypothesize:

- iv. *Greater supplier trust in the buyer enhances the supplier's specific investment dedicated to the buyer*

The next hypothesis assumes an inverse relation between supplier information sharing and the transaction costs incurred in the exchange relationship. Good information flow between trading partners reduces information asymmetry as well as the potential for opportunism (Dyer and Chu, 2003). When both partners involved in the transaction have perfect information, transaction costs are assumed to be zero (neoclassical economics) and partners cannot behave opportunistically. Therefore, we hypothesize:

- v. *Greater level of supplier information sharing reduces the transaction costs incurred in the exchange relationship*

The last hypothesis assumes a direct relationship between specific investments and transaction costs. According to Williamson (1985), productivity gains in the value chain are possible when firms are willing to make customized specific investments. However, increased specialization cannot be achieved without cost. A central premise in the transaction cost theory is that transaction costs increase as the transactor makes greater specific investments (Dyer and Chu, 2003). The standard reasoning is that as asset specificity increases, more complex governance mechanisms are required to eliminate or attenuate bargaining over profits from specialized assets (Williamson, 1985). Therefore, we assume that as asset specificity increases, complex governance structures, such as more complex contracts, will be required.

- vi. *Greater supplier investments in specific assets increases the transaction costs incurred in the exchange relationship*

### **3.5 Research Model**

The conceptual model (Figure 10) shows the interaction between the buyer's trustworthiness, information sharing, specific investment, and transaction costs, and how those variables affect the buyer's business performance. The effect on business performance is out of the scope of this research. Therefore, there are no formulated hypotheses in which the buyer's business performance is the dependent variable. The dotted lines in the model indicate that greater information sharing, greater investments in specific assets, and lower transaction costs (ex ante plus ex post transaction costs) lead to higher levels of economic performance/efficiency. In this study, trust is stated as the pillar of buyer-supplier relationships.

Hardin (2002) argued that a crucial condition for trust development is the coexistence of (1) mutual interest between exchange partners to engage in risk situations and (2) the incentives structures to reach the desired commitments in order to promote the placement of trust and the continuity of a trusting relationship. To maintain the continuity of the buyer-supplier relationships it becomes necessary to promote the compatibility of incentives over time. People may trust each other not necessarily because the existence of an immediate reward, but yearning some kind of benefit or advantage in the present or in the future, even if that advantage consists of just continuing the relationship because a perceived value in the relation (Hardin, 2002).

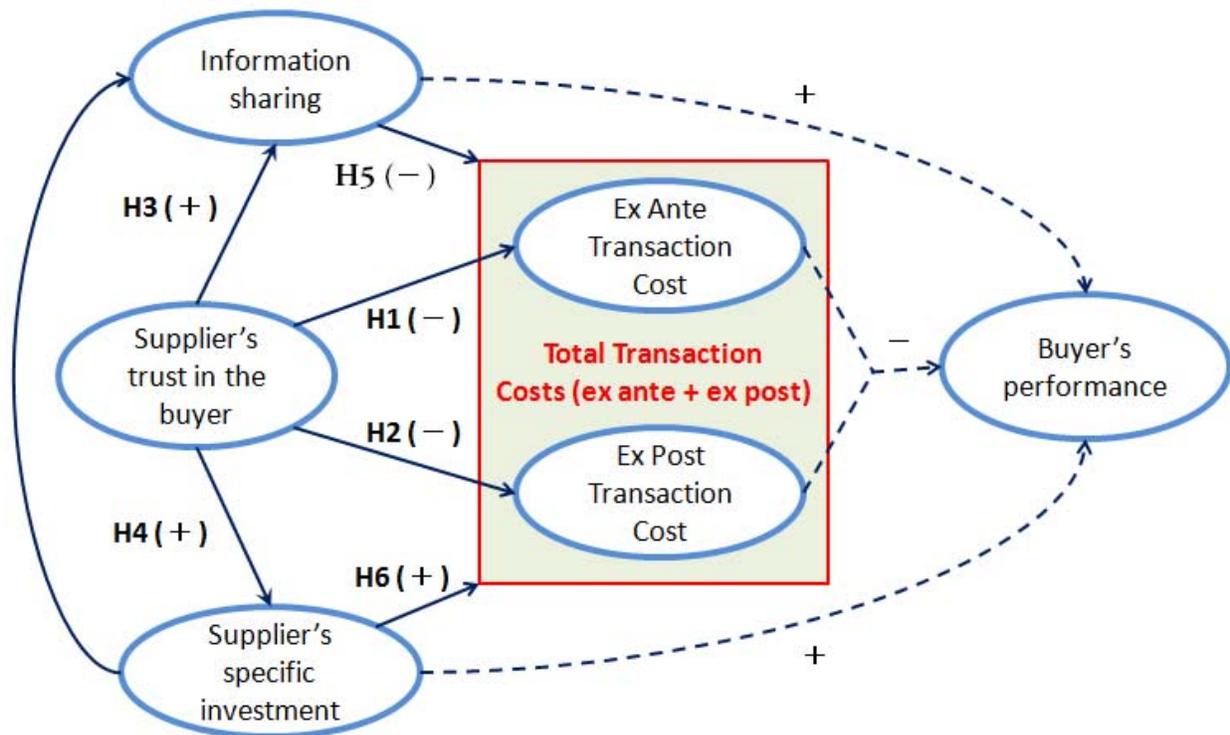
Perceived expected value reduces the inclination a firm may have in acting opportunistically, because it could have a negative impact on the future exchanges with its partners (Zajac and Olsen, 1993). According to Hald et al. (2009), buyers and suppliers have different and common expected values. Buyer expected values are associated with cost reduction, time compression, and access to innovation. Suppliers on the other hand expect price/volume and growth. For suppliers price/volume corresponds to the cost reduction component for buyers. As common values, buyers and suppliers expect access to new buyer/suppliers and competency development (learning from best suppliers/buyers). Thus, mutual interest and commitment stimulate buyers and suppliers to engage in mutual trust and expectations in the perceived value of the relationship.

However, the perception of trust by both parties may influence a firm's performance throughout the manner they negotiate, communicate, and invest in specific asset. First, as the research model proposes, the buyer performance is directly affected by the transaction costs incurred during the initial contact, the contracting procedure, and further costs of monitoring and enforcement of the potential partner. According to Williamson (1975, 1985) these costs are necessary to solve the problems of bounded rationality, opportunism, and uncertainty in the business exchange relation. Thus, the transaction cost theory views inter-organizational relationships in terms of their having defined structural properties before contract execution and other structural properties after contract execution (Zajac and Olsen, 1993). Dyer and Chu (2003) called these structural properties *ex ante* transaction costs and *ex post* transaction costs respectively. In line with Dyer and Chu (2003), this research intends to demonstrate the positive effect of trust in reducing both forms of transaction costs which contribute to positive results for the manufacturer performance.

Second, buyer trustworthiness influences positively the willingness of the suppliers to share valuable information with the buyer. This can only be feasible when the supplier trusts the buyer not to behave opportunistically (Zaheer et al. 1998, Dyer and Chu, 2003). Open channels of communication tend to have increased levels of importance when working in a close collaborative relationship (Gelderman and van Weele, 2003). The research model proposes a positive effect of the buyer's trustworthiness on supplier's valuable information sharing. Furthermore, suppliers' involvement in early product development stages, process improvements, and generation of innovative ideas lead to better firm performance. Finally, under mutual trust conditions, information sharing creates open communication between the parties, then, they reduce information asymmetry as well as the potential for opportunism. This in turn should reduce transaction costs in the exchange relationship. According to Dyer and Chu (2003) transaction costs, in neoclassic economics, are assumed to be zero because transactors have perfect information. Under perfect information, transaction costs should be irrelevant because the parties cannot behave opportunistically (Dyer and Chu, 2003). On the whole, a high level of buyer-supplier information sharing would have an inverse relationship with transaction costs (*ex ante* and *ex post* transaction costs).

Third, investment in specific asset might serve as a measure for vulnerability of the suppliers with regard to transaction-specific investments. According to Bensaou (1999), symmetric

investments enhance buyer-supplier relationships (strategic relationships). However, asymmetric assets investments create a dependency of one party over the other increasing opportunity for the more dominant party to exploit the less dominant one. Moreover, suppliers did not make the optimal level of specialized investments because they were averse to expose themselves to the risk of being opportunistically exploited (Dyer and Chu, 2003). When a supplier makes specific investments, transaction costs increase because of the fear of opportunism. A central premise of the transaction cost theory is that transaction costs increase as transactors make greater relation-specific investments. Thus, in the absence of trust, suppliers will invest less in specific investments dedicated to a particular customer. Furthermore, mutual trust enhances specific investments with strategic partnership.



**Figure 10: Research model**

The dotted lines in the model indicate that greater information sharing, greater investments in specific assets and lower transaction costs lead to higher levels of economic and efficiency performance. These relationships are not tested but will be examined in the discussion section (chapter 6). The relationships are supported by previous studies (Williamson, 1985; Aoki, 1988; Asanuma, 1989; Zaheer et al. 1998; Dyer and Chu, 2003).

### 3.6 Operational Measures

#### *Trust*

Following Dyer and Chu (2003), trust is operationalized using multiple scale items to measure the extent to which the supplier trusts that the buyer will not behave opportunistically. Trust is operationalized as the sum of the related sub-measures that are a reflection of a single unidimensional construct (Dyer and Chu, 2003). Each scale item was measured on a 7-point Likert scale (1=Not at all, 7=To a very great extent). The Cronbach's alpha for this construct was 0.78, indicating high reliability.

#### *Transaction Costs*

To measure transaction costs, suppliers were asked to estimate how much of their face-to-face communication time with the buyer (PH) involved negotiating a price or contract. Then, transaction costs were measured as the sum of the following sub-measures:

1. The percent of face-to-face communication time, between PH and the supplier, which was spent on negotiating a price or contract (ex ante transaction costs).
2. The percent of face-to-face communication time, between PH and the supplier, which was spent on monitoring and/or enforcement (ex post transaction costs).

Using this construct, it captures those activities which by themselves are not value-enhancing activities, but rather activities associated with completing the transaction and ensuring that each party lives up to its part of the agreement. Although these measures do not capture all of the transaction-related costs incurred by the companies, this measure is believed to be a reasonable proxy of the key elements of transaction costs. Thus, transaction costs were measured asking the suppliers to estimate the number of hours per week of contact between their organization and the buyer during the previous year. Next, they were asked what percentage of that time was involved with negotiating a contract/price (ex ante) and executing/monitoring to solve or avoid problems (ex post). These measures were calculated as followed:

- *Ex ante transaction costs (ExanteTC)* = (total annual hours the supplier spent with the buyer) × (percent of time spent on negotiation/contracting) ÷ (supplier sales to PH).
- *Ex post transaction costs (ExPostTC)* = (total annual hours the supplier spent with the buyer) × (percent of time spent on monitoring/enforcement) ÷ (supplier sales to PH).

The constructs include two elements of transaction costs, namely, ex ante negotiation/contracting and ex post monitoring/enforcement. Consequently, it captures those activities which by themselves are not value-enhancing activities, but rather activities involved in completing the transaction and ensuring that each party follows the agreement. This measure is a reasonable proxy of the key elements of transaction costs (Dyer and Chu, 2003).

#### *Supplier Information Sharing*

Information sharing was measured as the extent to which the supplier shares confidential /proprietary information with the buyer and engineers (1=Not at all, 7=To a very great extent). Dyer and Chu (2003) stated that sharing sensitive information, such as cost and proprietary technology, is a critical factor for the successful cost reduction. However, the sharing of such sensitive information is also somewhat risky given the potential of opportunism on the part of each of the exchange partners. The Chronbach alpha for this construct was 0.71, indicating high reliability.

#### *Asset Specificity*

Asset specificity relates to customized capital investments such as machinery, tools, etc., dedicated to a particular buyer. Asset specificity was operationalized as the percentage of the supplier's total capital equipment investments that would have to be scrapped if the relationship with a specific customer would come to an end. This measure was estimated by supplier respondents.

#### *Firm Size*

Firm size is used as a control variable because the relationship between PH and its large and small suppliers may differ. Because transaction costs are measured in terms of transaction costs per dollar sales, a small supplier's measures can result in high transaction costs per dollar of sales (Dyer and Chu, 2003). This is why firm size is important to know. Firm size was used as a control variable. The criteria selected to measure the suppliers size, were those suggested by Nootboom (1993). Dutch statistical conventions for defining small firms are those comprising less than 10 employees, for medium firms between 10 and 100 employees, and for big firms more than 100 employees (Nootboom, 1993).

### **3.7 The Survey Questionnaire**

The survey questionnaire is based on the research paper of Dyer and Chu (2003). They evaluated the role of the buyer's trustworthiness in reducing transaction costs which improves the buyer's performance. They conducted an empirical research in a sample of 344 supplier-automaker exchange relationships in the United States, Japan, and Korea. The research explains the concepts surrounding trust, transaction costs, communication benefits, and their effect on the manufacturer performance. The questionnaire consists of six sections, which cover all variables present in the conceptual model of this study. Section one contains questions regarding general supplier's information such as location, size, etc. Section two includes five questions regarding information sharing. The first two, asked about the level of information, suppliers shared with the buyer (PH), the following three, expressed the level of information PH shared with the supplier (suppliers' view). Section three dealt with face-to-face communication time and its respective percentage invested on ex ante and ex post activities. Section four stated a question about the percentage of dedicated asset specificity. Question five evaluated the level of trust suppliers had in PH. In this section, question 18 was reversely scored. The sixth and last question, had, as a purpose to giving the suppliers an open possibility to express their recommendation about the business relationship. The questionnaire was adapted according to the literature and SAMs suggestions. The questionnaire is designed, tested, and published using tools inside the web site called SurveyGizmo.com. The questionnaire can be found in Appendix 2.

### **3.8 Sample Choice**

Suppliers were selected according to the quantity of sales they have had during 2009 and the SAMs advice. Suppliers with less than a €100.000 sale during 2009 were not taken into consideration for interviewing. This low range was selected in common agreement by the SAMs and the thesis supervisor. The SAMs stated that many of those suppliers do not have a business relation with PH any longer. Furthermore, some suppliers have only had few transactions in that period of time. Hence, those suppliers were not contacted. In addition, suggestions made by some SAMs about suppliers, such as suppliers in process of change, were taken into account in the deselecting process. A Total of 120 suppliers were selected to participate in the research and the survey questionnaire was sent via e-mail. All selected participants in the survey were given more than one month to respond to the questionnaire. Periodic e-mails were sent to the suppliers

reminding them to fill in the survey. In some cases, telephone calls were made to motivate them to collaborate in the research, and finally, the SAMs did also contact them.

### **3.9 Response Rate**

From the total of suppliers initially selected (120), 55 of them filled in the questionnaire completely (46% respondent rate). Most of the responders were from the Netherlands (43.6%), followed by USA (14.5%), and Germany (12.7%). Other respondents were from Belgium, UK, Denmark, Ireland, Poland, and China. However, regional differences were not controlled. Related to the suppliers' sizes, most of the suppliers were big companies (61.8%) and only 3.7 per cent of respondents were small suppliers. The questions were evaluated based on the research made by Dyer and Chu (2003) using Multiple Linear Regression and the formulas shown in the following chapter.

### **3.10 Noreponse Bias**

The survey questionnaire has been criticized for nonresponse bias. Armstrong and Overton (1977) stated some methods for estimating nonresponse bias, namely: comparison with known values for the population, subjective estimates, and extrapolation. Since we did not have other available known values with which compare our results, we cannot apply this first approach. The second method, the subjective estimate method, suggests that people who are more interested in the topic assessed respond more readily and nonresponse bias occurs in items in which the subject's answer is related to his interest (Armstrong and Overton, 1977). The authors observed that this method is still used despite its uncertainty. The third and last method, the extrapolation method, is based in the assumption that persons responding later are presumed to be similar to nonrespondents (Armstrong and Overton, 1977). To apply this method, the questionnaire should be completed. The authors stated that a simple extrapolation across all items produce favourable results. Therefore, we applied this method to deal with nonresponse bias.

We compared the earlier responders with the later responders across the items in the questionnaire and we did not find significant difference. Therefore, the entire sample can be generalized to the population.

### 3.11 Data Analysis

The data for this research were collected by means of an online survey questionnaire. This method was chosen because a survey questionnaire is an efficient and standardized manner to collect quantitative information from a large number of respondents. The questionnaire was sent to the supplier's executive, provided by the SAMs, responsible for managing the day-to-day relationship. Having the data, statistical techniques were used in order to make representative statements about the respondents' observations.

The model that was estimated is shown in figure 10. Note that dotted lines have been added indicating that greater information sharing, greater investments in asset specificity, and lower transaction costs should lead to higher levels of economic efficiency and performance. These relationships are not tested as a part of the SPSS model but are examined in the discussion section and are supported by numerous previous studies. For example, the important link between transaction costs and economic performance has been the focus of considerable discussion in the transaction costs literature (e.g. Williamson, 1985; Hennart, 1993). It is also expected that information sharing and dedicated specific investments result in greater economic efficiency. This relationship has been examined in some detail by other researchers (e.g. Aoki, 1998; Nishiguchi, 1994). Likewise, the positive relationship between dedicated asset specificity and performance has been explored in great detail by Asanuma (1989) and Dyer (1996). Although this relationship is not addressed in this study, current research to date suggests that both information sharing and investments in dedicated assets lead to improving economic performance. Logically, if trust facilitates both, then trust would have an important effect in the economic performance of exchange partners.

SPSS was used to evaluate the correlation behaviour. Beside the target variables, additional data was used to compare and understand the differences between suppliers (e.g. country and supplier size). The hypotheses were tested from the suppliers using the following regressions:

$$H1: \text{Ex ante TC} = a + (b1) \text{TRUST} + (b2) \text{ASSET.SPECIFICITY} + e;$$

$$H2: \text{Ex post TC} = a + (b1) \text{TRUST} + (b2) \text{ASSET.SPECIFICITY} + e;$$

$$H3: \text{Suppl.Info.Share} = a + (b1) \text{TRUST} + (b2) \text{ASSET.SPECIFICITY} + e;$$

$$H4: \text{Suppl.Spec.Inv.} = a + (b1) \text{TRUST};$$

$$H5: \text{T.COSTS} = a + (b1) \text{Suppl.Info.Share} + e;$$

H6:  $T.COSTS = a + (b1) \text{ Suppl.Spec.Inv.} + e.$

### **3.12 Missing Data**

No missing values were found. However, the questions referred to the face-to-face communication (see appendix 2) could create some bias responses. Questions 13 and 14, as a percentage of the time spent on face-to-face communication (question 12), should summarize 0% or either 100%. This was not the case for 80% of the responders. No further action was taken. Thus, we suggest judging the answer with caution.

### **3.13 Intermediate Conclusion**

In this chapter, the methodology of this empirical research was examined. To be valid and reliable, this research should report similar findings of past researches and be executed in a different company from the earlier one. The research data is based on a survey questionnaire, the use of existing literature, and personal interviews. In the middle of the chapter, the hypotheses, the research model, the operational measures, and the survey questionnaire were explained. At the end of the chapter, the selection criteria of the 120 participants and the 46% respond rate described.

## 4. Results

### 4.1 Reliability Test: Cronbach's Alpha

The Cronbach's alpha coefficient is a useful indicator to test the internal consistency of the scale items. The higher the Cronbach's alpha, the more reliable the scale is (Hair et al, 2006). According with the authors, coefficients above 0.6 are acceptable. The Cronbach's alpha for trust was 0.78 and for information sharing 0.71. Both indicate high reliability.

### 4.2 Hypothesis testing

The simple descriptive statistics (table 1) shows the mean and standard deviation related to the variables. Two variables, asset specificity and years of relationships have shown high standard deviations. This is explained by a very small number of suppliers which reported long-time relationship and high dedicated investments. For example, one company has had a business relationship with PH for about 62 years and three suppliers have more than 50 percent of their asset specificity dedicated to PH.

**Table 1 - Means and standard deviations**

<b>Variables</b>		
Trust	13.93	(3.96)
Ex Ante Trans.Costs	0.021	(0.032)
Ex Post Trans.Costs	0.034	(0.067)
Suppl. InfoShare	3.90	(1.25)
Asset Specificity	10.71%	(15.57)

Note: Standard deviations reported in parentheses.

The correlation matrix in table 2 shows that the independent variables used in the regression results do not have multicollinearity problems. The results of the regression analysis for the formulated hypothesis are shown in table 3. First, the output analysis indicates that there is no correlation between trust and ex ante and ex post transaction costs. Then, Hypotheses 1 and 2 are not supported. Second, the analysis suggests a positive correlation between supplier trust in the manufacturer and the willingness suppliers have to share confidential information with the buyer (corr. = 0.103;  $\alpha = 0.012$ ). Hypothesis 3 is, therefore supported.

**Table 2 - Correlation matrix**

	Trust	Ex ante TC	Ex post TC	Supp. Infoshare
Ex ante TC	0.159 (0.247)	1.0		
Ex Post TC	0.171 (0.2.12)	0.253 (0.063)	1.0	
Suppl. Info.share	0.326 (0.015)	0.105 (0.447)	0.192 (0.160)	1.0
Asset Specificity	0.003 (0.983)	0.124 (0.367)	-0.102 (0.459)	0.304 (0.024)

Note: Figures in parentheses are significance levels

**Table 3 - Results of the regression**

Relationship	Expected Sing	Parameter	T-Value	P-Value	R <sup>2</sup>	F
Trust → Ex ante TC (AssetSpec.: constant)	-	0.001	1.167	0.249	0.041	1.098
Trust → Ex post TC (AssetSpec.: constant)	-	0.003	1.261	0.213	0.040	1.076
Trust → SupInfoSh (AssetSpec.: constant)	+	0.103**	2.618	0.012	0.198	6.425**
Trust → AssetSpec.	+	0.012	0.022	0.983	0.001	0.001
Suppl.Infoshare → Transaction costs	-	2.414	0.641	0.524	0.008	0.524
Suppl. Spec.Inv. → Transaction costs	+	0.249	0.820	0.416	0.013	0.416

Note: \*\* Sig. at alpha 0.05 (two tailed test)

Finally, the data indicate that there is no correlation between the level of the suppliers' trust and the amount of asset specificity invested by the suppliers dedicated to PH. The data also indicate that the suppliers' information sharing as well as the investments made by the suppliers did not have effect on transaction costs. Then, hypotheses 4, 5, and 6 are not supported.

Hypotheses were tested by estimating the coefficient, the  $R^2$ , and the significance of the relationships between the constructs (t-statistics and f-value).

Beside the main findings and using the available data from the suppliers, additional findings were explored (see table 4). For instance, supplier size (Suppl.Size) has a positive effect on trust and negative effect on asset specificity (AssetSpecificity). These findings are further discussed in chapter 5.

**Table 4 - Other findings**

Relationship	Relation	Parameter	T-Value	$R^2$	F
	Sing				
Trust→Suppl.InfoShare (AssetSpc & SuppSize: const.)	+	0.091**	2.198	0.212	4.567**
Suppl.InfoShare → Trust	+	0.935**	2.246	0.126	3.758**
Suppl.Size → Trust	+	2.032**	2.217	0.085	4.917**
Suppl.Size → AssetSpecificity	-	-9.015**	-2.531	0.108	6.406**

Note: \*\* Sig. at alpha 0.05 (two tailed test)

Overall, the study stated in this publication partially supports the proposed model. The findings offer support to the argument that trust has positive effects on information sharing, thus, a value creation in buyer-supplier relationships. This conclusion is in line with the results of several theoretical and empirical studies. Some of the findings in this research were contrary to the proposed model: the data did not support the effect of trust on ex ante and ex post transaction costs.

Hence, the main contribution of this study lies in conceptualizing, operationalizing, and empirically testing a model of effects of trust of buyer-supplier relationships on transaction costs, information sharing, and specific supplier asset investments.

### **4.3 Intermediate Conclusion**

In this chapter the reliability and the hypothesis testing were interpreted. The reliability test for trust and information sharing were both above 0.6 indicating high reliability. The simple descriptive statistics for asset specificity and years of relationship showed high standard deviation due to the high dedicated investments and long-time relationship of small number of suppliers with PH.

The data analysis showed that there is no correlation between the level of the supplier's trust and transaction costs and trust and asset specificity. Furthermore, transaction costs (ex ante and ex post transaction costs) were not affected by the suppliers' information sharing and the supplier's asset specificity. Therefore, H1, H2, H4, H5 and H6 were not supported. In contrast, H3 was strongly supported indicating the supplier's willingness to share confidential information with the buyer when there exist mutual trust.

## **5. Discussion**

The objective of this research was to evaluate the effect of trust in buyer-suppliers relationships on transaction costs, information sharing, asset specificity, and therefore, the buyer's performance. In this chapter the findings of this study are being discussed as well as its possible implications for buying firms.

### **5.1 Trust and ex ante and ex post transaction costs**

This section deals with an examination of the correlation between trust and transaction costs. The results did not find path correlation linking trust and ex ante transaction costs (H1) and ex post transaction costs (H2). Although, the expected results are not significant, these do not differ much from the Dyer and Chu (2003) findings. In their research, they did not find significant correlation between trust and ex ante transaction costs in USA, Japan, and Korea. In relation with trust and ex post transaction costs, they found support in USA, partial support in Korea, and they did not find support in Japan. It seems that even for trusting business relationships, it is necessary to spend some efforts to make sure that the responsibilities of each party are clearly spelled out (Dyer and Chu, 2003).

Other authors have suggested theories that explain the lack of correlation between trust and transaction costs. Van de Ven and Ring (2006) stated that the appreciation of trust in social and economic relationships is motivated by trends. The authors affirmed that despite the appeal and importance of trust, there is extensive evidence that trust is declining in many societies and organizations. A second trend they suggested is the cultural differences. In an increasingly global economy the parties engaged in many business relationships are from cultures that rely on different bases of personal and institutional trust (Van de Ven and Ring, 2006). As the authors stated, those trends represent significant challenges and opportunities, to understand the roles that trust can play in the governance and management of economic exchanges.

Another possible explanation for the lack of trust correlation could be explained using the Hofstede's cultural dimensions. Geert Hofstede developed the most widely used approach for defining cultural differences. In five dimensions, he identified the dominant value system affecting the human thinking and the organizations in predictable ways ([www. geert-](http://www.geert-)

hofstede.com). The categories Hofstede used to describe differences have been widely adopted in the field of intercultural studies using a scale between zero and one hundred (0-100). Those dimensions are the following: power distance index, individualism vs. collectivism, masculinity vs. femininity, uncertainty avoidance index, and long-term orientation. One category, namely uncertainty avoidance index, could help to explain the lack of correlation between trust and ex ante and ex post transaction costs. The data analysis showed that approximately 70 per cent of the respondents were from North-European countries and 14 per cent from United States. Those countries are characterized by low uncertainty avoidance index. For example, the Netherlands has 53, Germany has 56, USA has 41, and Denmark has 35. The low index indicates a cultural tendency to reduce the level of uncertainty by enacting rules, laws, policies, and regulations to cover all situations or circumstances. This could reduce the necessity of trust.

## **5.2 Trust and Information Sharing**

In accordance with the predicted hypothesis, it was found that trust is positively associated with information sharing (H3). Therefore, trust facilitates sharing of relevant information that may be viewed as a property by the supplier. This is particularly important because the supplier's designs and innovation may be critical in helping the buyer to differentiate its products in the marketplace (Dyer and Chu, 2003). However, is information sharing an antecedent or a consequence of trust? (see figure 6). The findings proved that both trust and information sharing are subject to mutual causality and each variable is therefore both an antecedent and an outcome of the other (T-value = 2.217;  $p < 0.05$ , see table 4). Then, trust leads to certain value-creation behaviour and these value creating behaviours in turn lead to higher levels of trust (Dyer and Chu, 2003).

## **5.3 Trust and Asset Specificity**

Contrary to the prediction, there was no correlation found between trust and asset specificity (H4). This indicates that trust may not be a strong safeguard to protect suppliers' specific investments which are subject to opportunistic exploitation (Dyer and Chu, 2003). However, it is also possible that the lack of correlation could be due to the fact that suppliers have not made significant dedicated investments (25.5% suppliers = 0% asset specificity, 60% suppliers < 10% asset specificity). Those suppliers had less risk (less vulnerability) and therefore reported high level of trust in PH. Due to a lack of vulnerability, there is no reason for the supplier not to trust

the buyer (Dyer and Chu, 2003). This could be confirmed by the significant correlation found between supplier size and trust and between supplier size and asset specificity (see table 4).

A second possible explanation for this finding is that suppliers may invest in dedicated assets to the buyer but they may rely on other governance mechanisms to protect those investments. For example stock ownership or legal contracts. These governance mechanisms (different to trust) may have been used as substitute for trust (Dyer and Chu, 2003).

#### **5.4 Power and Dependence**

Asymmetric dependence can be considered as the natural enemy of affect based trust (Bensaou 1999). While dependence on a partnership exploitable business opportunity is a basic condition for continuation of a relationship, asymmetric dependence can destroy the potential of that relationship. Asymmetric dependence obstructs the development of affect based trust because of fear of opportunism, due to the more dependent bargaining position of the weak party (Gelderman, 2003). Furthermore, in situations of asymmetric dependence, contracts are unlikely to provide a basis for constructive conflict resolution. Because of the limited bargaining power, the more dependent partner cannot enforce contractual arrangements unless the case is taken to court. As a result the relationship will no longer be open for constructive conflict resolution or relationship continuation.

#### **5.5 Intermediate Conclusion**

Despite the fact that most of the hypotheses were not supported, these findings corroborated the findings of past researches. For instance, Dyer and Chu (2003) found no correlation between trust and ex ante transaction costs and trust and asset specificity, and partial correlation between trust and ex post transaction costs. Similarly to our findings, Dyer and Chu (2003) found strong support of the positive effect of trust on the supplier's disposition to share valuable and proprietary information with the buyer.

There are, however, some theories explaining the lack of trust correlation. For instance, Van de Ven and Ring (2006) proposed that the lack of trust correlation with the transaction costs can be due to the cultural differences and the declining of trust in many societies and organizations. The five cultural dimensions developed by Geert Hofstede, identified the dominant value system affecting the human thinking and the organizations in predictable ways. Similarly, Dyer and Chu

(2003) suggested the lack of correlation between trust and asset specificity due to the fact that suppliers have not made significant investments dedicated to the buyer. As a consequence, there is no reason to the supplier to trust the buyer (less vulnerability). However, when high investments have been made, Bensaou (1999) and Gelderman (2003) agreed that asymmetry dependence deteriorates trust and increase fear of opportunism.

## 6. Conclusion

Many literature studies hold that trust can reduce transaction costs including information sharing, negotiating, monitoring and enforcing transaction or agreement. This study analyzes the impact of trust on transaction costs, information sharing, and asset specificity. To examine the role of trust of buyer-supplier relationships, the following research question was formulated:

*“Does buyer trustworthiness help to reduce transaction costs and contribute to the firm’s performance?”*

In order to answer the main research question we divided it into three sub questions:

- What is the difference between a trust relationship and a trustworthy party?
- How to gain trust?
- What are the benefits of trust in buyer-supplier relationships?

### ***What is the difference between trust relationships and trustworthy party?***

A trust relationship is one of interdependence where one party is vulnerable to the opportunistic behaviour of the other party of the relationship but the vulnerable party accepts the risk of its vulnerability. A trustworthy party is one which will not unfairly exploit vulnerabilities of the other parties in the relationship (Banerjee et al., 2006).

### ***How to gain trust?***

Much of the interaction of trust at the interpersonal and inter-organizational level takes place during the development of trust (see figure 7). A relationship trust starts around a zero point of neither trust nor distrust because of the absence of trustworthiness information of the counterparty. Development of trust is often slow and incremental because parties tend to be reserved about trusting. Over time, the level of trust grows and then remains constant. If trust-violation occurs, the overall level of trust is destroyed and great effort is required to return to the zero point and extra effort to move into positive trust domain (Currall and Inkpen, 2006).

### ***What are the benefits of trust in buyer-supplier relationships?***

Trust is positively associated with buyer-supplier relationship results. Trust influences organizations from structural perspectives and from mobilizing perspectives (McEvily et al. 2001). From structural perspectives trust endures interaction partnership between organizations and from mobilizing perspectives trust motivates actors to contribute, combine, and coordinate resources toward collective activities. Some benefits of trust in buyer-supplier relationships are: superior information sharing, better coordination, joint efforts to minimize inefficiencies, and encourages suppliers' involvement in product development (Monczka et al. 1998, Heide and John, 1990, Wynstra et al. 2001).

After the sub questions have been responded to, the main question is addressed:

***“Does buyer trustworthiness help to reduce transaction costs and contribute to the firm’s performance?”***

The answer is “yes”. As stated above, trust between parties brings collaboration benefits such as information sharing and communication, and it reduces collaboration drawbacks such as negotiation costs. All this, in turn, works in favour of positive performance and economic outcomes in the relationship. As observed in section 2.2, previous empirical researches on the relationship between trust and performance have already confirmed the positive aspects of trust-based management style. For instance, Dirks and Ferrin’s (2001) meta analysis on trust studies, provides a list of empirical studies on the positive relationships between trust and individual performance, group performance and unit performance.

Over all, this thesis partially validates previous theoretical argument and anecdotal data which has suggested that trust creates values in economic exchange relationships (Barney and Hansen, 1994; Dyer and Chu, 2003). In particular, the findings indicate that trust increases information sharing in buyer-supplier relationships. Thus, trust in buyer-supplier relations may be an important source of competitive advantage in industrial settings in which: (1) there is a high value associated with information sharing and (2) transaction costs are expected to be high due to conditions that create transactional difficulties (e.g., environmental uncertainty and high interfirm asset specificity).

## **6.1 Managerial Recommendations**

The results of this study have significant managerial implications. Given that trust has a positive effect on buyer and supplier management and performance, managers obviously need to pay attention to, and invest in, the conscious development and maintenance of the trustworthiness of their company.

### ***Find the Role of Trust***

Before using trust as a tool to promote economic improvement, managers should realize whether or not trust is critical to their inter-organizational relationships. Building inter-organizational trust requires an environment based on common standards. This should decrease the costs of defection, foster reciprocity, facilitate communication, and improve information flows (Zaheer et al., 1993; Dyer and Chu, 2003).

### ***Suppliers' size and trust***

The results (see table 4) and the process that builds trust (see figure 7); provide us with insight as to how trust is gained from suppliers. Our findings suggest that supplier characteristics such as size, affect the buyer's trustworthiness. Buyers could use the suppliers' size as a basis for transferring trust to unknown suppliers, relying on the experience of others.

### ***Stress the importance of trust to the SAMs***

Business leadership should develop an acute awareness of the roots of mistrust in organizations and implement measures to mitigate and eliminate its impact on the business and its stakeholders. Despite the fact that most of the SAMs interviewed did agree on the importance of trust in the relationship with their vendors. However, one of them just stated "trust is important, but finally we pay the bills and further nothing is free". Other SAM stated that trust at an interpersonal level is very good, however, this kind of trust is sometimes affected by the frequent management changes derived from the amount of people involved in all the processes (bureaucracy). Trust levels are usually at their ebb during such periods as; organizational crises, downsizing, and mergers, when situations are weak and low trust is, therefore, likely to have a direct negative effect (Dirks and Ferrin, 2001). It could be interesting to evaluate interpersonal trust in further studies.

### ***Listen to the supplier***

The nature of bilateral dependence between the transacting parties is the most critical guideline for estimating the real costs and risks to interfirm business and detecting the need for specific governance arrangements. Some interesting comments from the suppliers such as “make use of the expertise of existing suppliers”, “early supplier involvement, during Philips engineering phase” and “keeping a close working relationships to reach maximum learning experience from both sides” express a positive willingness to business continuity. Listening to and talking with the suppliers could represent a good source of market data. Moreover, suppliers are working on the same markets, and with related information.

### ***Enhance Information Sharing***

Since information asymmetry is associated with opportunism, open channels of communication and information could increase the mutual understanding and cooperation among both parties. This is additionally an important step to build up trust. The results indicate that the expectation of trust was a crucial condition for both sharing information and developing a climate of trust. Trust and information sharing are subject to mutual causality and each variable is therefore antecedent and outcome of the other. Accurate information helps the organization to estimate the trustworthiness of (potential) partners and decreases investments in monitoring and enforcing, eventually, would reduce transaction costs (Dyer and Chu, 2003).

### ***Deal with high suppliers' asset specificity***

The level of suppliers' dedicated investments to PH is relatively low. However, three suppliers have more than 50% of investments dedicated. This situation is explained by Bensaou (1999, figure 8) as a *captive supplier relationships*. The managerial implications are characterized by a lower level of information exchange, few mutual visits, mostly from supplier to buyer, less time spent on tasks such as negotiating the contract and monitoring the supplier, and high mutual trust, but limited direct joint action and cooperation. Our recommendations are, firstly, to identify which type of relationship matches the competitive conditions surrounding the product or services exchanged and, secondly, design the appropriate management model for each type of relationship.

## **6.2 Suggestions for Further Research**

This study has attempted to offer a better understanding of the role of trust in buyer-supplier relationships. First, we validate the composition and used it to reinforce the measurement tool in

terms of internal consistency and the validity of its content. Additionally, a certain number of its antecedents were determined. We considered a number of factors inherent to the parties such as the length of the relationship, their degree of power/dependence, their degree of asset specificity, and the willingness to share confidential information.

Because the data was collected from 55 suppliers only, a large sample size would improve the reliability and validity of the results, and furthermore, it would allow for additional analyses, such as investigating the differences across industries. We also caution that our findings may only be generalized to other industries with similar characteristics (i.e. complex-product industries where suppliers are vulnerable because they have made significant specific investments). Another suggestion for further researches is to replicate this conceptual model, using data from suppliers situated in different continents. This could help to evaluate and understand the effect trust has in different cultures.

Another interesting aspect to consider in further research would, beside trust in inter-organizational relationships, involve trust at interpersonal level. Finally, this research has only focused on manufacturing firms. A similar research could be conducted for investigating the perspective of suppliers offering services to their customers.

### **6.3 Limitations**

This study has some limitations that should be noted. First, the context was only dedicated to PH in Best. Therefore, it should be generalized in PH global. This could involve many more countries with the possibility to analyze profound cultural differences. Nevertheless, most of the suppliers were from the Netherlands, many of them were either multi-national or operated on international markets. It could be argued that there are multinational elements present.

Second, even though the studied relationships were dyadic, the data was gathered from only one party. It would have been most interesting to find out whether both parties had the same view about the level of trust and the relationship performance. On the other hand, the respondents were describing the trust they felt in the other party and, furthermore, the profitability and outcomes of the relationship particularly from their point of view.

Trust is clearly linked to several other concepts that are interrelated; these include relationship factors such as dependence and asset specificity, and context factors such as environmental uncertainty. These are complex phenomena of trust, frequently found in the literature.

Another clear limitation lies in the measures used for studying relationship performance. This happened because no objective data covering financial figures were available at PH regional (PH in Best). The annual report is done to PH in general (globally).

There are other limitations to be noted. The number of companies was somewhat limited by the quantity of sales and SAM criteria. Furthermore, even though the study concerned the field of technology, care must be taken in generalizing the results in other fields. In conclusion, the focus of the study was limited to business organizations.

## References

- Anderson, E., & Jap, S. D. (2005). The Dark Side of Close Relationships. *MIT Sloan Management Review* , 46 (3), 75-83.
- Aoki, M. (1988). *Information, Incentives, and Bargaining in the Japanese Economy*. New York, NY: Cambridge University Press.
- Armstrong, J. S., & Overton, T. S. (1977). Estimating Nonresponse Bias in Mail Surveys. *Journal of Marketing Research* , 14 (3), 396-402.
- Asanuma, B. (1989). Manufacturer-Supplier Relationships in Japan and the Concept of Relation-Specific Skill. *Journal of the Japanese and International Economies* , 3, 1-30.
- Bachmann, R., & Zaheer, A. (2008). Trust in Interorganizational Relations (pp. 533-554). In S. Cropper, M. Ebers, C. Huxham, & P. S. Ring, *The Oxford Handbook of Inter-Organizational Relations* (p. 782). New York: Oxford University Press.
- Banerjee, S., Bowie, N. E., & Panove, C. (2006). An Ethical Analysis of the Trust Relationship. In R. Bachmann, & A. Zaheer, *Handbook of Trust Reseach*. Massachusetts: Edward Elgar Publishing, Inc.
- Barney, J. B., & Hansen, M. H. (1994). Trustworthiness as a Source of Competitive Advantage. *Strategic Management Journal* (15), 175-190.
- Bensaou, M. (1999). Portfolios of Buyer-Supplier Relationship. *Sloan Management Review* , 40 (4), 35-44.
- Bensaou, M., & Anderson, E. (1999). Buyer-Supplier Relations in Industrial Markets: When Do Buyers Risk Making Idiosyncratic Investments? *10* (4), 460-481.
- Buvik, A., & Haugland, S. A. (2005). The Allocation of Specific Assets, Relationship duration, and Contractual Coordination in Buyer-Seller Relationships. *Scandinavian Journal of Management* , 21, 41-60.
- Cai, S., Yang, Z., & Hu, Z. (2008). Exploring the Governance Mechanisms of Quasi-Integration in Buyer-Supplier Relationships. *Journal of Business Research* , doi: 10.1016/j.jbusres.2008.02.004.
- Cannon, J. P., & Homburg, C. (2001). Buyer-Supplier Relationships and Customer Firm Costs. *Journal of Marketing* , 65 (1), 29-43.
- Carr, A. S., & Pearson, J. N. (1999). Strategically Managed Buyer-Supplier Relationships and Performance Outcomes. *Journal of Operations Management* , 17, 497-519.

Coleman, J. S. (1990). *Foundations of Social Theory*. Cambridge, MA: Harvard University Press.

Currall, S. C., & Inkpen, A. C. (2006). On the Complexity of Organizational Trust: a multi-level Co-evolutionary Perspective and Guidelines for Future Research. In R. Bachmann, & A. Zaheer, *Handbook of Trust Research* (pp. 235-246). Cheltenham, UK: Edward Elgar Publishing Limited.

Das, T. K., & Teng, B.-S. (2004). The Risk-Based View of Trust: A Conceptual Framework. *Journal of Business and Psychology* , 19 (1), 85-116.

Dirks, K. T., & Ferrin, D. L. (2001). The Role of Trust in Organizational Settings. *Organizational Science* , 12 (4), 450-467.

Dwyer, F. R., Schurr, P. H., & Oh, S. (1987). Developing Buyer-Seller Relationship. *The journal of Marketing* , 51 (2), 11-27.

Dyer, J. H., & Chu, W. (2003). The Role of Trustworthiness in Reducing Transaction Costs and Improving Performance: Empirical Evidence from the United States, Japan, and Korea. *Organizations Science* , 14 (1), 57-68.

Dyer, J. H., & Singh, H. (1998). The Relational View: Cooperative Strategy and Sources of Interorganizational Competitive Advantage. *Academy of Management Review* , 23 (4), 660-579.

Gelderman, C. J. (2003). *A Portfolio Approach to the Development of Differentiated Purchasing strategies*. Eindhoven: Technische Universiteit Eindhoven.

Gelderman, C. J., & Van Weele, A. J. (2003). Handling Measurements Issues and Strategic Directions in Kraljic's Purchasing Portfolio Model. *Journal of Purchasing & Supply Management* , 9, 207-216.

Hald, K. S., Cordón, C., & Vollmann, T. E. (2009). Towards an Understanding of Attraction in Buyer-Supplier Relationships. *Industrial Marketing Management* , 38, 960-970.

Handfield, R. B., & Bechtel, C. (2002). The Role of Trust and Relationship Structure in Improving Chain Responsiveness. *31*, 367-382.

Handfield, R. B., & Bechtel, C. (2004). Trust, Power, Dependence, and Economics: Can SCM Research Borrow Paradigms? *International Journal Integrated of Supply Management* , 1 (1), 3-32.

Heide, J. B., & John, G. (1990). Alliances in Industrial Purchasing: The Determinants of Joint Action in Buyer-Supplier Relationships. *Journal of Marketing Research* , 27, 24-36.

Hennart, J.-F. (1993). Explaining the Swollen Middle: Why Most Transactions are a Mix of "Market" and "Hierarchy". *Organization Science* , 4 (4), 529-547.

- Hennart, J.-F. (2008). Transaction Costs Perspective on Inter-Organizational Relations. In S. Cropper, M. Ebers, C. Huxham, & P. S. Ring, *The Oxford Handbook of Inter-Organizational Relations* (pp. 339-365). New York: Oxford University Press.
- Hibbert, P., Huxham, C., & Ring, P. S. (2008). Managing Collaborative Inter-Organizational Relations. In S. Cropper, M. Ebers, C. Huxham, & P. S. Ring, *The Oxford Handbook of Inter-Organizational Relations* (pp. 390-416). New York: Oxford University Press.
- Hill, J. A., Eckerd, S., Wilson, D., & Greer, B. (2009). The Effect of Unethical Behavior on Trust in a Buyer–Supplier Relationship: The Mediating Role of Psychological Contract Violation. *Journal of Operations Management* , 27, 281-293.
- Huxham, C., & Beech, N. (2008). Inter-organizational Power. In S. Cropper, M. Ebers, C. Huxham, & P. S. Ring, *The Oxford Handbook of Inter-organizational Relations* (pp. 555-579). New York: Oxford University Press.
- Jhonsen, T. E. (2009). Supplier Involvement in New Product Development and Innovation: Taking Stock and Looking to the Future. *Journal of Purchasing & Supply Management* , doi: 10.1016/j.pursup.2009.03.008.
- Kotabe, M., Martin, X., & Domoto, H. (2003). Gaining from Vertical Partnerships: Knowledge Transfer, Relationship Duration, and Supplier Performance Improvement in the U.S. and Japanese Automotive Industries. *Strategic Management Journal* , 24 (4), 293-316.
- Kraljic, P. (1983). Purchasing Must Become Supply Management. *Harvard Business Review* , 107-118.
- Lee, H. L., So, K. C., & Tang, C. S. (2000). The Value of Information Sharing in a Two-Level Supply Chain. *Management Science* , 46 (5), 626-643.
- Liu, Y., Li, Y., & Zhang, L. (2010). Control Mechanisms Across a Buyer-Supplier Relationship Quality Matrix. 63, 3-12.
- McEvily, B., Perrone, V., & Zaheer, A. (2003). Trust as an Organizing Principle. *Organization Science* , 14 (1), 91-103.
- Monczka, R. M., Petersen, K. J., Handfield, R. B., & Ragatz, G. L. (1998). Success Factors in Strategic Supplier Alliances: The Buying Company Perspective. *Decision Sciences* , 29 (3), 553-577.
- Mudambi, R., & Helper, S. (1998). The Close but Adversarial Model of Supplier Relations in the U.S. Auto Industry. *Strategic Management Journal* , 19, 775-792.
- Nishiguchi, T. (1994). *Strategic Industrial Sourcing: The Japanese Advantage*. New York, NY: Oxford University Press.

Nooteboom, B. (2006). Forms, Sources and Process of Trust. In R. Bachmann, & A. Zaheer, *Handbook of Trust Reseach*. Cheltenham, UK: Edward Elgar Publishing Limited.

Panayides, P. M., & Venus Lun, Y. H. (2009). The Impact of Trust on Innovativeness and Supply Chain Performance. *International Journal of Production Economics* , doi: 10.1016/j.ijpe.2008.12.025.

Salant, P., & Dillman, D. A. (1994). *How to Conduct Your Own Survey*. New York, NY: Wiley & Sons.

Seppänen, R., Blomqvist, K., & Sundqvist, S. (2007). Measuring Inter-organizational Trust - a Critical Review of the Empirical research in 1990-2003. *Industrial Marketing Management* , 36, 249-265.

Van de Ven, A. H., & Ring, P. S. (2006). Relying on Trust in Cooperative Inter-Organizational Relationships. In R. Bachmann, & A. Zaheer, *Handbook of Trust Research* (pp. 144-164). Cheltenham, UK: Edward Elgar Publishing Limited.

Williamson, O. E. (1975). *Markets and Hierarchies: Analysis and Antitrust Implications*. New York, NY: Free Press.

Williamson, O. E. (1985). *The Economic Institutions of Capitalism*. New York, NY: Free Press.

Williamson, O. E. (1981). The Economics of Organization: The Transaction Cost Approach. *The American journal of Sociology* , 87 (3), 548-577.

Wynstra, F., Weele, A. v., & Weggemann, M. (2001). Management Supplier Involvement in Product Development: Three Critical Issues. *European Management Journal* , 19 (2), 157-167.

Yin, R. K. (2003). *Case Study Research: Design and Methods* (3rd Edition ed., Vol. 5). Thousand Oaks, Ca: Sage Publications, Inc.

Zaheer, A., McEvily, B., & Perrone, V. (1998). Does Trust Matter? Exploring the Effect of Interorganizational and Interpersonal Trust on Performance. *Organization Science* , 9 (2), 141-159.

Zajac, E. J., & Olsen, C. P. (1993). From Transaction Cost to Transaction Value Analysis: Implications for the Study of Interorganizational Strategies. *Journal of Management Science* , 30, 131-145.

## Websites

[www.geert-hofstede.com](http://www.geert-hofstede.com)

## Appendix 1 - Definitions of trust (Das and Teng, 2004)

<b>Authors</b>	<b>Definitions of trust</b>
Barber (1983)	Trust “as expectation of the persistence of the moral social order, ... The first ... as the expectation of technically competent role performance ... The second meaning of trust ... concerns expectations of fiduciary obligation and responsibility, that is, the expectation that some others in our social relationships have moral obligations and responsibility to demonstrate a special concern for other’s interests above their own” (p. 14)
Barney and Hansen (1994)	“Trust is the mutual confidence that one’s vulnerability will not be exploited in an exchange” (p. 177)
Bhattacharya et al. (1998)	“Trust is an expectancy of positive (or nonnegative) outcomes that one can receive based on the expected action of another party in an interaction characterized by uncertainty” (p. 462)
Boon and Holmes (1991)	“Trust as a state involving confident positive expectations about another’s motives with respect to oneself in situations entailing risk” (p. 194)
Bradach and Eccles (1989)	“Trust is a type of expectation that alleviates the fear that one’s exchange partner will act opportunistically”(p. 104)
Craswell (1993)	“(1) ‘X loaned some money to Y. What might explain X’s act of trust?’ (2) ‘X loaned some money to Y because he trusted her’. In the first example, ‘trust’ is used merely to label the behavior for which an explanation is being sought. In the second, ‘trust’ is put forward as an explanation of that behaviour” (p. 487)

- Cummings and Bromiley (1996) “Trust will be defined as an individual’s belief or a common belief among a group of individuals that another individual or group (a) makes good-faith efforts to behave in accordance with any commitments both explicit or implicit, (b) is honest in whatever negotiations preceded such commitments, and (c) does not take excessive advantage of another even when the opportunity is available”(p. 303)
- Currall and Judge (1995) Trust as “an individual’s behavioural reliance on another person under a condition of risk” (p. 153)
- Dasgupta (1988) “I am using the word ‘trust’ in the sense of correct expectations about the actions of other people that have a bearing on one’s own choice of action when that action must be chosen before one can monitor the actions of those others”(p. 51)
- Deutsch (1960a) “To trust another person to produce a beneficial event X (or to suspect that another person will produce a harmful event Y) an individual must have confidence that the other individual has the ability and intention to produce it” (p.125)
- Gabarro (1978) “Trust has been defined or operationalized in the literature in many different ways including the level of openness that exists between two people, the degree to which one person feels assured that another will not take malevolent or arbitrary actions, and the extent to which one person can expect predictability in the other’s behaviour in terms of what is ‘normally’ expected of a person acting in good faith” (p. 294)
- Gambetta (1988) “Trust ... is a particular level of the subjective probability with which an agent assesses that another agent or group of agents will perform a particular action” (p. 217)
- Hagen and Choe (1995) Trust “is the expectation that the promise of another can be relied on and that, in unforeseen circumstances, the other will act in a spirit of cooperation with the trustor” (pp. 589--590)

- Hosmer (1995) “Trust is the reliance by one person, group, or firm upon a voluntarily accepted duty on the part of another person, group, or firm to recognize and protect the rights and interests of all others engaged in a joint endeavour or economic exchange”. (p. 393)
- Lewicki et al. (1998) Trust is “confident positive expectations regarding another’s conduct” (p. 439)
- Luhmann (1979) Trust is “confidence in one’s expectations” (p. 4)
- Kee and Knox (1970) “Subjective trust and suspicion can be defined in terms of P’s certainty or uncertainty about O’s trustworthiness” (p. 359)
- Madhok (1995) “Trust is the perceived likelihood of the other not behaving in a self-interested manner” (p. 120)
- Mayer et al. (1995) Trust is “the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party” (p. 712)
- McAllister (1995) “Interpersonal trust as the extent to which a person is confident in, and willing to act on the basis of, the words, actions, and decisions of another”(p. 25)
- McKnight et al. (1998) Trust means that “one believes in, and is willing to depend on, another party”(p. 474)
- Michalos (1990) “Trust as a relatively informed attitude or propensity to allow oneself and perhaps others to be vulnerable to harm in the interest of some perceived greater good” (p. 619)
- Moorman et al. (1992) Trust “as a willingness to rely on an exchange partner in whom one has confidence” (p. 315)
- Ring (1996) “Two distinct forms of trust can be observed in economic exchanges: fragile and resilient trust” (p. 150).

- Rotter (1967) Trust “as an expectancy held by an individual or a group that the word, promise, verbal or written statement of another individual or group can be relied upon” (p. 651)
- Sabel (1993) “Trust, the mutual confidence that no party to an exchange will exploit the other’s vulnerability ...” (p.1133)
- Schlenker et al. (1973) “Interpersonal trust may be defined as a reliance upon information received from another person about uncertain environmental states and their accompanying outcomes in a risky situation” (p. 419)
- Scott (1980) “Interpersonal trust as a two-factor variable: one being a broad-based stable factor, the second being a situationally influenced factor” (p. 810)
- Sheppard and Tuchinsky (1996) “You can trust those with whom you have a business relationship when three conditions hold: (a) They risk losing too much if they cheat, (b) you can predict your partners well and thus can protect against their cheating, and (c) your partners have adopted your preferences” (p. 143)
- Sitkin and Roth (1993) Trust refers to “belief in a person’s competence to perform a specific task under specific circumstances” (p. 373)
- Zucker (1986) “From a sociological perspective, trust is defined as a set of expectations shared by all those involved in an exchange” (p. 54)

## Appendix 2 – Questionnaire

### General Information

Dear Sir/Madam, The objective of our survey is to assess how satisfied you are, as a key supplier, in doing business with Philips Healthcare and what opportunities you see for improving the relationship with this important customer. Filling in this questionnaire will not take more than 5 minutes of your time. I hope that you will be able to contribute to this important survey. Best regards, Jaime Hernandez (j.i.hernandez.mendieta@student.tue.nl; +31-6-15311738)

**1. In what country are you located? \***

Doing business with Philips Healthcare Best.

**2. Approximately, how many people are employed in your company? \***

- Between 0 and 10  
 Between 10 and 100  
 More than 100

**3. What is your industrial sector? \***

**4. Approximately, how many years have you being working as a supplier partner of Philips Healthcare? \***

**5. Which Philips Healthcare's commodity cluster are you doing business with? \***

You can select more than one answer

- EMS Outsourcing  
 Hardware/Software  
 Mechanical Components  
 Commodity Mechatronics  
 Specific Commodity

**6. How would you value Philips Healthcare as a customer? \***

- Strategic  
 Preferred  
 Commercial

**Why? Please explain ... \***

You can select more than one answer

## Information Sharing

7. During 2009, to which extent did you provide detailed cost data to Philips Healthcare (e.g. a break down of your costs structure which estimates exactly what it cost you to manufacture a specific component)? \*

1. Not at all	2	3	4. Neutral	5	6	7. To a very great extent
<input type="radio"/>						

8. During 2009, to which extent did you share information with Philips Healthcare on your long-term production plans, capital investments, and capacity utilization? \*

Not at all	-	-	Neutral	-	-	To a very great extent
<input type="radio"/>						

9. During 2009, to which extent did Philips Healthcare provide technical, engineering, or other assistance which has allowed you to make changes in your manufacturing processes (e.g. plant layout, new machines or technologies, etc.) which have enable you to lower manufacturing costs? \*

Not at all	-	-	Neutral	-	-	To a very great extent
<input type="radio"/>						

10. During 2009, to which extent did Philips Healthcare provide assistance to help you reduce defects and increase overall reliability and quality of the products you sold to Philips Healthcare? \*

Not at all	-	-	Neutral	-	-	To a very great extent
<input type="radio"/>						

11. During 2009, to which extent did Philips Healthcare provide assistance in developing a "Just-In-Time" inventory management system designed to lower inventory costs and/or make delivery more efficient? \*

Not at all	-	-	Neutral	-	-	To a very great extent
<input type="radio"/>						

## Face-to-face communication

12. Indicate the average number of hours/week of face-to-face meeting you spent with Philips Healthcare during 2009 \*

13. Percentage of the average number of hours/week of face-to-face time spent on negotiating a contract and/or price \*

Related to question 12

14. Percentage of the average number of hours/week of face-to-face time spent on monitoring/improvement \*

Related to question 12

## Specific investments

15. Please indicate the percentage of your total capital investments dedicated exclusively to manufacturing/supplying a product to Philips Healthcare \*

## About Trust

16. To which extent do you trust Philips Healthcare to treat you fairly? \*

Not at all	-	-	Neutral	-	-	To a very great extent
<input type="radio"/>						

17. To which extent does Philips Healthcare have a reputation of trustworthiness in your industrial sector? \*

Not at all	-	-	Neutral	-	-	To a very great extent
<input type="radio"/>						

18. To which extent do you perceive that Philips Healthcare takes unfair advantage of you? \*

Not at all	-	-	Neutral	-	-	To a very great extent
<input type="radio"/>						

## Recommendation

19. What suggestions would you have to Philips Healthcare to benefit from your expertise as a supplier partner?