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Master Degree Project in Accounting

Beyond the Dyadic Relationship:

A case study on a role of open book accounting in an industrial network

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Abstract

Introduction: *Studies on inter-organizational relationships have increased rapidly, but most studies have focused on the dyadic relationship. Back in the 1970s the industrial network approach was developed and researchers started to emphasize that companies are interwoven in networks of relationships and suggested that interdependencies are created between companies when they are mutually dependent on one another to reach long-term benefits. An issue has been how to manage interdependencies and researchers have recently emphasized that the role of Open-Book Accounting (OBA) in this management within an industrial network should be observed. Researchers have in turn emphasized that there are two purposes of OBA, trust-building and cost management, which should be studied together.*

Research Objective: *The aim of this thesis is to extend the knowledge on the role of OBA in managing interdependencies within an industrial network. By studying the purposes of OBA together and not separately, we aim to explain how trust-building and cost-management support each other in the management of interdependencies.*

Research Questions:

RQ1: How is an industrial network and its interdependencies created?

RQ2: How can OBA be used to manage interdependencies, when trust-building support cost-management?

RQ3: How can OBA be used to manage interdependencies, when cost-management support trust-building?

Research Design: *When writing this thesis, we conducted a case study as the methodology is suitable to apply when the objective is to investigate a single phenomenon (OBA) in its natural setting. Eight semi-structured interviews were conducted with five companies in the studied industrial network.*

Analysis and Discussion: *Before the industrial network was created, there was opportunistic behavior among the actors and the dyads were transactional in character. When a relationship to a new logistics partner was established the opportunistic behavior was mitigated and interdependencies were thus created. The established trust from the industrial network creation made it possible to use OBA and information has been shared in the industrial network to support a mutual understanding and make the supply chain more efficient. The increased efficiency has improved the cost-management, which has built more trust. Thus, a management over interdependencies has been established when OBA has been used to support trust-building and cost-management.*

Conclusion: *We have broadened the scope of OBA's role in the management of interdependencies by examining how trust-building and cost-management can support each other. Unlike previous research, our study of the industrial network indicates that a firm can use OBA, not only to manage interdependencies with suppliers in the manufacturing processes, but also to indirectly support the management of interdependencies with their customers. We stress that more research is needed on the roles of OBA in industrial networks and suggest researchers to not only study the role of OBA in managing interdependencies, but also the role of OBA in creating interdependencies.*

Key Words: *Open-book Accounting (OBA), Industrial network, interdependencies, activities, resources, actors, cost management, trust-building*

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1. Introduction

The introduction begins with (1.1) a background to previous research on inter-organizational relationships and why there is a need to look beyond the dyadic relationship to focus on the network. A problem identified in industrial networks is further discussed in section 1.2 and a potential role of OBA is presented. In 1.3 is the research objective presented, followed by the underlying research questions (1.4), thesis delimitations (1.5) and the thesis outline (1.6).

1.1 Problem Background: Interdependencies in Industrial Networks

Studies of inter-organizational relationships have increased in the last couple of decades, but such research has mainly focused on companies in an arm-length distance (Lind & Thrane, 2010). The direct dyadic relationship between a buyer and a supplier is the most studied relationship and has previously, mainly, focused on transaction cost reductions that could be made between two parties (Lind & Thrane, 2010; Agndal & Nilsson, 2010). A problem in dyadic relationships has been to decide when a company should produce by itself, or outsource production to a supplier (Lind & Thrane, 2010). The parties make specific investments for the partnership which is of limited use for others outside the relationship and it is considered important to safeguard the investments from being appropriated by the opportunistic other (Dekker, 2004). However, Håkansson et al. (2010) argue that inter-organizational relationships are not only about reducing transaction costs as parties are engaged in close relationships to develop in the long-term. The companies are thus not independent of one another, but interdependent, basically being mutually dependent to reach long-term benefits for both parties (Håkansson & Snehota, 1995).

The assumption that companies are interdependent was emphasized back in the 1970s when researchers acknowledged that relationships are not created in isolation, but instead is part of a bigger network of other relationships (Håkansson et al., 2010). Every company tends to have some highly significant customer and supplier relationships, critical for the company development and survival (Håkansson, 1982) and each relationship can be connected to other relationships (Alenius et al., 2015; Baraldi & Strömsten, 2009). The relationship development cannot be properly understood if these connections are disregarded (Håkansson & Snehota, 1995; Blankenburg & Johanson 1990; Mouritsen & Thrane, 2006). With this in mind, the industrial network approach was developed, with a focus on industrial markets, where both buyers and suppliers are companies.

With the core assumption of interdependencies (Håkansson & Snehota, 1995; Håkansson et al., 2010), the industrial network approach is able to move away from the conventional view of business structures as being independent companies. Instead, the resources a company can access are essential for the company performance (Håkansson & Snehota, 1995) but the connections between companies resources matter even more for the mutual relationship development (Håkansson & Johanson, 1992). The company has a set of internally controlled resources, but it is through the collaboration between the companies that a value is created for both parties (Håkansson et al., 2010). Thus, by being interdependent, changes that occur in the direct dyadic relationship provoke another reaction in another embedded relationship (Alenius et al., 2015) and companies' interdependencies are obvious because what can be offered in one relationship is dependent on what can be received in another.

1.2 Problem Discussion: The Management of Interdependencies

Since the companies are deemed to be dependent on one another in an industrial network, an important issue is therefore how to manage the interdependencies (Dubois et al., 2004) and in the last decade, researchers have looked at how interdependencies can be managed through various accounting techniques (Kajüter & Kulmala, 2005; Agndal & Nilsson, 2010; Dekker,

2004; Carr & Ng, 1995). There is also a body of accounting literature in which the industrial network approach has been applied (Håkansson et al., 2010), but researchers stress the need for more empirical research about Open-Book Accounting (OBA), which is a phenomenon about disclosing quantitative cost information (Kulmala, 2002; Kajüter & Kulmala, 2005, 2010) or non-financial information between a buyer and a supplier in a relationship (Carr & Ng, 1995; Mouritsen et al., 2001). It is argued that OBA can be used to manage the aforementioned interdependencies across organizational boundaries (Alenius et al., 2015), but OBA is a fairly new phenomenon and has mostly been reported in dyadic settings (Seal et al., 1999; Mouritsen et al., 2001; Dekker, 2003; Kulmala, 2004; Agndal & Nilsson, 2008, 2010; Romano & Formentini, 2012; Munday, 1992; Möller et al., 2011; Windolph & Möller, 2012).

The phenomenon became a response to companies increased outsourcing of activities and increased focus on the company core competencies (Cooper & Slagmulder, 2004; Kajüter & Kulmala, 2010). In a dyadic setting, the buyer usually requires the supplier to share their cost information (Kajüter & Kulmala, 2005), but there is a risk for the supplier that the buyer might exploit the cost data in price negotiations and there is thus a reluctance to disclose such information (Agndal & Nilsson, 2010). The purpose of sharing accounting information is associated with managing costs (Munday, 1992; Carr & Ng, 1995; Mouritsen et al., 2001; Agndal & Nilsson, 2008, 2009, 2010; Kulmala, 2002; Kulmala et al., 2002; Kajüter & Kulmala 2005, 2010; Alenius et al., 2015) and cost-management is deemed to be a form of an inter-organizational control (Agndal & Nilsson, 2010; Baraldi & Strömsten, 2009). Another purpose of OBA that has been emphasized is trust-building (Tomkins, 2001; Vosselman & Meer-Koistra, 2009; Kajüter & Kulmala, 2005, 2010; Kulmala et al., 2002; Kulmala, 2004; Suomala et al., 2010; Möller et al., 2011; Windolph & Möller, 2012) and researchers have claimed that by increasing trust in a network, it is possible to manage costs due to reduced risks (Kulmala, 2002).

Research on the roles of OBA in networks are still at an exploratory stage, and the need for further research is frequently highlighted (Kulmala, 2002; Kulmala et al., 2002; Kajüter & Kulmala, 2005, 2010; Suomala et al., 2010). In the existing body of literature on the industrial network approach there has been little emphasis on OBA. Alenius et al. (2015) therefore applied the industrial network approach to study how OBA was used to manage interdependencies, not only in a direct dyadic relationship between a customer and their main supplier, but also how it was used to manage interdependencies created in an embedded relationship. The focus of their research was to explain how OBA is used to manage interdependencies through cost reductions, but there is limited focus on trust-building. Kulmala (2002) emphasizes that trust is both a requirement to use OBA, but it is also an outcome of actually sharing information. Simultaneously it is obvious from previous literature that the purposes of exchanging accounting information should be studied together (Vosselman & Meer-Koistra, 2009).

1.3 Research Objective

The industrial network approach has been applied in a large body of accounting literature, but very little emphasis has been on the roles of OBA. The objective of this thesis is thus to extend the knowledge on the role of OBA in managing interdependencies within an industrial network. This is done by conducting an exploratory case study in the retail sector. By studying the purposes of OBA together and not separately, we aim to explain how trust-building and cost management can support one another in managing interdependencies within the studied industrial network.

1.4 Research Questions

To fulfill the research objective, three research questions have been formed that we aim to discuss and answer, based on the gathered empirical material. RQ1 serves as a platform for RQ2 and RQ3 and is necessary in order to understand how interdependencies are created. Since interdependencies are created from the network it is also essential that the industrial network creation first is explained.

RQ1: How is an industrial network and its interdependencies created?

When RQ1 is answered, it is possible to continue to observe the role of OBA in managing created interdependencies. Vosselman & Meer-Koistra (2009) pointed out that the OBA purposes have been studied in several different ways, but stressed the importance of studying trust-building and cost-management together. Therefore we aim to observe how the purposes of OBA can support one another in the management of industrial network interdependencies. Trust-building comes first in a network (Kulmala, 2002) and RQ2 is outlined the following way:

RQ2: How can OBA be used to manage interdependencies, when trust-building supports cost-management?

The objective is to study how the OBA purposes support each other and we therefore continue to observe how cost-management can support trust-building. Thus, to fulfill the research objective, RQ3 is formed the following way:

RQ3: How can OBA be used to manage interdependencies, when cost-management supports trust-building?

1.5 Delimitations

The roles of OBA can potentially be several and it has been explained in previous literature that OBA may create interdependencies in an industrial network (Alenius et al., 2015). This study is delimited to only examine the role of OBA in managing interdependencies. The contract has been mentioned to be a form of legal interdependency. These interdependencies are not examined in this thesis as the contract can be used as a management over other interdependencies (Håkansson & Snehota, 1995).

1.6 Thesis Outline

In the following chapter is the theoretical framework presented, based on the existing literature on the industrial network approach and Open-Book Accounting. The chapter is followed by a description of the chosen method/methodology. In the fourth chapter is the empirical evidence presented and later analyzed in chapter five. In the sixth and last chapter, the conclusions are presented.

2. Theoretical Framework

This chapter entails a review of the existing literature on the industrial network approach and OBA. In section 2.1 is the industrial network approach, its substance layers and the assumption of interdependencies presented. In section 2.2, the phenomenon of OBA is introduced and in section 2.3, the characteristics of OBA in networks are presented. The chapter ends with the authors own illustration of a developed research model (2.4), based on previous literature. The research model will be used in the data analysis.

2.1 The Industrial Network Approach

Researchers have used the industrial network approach to understand the developed inter-organizational relationships between companies and how these are a part of a larger complex network of connected dyadic relationships (Ford et al., 2003; Blankenburg & Johnson, 1990). A network is a step further from the dyadic relationship and greater attention must be directed towards the network within which the dyadic relationships take place and influence one another (Dubois & Pedersen, 2002). The aim of the industrial network approach is consequently to comprehend the inter-organizational relationships that are developed through interactions (Håkansson et al., 2010; Håkansson, 1982; Håkansson & Johnson, 1992) and once it is admitted that business relationships are connected, we have to consider the possible chain dependencies between both the direct and embedded relationships. These connections are both positive and negative for the parties involved (Håkansson & Snehota, 1995; Hertz, 1998). The process of interactions is deemed to be a dynamic process between the interdependent companies (Ford & Håkansson, 2006) and changes are driven by the continuous organizing process (Håkansson & Snehota, 1995). The evolution of inter-organizational relationships is constantly developing beyond the complete control of companies alone (Håkansson et al., 2010).

Safeguards are at the heart of many theoretical approaches, but the industrial network approach however, implies that the parties' possibilities to learn from each other by exchanging resources are of primary importance (Håkansson et al., 2010). It is considered more important to cooperate and increase the exchanged value (Håkansson & Waluszewski, 2002), rather than focusing on the opportunistic behavior of the other party.

2.1.1 The Substance Layers

In order to understand the uniqueness of the relationships, it is important to consider the connections between relationships (Hertz, 1998) and the network substance is used to explain what is affected in the relationships and the results of the interactions between the parties (Håkansson & Snehota, 1995). Three different substance layers of the network can be identified in any relationship: activities, resources and actors, which are at the core of understanding changes in business networks and created interdependencies (Håkansson et al., 2010; Håkansson & Snehota, 1995; Håkansson & Johnson, 1992; Alenius et al., 2015).

An activity occurs when one or several actors combine, develop, exchange or create resources by utilizing other resources (Håkansson & Johnson, 1992) and Håkansson & Lind (2004) emphasize that different activities become meshed together to one activity when resources are used. Activities can be connected in different ways to those of another company (Håkansson & Snehota, 1995) and the connection between these activities form a larger pattern of activities. The need for coordination is therefore reflected (Alenius et al., 2015). Resources can be transformed through activities, but the direct control over resources can be transferred to another actor. An activity is directly linked to another activity when these are coupled and the indirect links exist when the activities are coupled to each other via intermediate activities (Håkansson & Johnson, 1992).

From a management perspective, the relevance of networks and relationships concerns resources because these extend the firms capabilities in uncertain environments (Håkansson & Snehota, 1995). In establishing the basis for a business relationship, companies use financial resources to invest heavily in organizational, social, physical or technical resources (Baraldi & Strömsten, 2009; Håkansson et al., 2010) and these resources have attributes in an unlimited number of dimensions (Håkansson & Johnson, 1992). A core assumption of the industrial network approach is that resources are heterogeneous, meaning that the value of a resource is dependent on what other resources it is combined with (Alchian & Demsetz, 1972; Håkansson & Waluszewski, 2002; Håkansson et al., 2010; Håkansson &

Johnson, 1992). When the relationship is formed and the parties are cooperating, knowledge about how to use and develop the resources will increase and the companies will learn how to utilize each other's resources (Håkansson et al., 2010). The developed ties between resources create opportunities for further combination of resources, but they also constrain the possible actions, since the resources are bounded to the ties (Håkansson & Snehota, 1995; Alenius et al., 2015).

Actors are at the center of the network performing activities, controlling the resources (Håkansson & Snehota, 1995) and actors can consist of everything from individuals, parts of firms to groups of firms (Håkansson & Johnson, 1992). The interaction between actors affects the commitment and trust between the companies involved (Alenius et al., 2015) and the created bonds influence how the actors perceive each other (Håkansson & Snehota, 1995). The actors are influencing the use of resources, the way activities are performed and decide different techniques which are used as a way to establish control in the network (Baraldi & Strömsten, 2009).

2.1.2 Interdependencies

Every relationship can be developed in the substance layers and the layers are not independent (Håkansson & Snehota, 1995), but interwoven in the total network (Håkansson & Johnson, 1992). The actors carry out the activities and decide which resources to utilize, but the activities are also resource consuming and dependent on the actors capabilities. The resources have to be connected across firm boundaries to facilitate the flow of activities (Håkansson & Lind, 2004) and the lack of available resources limit the activities an actor can activate (Håkansson & Snehota, 1995). Actors are embedded in networks of relationships (Baraldi & Strömsten, 2009; Alenius et al., 2015; Håkansson & Snehota, 1995; Håkansson et al., 2010; Hertz, 1998) and their heterogeneous demands are satisfied by the heterogeneous resources.

Interdependencies are created when the layers are functionally related (Håkansson & Johnson, 1992; Håkansson & Snehota, 1995; Ford & Håkansson, 2006; Dubious et al., 2004) and are assumed to be multidimensional (Håkansson et al., 2010), created through activity links, resource ties and actor bonds of the different substance layers (Håkansson & Snehota, 1995). By interlocking activities and resources between two firms and thereby create interdependencies, the parties are able to produce something unique that cannot be produced in isolation (Baraldi & Strömsten, 2009). At the same time, created interdependencies between two firms also have an impact on the embedded relationships and the industrial network approach implies that inter-organizational relationships cannot be studied in isolation, but must be observed in the network of relationships in which they are embedded (Håkansson & Snehota, 1995; Ford et al., 2003; Hertz, 1998).

In previous literature, several different interdependencies have been acknowledged and companies always operate within a texture of interdependencies that have an impact on the development (Håkansson & Snehota, 1995). Some of the interdependencies that have been mentioned in previous literature are those related to technology (Håkansson, 1982; Håkansson & Snehota, 1995; Alenius et al., 2015), knowledge (Håkansson & Johnson, 1992; Håkansson & Snehota, 1995; Baraldi & Strömsten, 2009), social relations (Håkansson & Snehota, 1995; Håkansson & Lind, 2004) and administrative routines & systems (Håkansson & Johnson, 1992; Håkansson & Snehota, 1995; Alenius et al., 2015; Gadde & Håkansson, 2001). All different interdependencies potentially exist in an inter-organizational relationship, but some interdependencies are more clearly observable and dominating than others (Håkansson & Snehota, 1995). Dubious (2003) clearly states that outsourcing of manufacturing activities has been followed by an outsourcing of technical resources and customers today are heavily dependent on knowledge developed by suppliers. Gadde & Håkansson (2001) simultaneously stress that the enhanced role of the supplier has to be

managed through the administrative routines and an increased individual involvement in the relationship.

From both a theoretical and practical perspective, it is difficult to define a network and its boundaries (Ford & Håkansson, 2006), but is deemed to consist of all the companies, significant for the particular issue being addressed (Ford et al., 2003). Organizational boundaries become blurred, due to interdependencies (Håkansson & Lind, 2004; Håkansson et al., 2010) and Mouritsen & Thrane (2006) emphasize that firms have started organizing their activities via networks, but also started sharing resources across firms in order to keep up with the constant renewing of information. It is further emphasized that cooperation and networking offer the possibility of sharing information across the organizational boundaries (Tomkins, 2001; Håkansson & Lind, 2004; Alenius et al., 2015).

2.1.3 The Interdependencies in an Industrial Network

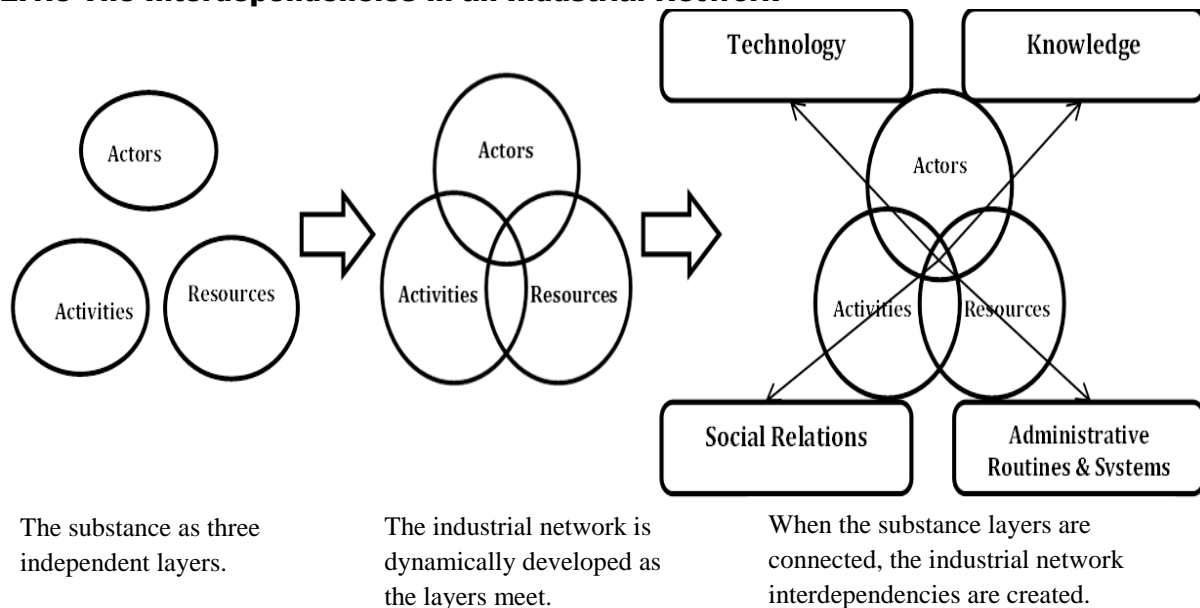


Figure 1

2.2 Open Book Accounting

There is a growing interest in the cost information sharing field (Kajüter & Kulmala, 2005; Agndal & Nilsson, 2008) and OBA emerged in the accounting literature during the early 1990s (Kajüter & Kulmala, 2010). The background to the phenomenon was that accounting scholars were becoming more aware of the increased importance of the relationships that existed between different organizations (Kajüter & Kulmala, 2010; Seal et al., 1999) and companies started outsourcing activities that was not part of the company core competencies (Cooper & Slagmulder, 1999, 2004; Kulmala, 2004). Firms consequently became dependent on suppliers to make their production system more optimal (Mouritsen et al., 2001).

OBA thus became a response to companies increased outsourcing of activities and has previously been defined as the sharing of quantitative financial information, but also qualitative non-financial information between a buyer and a supplier (Carr & Ng, 1995; Seal et al., 1999; Mouritsen et al., 2001; Kulmala, 2002). The technique has also been defined as a systematic way of disclosing cost information across firm borders (Hoffjan & Kruse, 2006; Kajüter & Kulmala, 2005, 2010; Romano & Formentini, 2012). The data disclosure is often unidirectional, demanded from the buyer to the supplier (Hoffjan & Kruse, 2006; Mouritsen et al., 2001; Munday, 1992; Agndal & Nilsson, 2010) and it allows the buyer to support the supplier in identifying critical areas of improvement (Agndal & Nilsson, 2008). Research has

emphasized that the main reason for applying OBA is to improve the organizations competitiveness (Kajüter & Kulmala, 2005) and a key factor for using OBA successfully is to accurately identify the suppliers with whom to share cost information. This is a question of focusing on the counterparts that will guarantee the desired improvements (Romano & Formentini, 2012).

It is obvious from the existing literature that the potential benefits of sharing accounting information is closely linked to the aim of managing costs (Carr & Ng, 1995; Mouritsen et al., 2001; Tomkins, 2001; Kulmala, 2002; Kajüter & Kulmala, 2005; Agndal & Nilsson, 2008, 2010; Kajüter & Kulmala, 2010; Alenius et al., 2015), but it is argued that previous literature sheds some light on the different roles of accounting (Mouritsen & Thrane, 2006) and OBA is also used to improve relations between counterparts through trust-building (Tomkins, 2001; Kulmala, 2002, 2004; Agndal & Nilsson, 2008; Kajüter & Kulmala, 2005, 2010). Many studies touch upon trust and its relation to inter-organizational control (Vosselman & Meer-Koistra, 2009) and it has been argued that these can be either substitutes or complementary (Dekker, 2004) where the substitution perspective assumes that trust replaces control (Vosselman & Meer-Koistra, 2000). The complementary perspective on the other hand suggests that control may enhance trust (Tomkins, 2001). Hence, it is obvious that the exchange of accounting information can have different impacts on control and trust, but it is necessary to study these together and not separately (Vosselman & Meer-Koistra, 2009).

2.3 Open Book Accounting in Networks

Based on the main purposes of OBA to build trust and to manage costs (Tomkins, 2001; Kajüter & Kulmala, 2005, 2010) it is important to understand what it is that characterize the purposes in a network (Kulmala, 2002).

2.3.1 Trust-Building

It is argued that trust-building actually is a network specific factor (Kajüter & Kulmala, 2005) and trust has to exist in the creation of a business relationship, but is also created when OBA is developed to increase transparency between the parties (Kulmala, 2002; Seal et al., 1999). Trust-building is deemed to be a dynamic process that is established and changed through behavior (Vosselman & Meer-Koistra, 2009) and researchers have argued that it can be seen as a prerequisite, facilitator or consequence of an inter-organizational relationship or network (Kajüter & Kulmala, 2005; Cooper & Slagmulder, 2004; Dekker, 2003). Higher trust can be used, in order to actually mitigate the need for control (Seal et al., 1999; Tomkins, 2001; Vosselman & Meer-Koistra, 2000; Romano & Formentini, 2012) and OBA can increase the trust, commitment and cooperation (Kulmala, 2004; Agndal & Nilsson, 2008).

Disruptions of long-term relations due to mistrust force actors to reconstruct new relationships in an environment where contracts are having a more prominent role. Consequently, to avoid these uncertainties, trust is central in long-term relationships and is generally embedded in social relations (Seal et al., 1999). However, the focus on OBA to create trust has previously been limited (Tomkins, 2001). Still, it is not enough for the parties in a network to reduce costs as they want something more from the relationship (Kajüter & Kulmala, 2010) and to avoid the opportunistic behavior of the other party trust is needed to increase satisfaction (Windolph & Möller, 2012).

Commitment refers to the willingness or attempt to build a relationship capable of managing unanticipated problems (Kulmala, 2002) and companies stabilize commitment to a relationship in order to show an absence of opportunistic behavior. Commitment acts as a vehicle for trust-building and accounting acts as a mean for knowledge sharing (Vosselman & Meer-Koistra, 2009). The implementation of OBA practices can thus serve as an indicator of willingness and commitment to the potential mutual development in a network (Kulmala et

al., 2002; Suomala et al., 2010). Mutual trust and commitment can be created when a relatively more dominant actor choose not exercise their power (Agndal & Nilsson, 2008), but researchers also argue that formal control reduces the motivation to actually commit towards another party (Enzle & Anderson, 1993). OBA should be developed on a long-term view to support mutual trust and commitment to the network (Kajüter & Kulmala, 2005) and OBA should demonstrate the role of commitment as it is supposed to bring value for all parties. Commitment from both suppliers and customers play a key role in trust development and is consequently important when analyzing OBA (Möller et al., 2011).

OBA requires a highly developed sense of trust between the parties involved and it leads to cooperation as flows of activities and resources are influenced between the firms (Mouritsen et al., 2001). OBA has been portrayed as a technology emphasizing trust and openness used for cooperation in the network (Suomala et al., 2010) and Munday (1992) conducted a survey, indicating that cooperation may improve if cost data is shared and used in a constructive manner, rather than to just pressure supplier margins. Hence, Suomala et al. (2010) simultaneously emphasize that control archetypes of OBA may enact cooperation, depending on the network context. Discussions concerning the relation between cooperation and trust have apparently been contradictive in previous literature, both mentioned to actually be a prerequisite for the sharing of information and an outcome of trust (Morgan & Hunt, 1994), but also a potential product of control (Mayer et al., 1995). Agndal & Nilsson (2009) concluded that there is no automatic connection between cooperation around cost management, and it is argued that trust is built into a relationship when parties show the ability and intention to actually behave cooperatively (Vosselman & Meer-Kositra, 2009).

2.3.2 Cost-Management

As information is shared, more elements can be inserted into one planning mechanism which allows for the construction of cost management (Mouritsen et al., 2001). The suppliers play an important role in the inter-organizational cost management and OBA is not supposed to only benefit the buyer, but information is shared to benefit both parties (Agndal & Nilsson, 2009) and create win-win situations in the network (Kulmala, 2004; Kulmala et al., 2002). The primary focus on OBA research has been related to cost-management and the broader literature of inter-organizational control in the buyer-seller relationship (Agndal & Nilsson, 2010). Apart from control, it is emphasized that coordination, communication and joint problem solving are important characteristics of cost management (Kulmala, 2002).

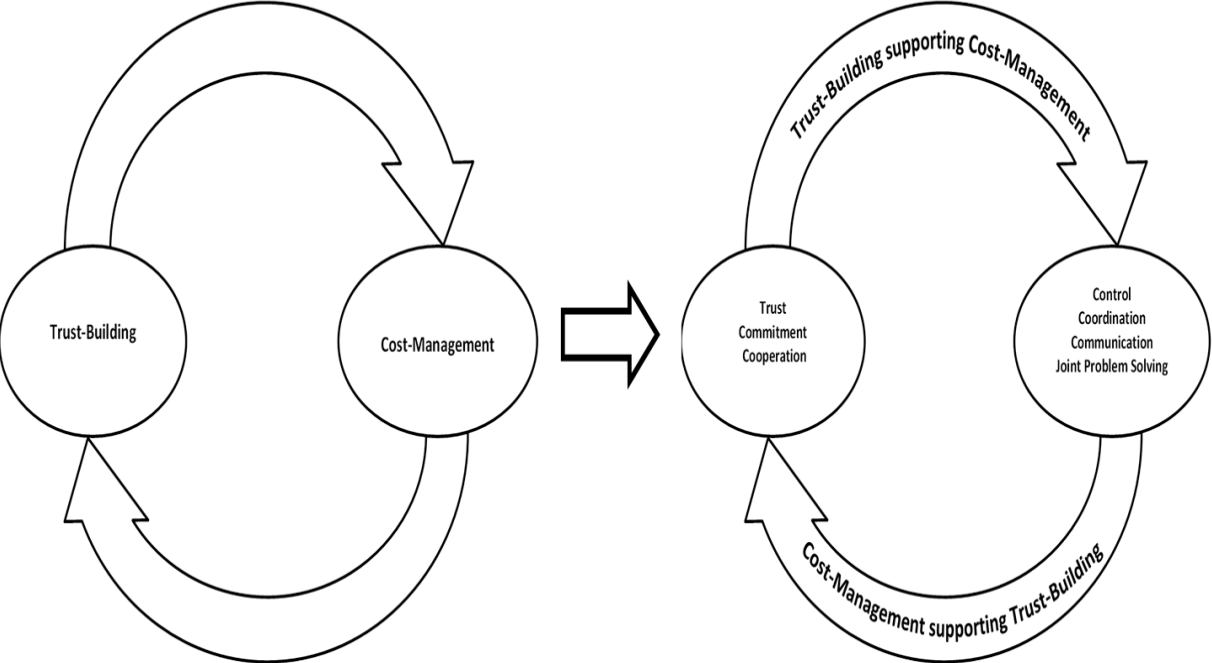
After outsourcing activities, companies tend to feel a loss of control and managers success are dependent on this governance (Kulmala et al., 2002) which is why they are concerned about re-installing a control over these activities (Mouritsen et al., 2001). Control enforced through power is no guarantee of successful cost management in a network where parties are interdependent on one another (Kajüter & Kulmala, 2005), but OBA has worked as a basis for managing interdependencies and establishing a price control (Alenius et al., 2015). A price control can enable the distribution of efficiency gains and support negotiations (Agndal & Nilsson, 2010).

The analysis of OBA has previously been limited to concern cost accounting only and an acknowledged characteristic related to cost management in networks are the communication (Kulmala, 2002). Closer communication may involve supplier cost data disclosure used to help the supplier reduce their costs (Munday, 1992); negotiate prices and keep suppliers alert of the objectives (Suomala et al., 2010). The communication quality is related to the accuracy, timeliness, adequacy, completeness and credibility of the shared information (Kulmala, 2002) and is critical for the benefits of organizational success and an effective partnership (Mohr & Speakman, 1994).

Accounting practices is used to satisfy coordination requirements (Dekker, 2004) and the OBA system is intended to reduce costs related to coordination of activities in the direct supplier relationship (Carr & Ng, 1995; Cooper & Slagmulder, 2004; Agndal & Nilsson, 2010; Möller et al., 2011), but also in the larger pattern of activities concerning several companies (Alenius et al., 2015). Coordination reflects the set of tasks each party expects the other to perform in the network (Kulmala, 2002) and the implementation of OBA allows a company to coordinate its supplier relationships (Alenius et al., 2015). Mouritsen et al. (2001) stress that a company can become an organizer if OBA is implemented and information can be used to coordinate the other companies' activities, but also the involved resources and competencies.

Joint problem solving is deemed to involve cost data disclosure (Munday, 1992) between a buyer and a supplier and may even work as an incentive for cost data disclosure (Romano & Formentini, 2012). Firms in a network try to manage an environment that is uncertain and they are therefore motivated to share information and engage in joint problem solving (Kulmala, 2002). The joint problem solving in the development of a product can lead to significant cost savings (Kulmala et al., 2002) throughout the network and OBA is used within joint development projects to better manage the costs (Agndal & Nilsson, 2010). However, joint problem solving is commonly supported in one direction only, when the supplier shares cost information to the customer. A network is supposed to support problem solving through OBA in both directions and has consequently mostly been neglected (Kulmala, 2002).

2.3.3 Open Book Accounting Purposes and Characteristics



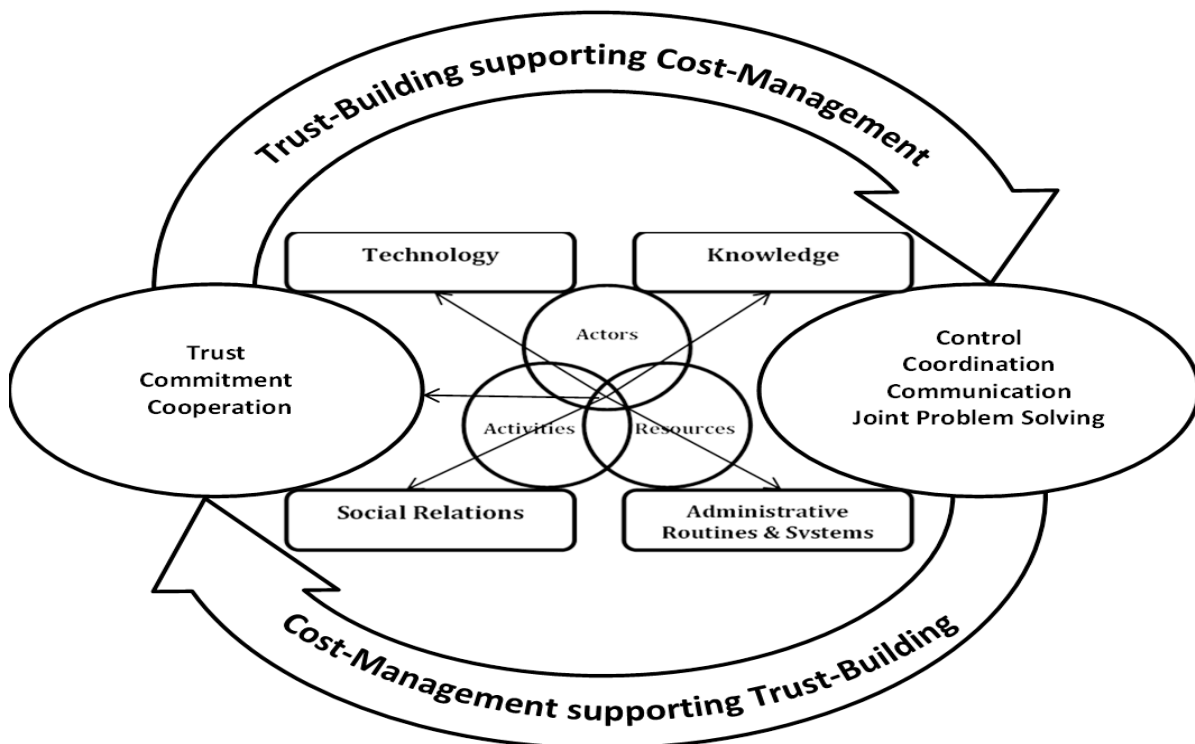
The two purposes of OBA: Trust-Building and Cost-Management interact and support one another.

Trust-Building characteristics observable in OBA literature are Trust, Commitment and Cooperation. Cost-Management characteristics observable in OBA literature are Control, Coordination, Communication and Joint Problem Solving.

Figure 2

2.4 Research Model

The research model (see figure 3) is synthesized by combining the previously explained figures. We previously acknowledged from figure 1 that the industrial network is developed when the three different substance layers are connected. When the layers are connected, the network interdependencies are created. The interdependencies have to be managed and the aim is to observe the role of OBA in the management when the two purposes of OBA support each other as explained in figure 2. Researchers have previously pointed out that OBA can be used in networks, when there exists some level of trust (Kulmala, 2002) and Håkansson et al. (2010) emphasize that the opportunistic behavior is mitigated during the industrial network development. Trust is consequently established in the network creation (Tomkins, 2001) and it is thus possible to use OBA in the industrial network. The research model will be used in the analysis and discussion of the empirical evidence. Basically, by looking at figure 1, we attempt to answer RQ1 and thus explain how the industrial network and the interdependencies is created, but it is only possible to answer RQ2 and RQ3 when the figures (figure 1 and figure 2) are combined in the research model. When the figures are combined, it is possible to observe how OBA can be used to manage created interdependencies within an industrial network.



Research Model (authors own illustration): OBA is managing the interdependencies when Trust-Building and Cost-Management support one another.

Figure 3

3. Method

The chapter begins with (3.1) a presentation of the chosen methodology and (3.2) the case selection. The chapter continues with (3.3) a clarification to how data was collected, (3.4) analyzed and (3.5) evaluated.

3.1 Research Design

When writing this thesis, we conducted a case study which is common methodology when coping with qualitative research data (Eisenhardt, 1989). The case study methodology is

suitable to apply when the objective is to investigate a single phenomenon in its natural setting and gain in-depth knowledge about the subject (Collis & Hussey, 2014).

Case studies are usually applied when the boundaries between phenomenon and context are blurred (Yin, 2003) and it helps us find new unanticipated directions of the research. Miles & Huberman (1994) define a case as “*a phenomenon occurring in a bounded context*” and it is emphasized that a more detailed investigation on the fit between OBA within network contexts is necessary (Kajüter & Kulmala, 2005; Suomala et al., 2010; Alenius et al., 2015). The case study is exploratory as the existing body of knowledge is rather deficit (Collis & Hussey, 2014) and it is used to explore situations in which there are no clear, single set of outcomes (Yin, 2003).

A difficulty of conducting the case study was to delimit the case and determine what it not will be (Baxter & Jack, 2008). The problem is related to the broad questions in case studies and the objectives of the study subsequently can become too many for the researchers to comprehend. To avoid the problem, we had to put boundaries on the case and only study the context in which the phenomenon was observed (cf. Yin, 2003). The different subjective realities that existed in the case also made it complex to present. The findings were difficult to summarize and we had to make judgements about the significance of the collected data.

3.2 Case Selection

When selecting the case a theoretically grounded selection was made which is preferable when conducting case studies (Eisenhardt, 1989). Consequently, in order for the case to be suitable we had two criteria that were met in the grounded selection. First, we had prior knowledge of one firm (hereafter referred to as "Focal Firm") sharing accounting information across organizational boundaries which suited the phenomenon we are investigating. Second, an industrial network could be identified.

The case study was performed in a Swedish network, with the Focal Firm as a starting point. The Focal Firm was founded in 2011 and is selling salads in supermarkets throughout Sweden. The Focal Firm is one of the actors in a network, consisting of many food-suppliers, one main Logistics Company and over 1000 customers (supermarkets in the retail industry). Therefore, it was necessary to select a sample of the existing food suppliers and customers. A sample of two customers and one large food supplier were selected, based on recommendations from the CEO at the Focal Firm. The companies were recommended due to their long-term relationships to the Focal Firm. However, it was at first difficult to find a suitable food supplier to contact.

“Today, compared to a couple of years ago, we own a large share of the products ourselves. Pretty much all perishables from vegetables to pasta are owned by the company. Chicken however, is a product we are buying from external parties and we are working with two companies, delivering tons of chicken every year”. CEO, Focal Firm.

One of these two food suppliers to the Focal Firm was therefore contacted as we deemed it necessary to find an external party without any legal interdependencies to the Focal Firm regarding ownership. The company is hereafter referred to as “Food Supplier” and the two “Customers” are simply referred to as “Customer 1” and “Customer 2”.

3.3 Data Collection

When doing case studies one benefit is the possibility to use multiple sources of information (Yin, 2003). The data was gathered through company websites, published articles in the media, internal documents from the companies (technical data integration schedules), but most data was collected through interviews. The available secondary data primarily served as a basis for a richer understanding of the industrial network.

3.3.1 Interviews

An advantage of collecting data through interviews is that the researcher can more easily assure that the results reflect the phenomenon that is being studied (Collis & Hussey, 2014) and interviewing is a way to collect primary data and simultaneously gain knowledge from individuals. Respondents from all the different actor members in the network were interviewed, interviews were semi-structured and open questions were asked. Semi-structured open interviews were held to let the respondent feel free to stray from the question form when he/she felt it was necessary, but also for us as interviewers to ask questions appropriate for the conversation. Semi-structured interviews are appropriate when the respondents knowledge about the research topic are not well known in advance and the interview structure helps ensure that no important areas are left out (Collis & Hussey, 2014).

The first respondent was the CEO of the Focal Firm. The CEO suggested some people at the Logistics Company we could contact and other key persons at the Focal Firm. These respondents in turn suggested the interviewed Customer respondents and a respondent at the Food Supplier company. In effect, the choice of respondents for the interviews followed a snowball sampling process (Eisenhardt, 1989). This process helped us to reach a target population, where some degree of trust was required to initiate contact.

Six of the interviews were held face-to-face with the respondents and the other two interviews were held over telephone. A short explanation of the phenomenon OBA and the industrial network approach was presented before each interview. A picture was also shown over how the relationships were connected into an industrial network in the observed case. It was preferable to conduct interviews face-to-face to assure that the respondents grasped the research, but also felt comfortable answering complex and sensitive questions (cf. Collis & Hussey, 2014). All interviews were held in the respondents native language (Swedish), recorded and later transcribed in order to get a documentation of the empirical evidence. Some authors suggest that non-recording interviews is expected to encourage the respondents to answer more freely (Kajüter & Kulmala, 2005), but we deemed it important to record and transcribe the interviews to be able to analyze the data a second time if necessary.

<i>Interviews</i>	<i>Company</i>	<i>Interviewee</i>	<i>Experience</i>	<i>Length</i>
1. Face-to-Face	Focal Firm	CEO	CEO in Focal Firm last four years, with experience from the logistics industry.	60 min
2. Telephone	Logistics Company	Key Account Manager (KAM) and Project Manager	KAM for Focal Firm and both experienced OBA project managers.	30 min
3. Face-to-Face	Customer 1	Store Manager	Many years' experience as store manager in the retail company.	30 min
4. Face-to-Face	Customer 2	Market Assistant	Several years' experience from selling the Focal Firm concept in the store.	30 min
5. Telephone	Food Supplier	Partner	Many years' experience from the food industry and working with Focal Firm.	30 min
6. Face-to-Face	Logistics Company	KAM, Controller, Customer Service	All involved in the relationship development with Focal Firm past year.	120 min
7. Face-to-Face	Focal Firm	CFO, Responsible Accounts Receivable/Payable, Customer Service	Many years' experience as accountants. No previous experience of OBA.	60 min
8. Face-to-Face	Focal Firm	Purchasing Manager and Purchasing Administrator	Several years' experience from the food industry. No previous experience of OBA.	60 min

Table 1: Information about the conducted interviews and respondents.

3.4 Data Analysis

Data analysis was conducted as the case unfolded. First, interview transcripts and secondary data were used when writing about the industrial network creation. Second the connection between the substance layers (activities, resources and actors) were analyzed in order to understand how the interdependencies had been created in the outlined network. The interdependencies were divided into the four different groups of interdependencies (Technology, Knowledge, Social relations and Administrative routines & Systems).

When the interdependencies were identified, we continued to observe how these are managed when trust-building and cost management of OBA support one another, by conducting a qualitative content analysis (Jacoby & Siminoff, 2008). The three characteristics of trust-building (trust, commitment and cooperation) and the four characteristics of cost-management (control, coordination, communication and joint problem solving), identified from OBA literature, were used as coding units (Collis & Hussey, 2014) when analyzing the interview transcripts. A qualitative content analysis is preferable in a data review when trying to better understand a phenomenon and is suitable when reading through interview transcripts thoroughly (Jacoby & Siminoff, 2008). With the characteristics of OBA as coding units, it was thus possible to analyze how trust-building supported the cost-management, but also how the cost-management in turn supported trust-building.

3.5 Evaluation

Scapens (2004) emphasizes that the procedural reliability, contextual validity and transferability are of importance when conducting a case study.

The procedural reliability refers to the appropriateness of the data collection method and concerns the recording of all empirical evidence in comprehensive notes (Scapens, 2004). Hence, for every interview, an interview guide was used and all gathered data through interviews were recorded and documented. All respondents were presented with the empirical material and given the opportunity to make comments. This did not result in any significant changes, ensuring the reliability and quality of data.

This case study relies heavily on the respondents stories and opinions, which lead to risks of reliance on that respondents are not always entirely forthcoming or able to review past events. To ensure data quality, several respondents were interviewed about similar issues. By using multiple respondents it is possible to assure that the study adequately captures what is intended and the contextual validity can be enhanced (Scapens, 2004). The available secondary material was used when possible to assure that the respondents' claims were accurate and using multiple sources of evidence increases the validity (Yin, 2003).

Transferability is often referred to as the similarity between two different contexts (Scapens, 2004) which may be difficult to evaluate until tested in another case. The general purpose of an exploratory case study is simply to achieve transferability through theoretical or analytical generalization (Yin, 2003). To support this purpose, the study is grounded in an established theory and a review of the existing literature was conducted.

4. Empirical Evidence

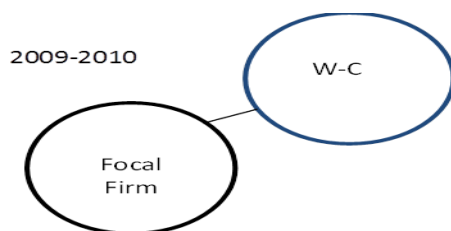
This chapter begins with (4.1) a background to the industrial network creation. In section 4.2, the interdependencies are outlined by explaining how the parties are operating within the network and it is simultaneously emphasized how the network members are using OBA. Finally, in section 4.3, it is further explained how the interview respondents perceive OBA and how it has been used to build trust and manage costs in the network. The last section will later be used to analyze how OBA is used to manage the interdependencies in the industrial network.

4.1 Industrial Network Creation

Here, it is explained how the Focal Firm was founded and how they initiated their dyadic relationships with the network members, leading down to the industrial network creation.

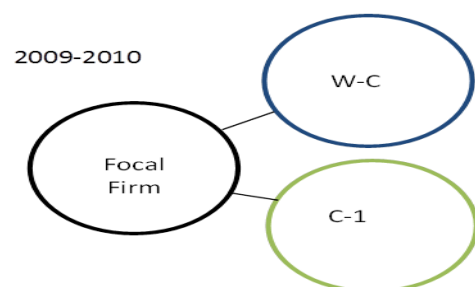
4.1.1 Development and Creation of Focal Firm

The ideas of the Focal Firm were developed in 2006 by an entrepreneur that was dissatisfied with the limited options of finding a good, quick and healthy lunch alternative. The entrepreneur got the idea of creating a concept and selling salad in bulk, but it was not more than an idea until 2009 when the concept first was tested in a retail store. The Focal Firm bought a carriage to store the products in and placed it in the test store. The test continued over 2009/2010 and logistics, order confirmations and sending invoices to customers were managed by a multinational Wholesale Company. The Wholesale Company sold the Focal Firm concept in retail stores and gave the Focal Firm a kick-back, based on how many products the retail stores bought. In 2011, the Focal Firm was created and it became the first fiscal year of the company. The CEO of the Focal Firm explained the importance of high demands on content and food security in the food industry and emphasized that it was necessary to collect the experiences and comments from consumers and stores for several years before the concept was launched. The company had a strong conceptual idea of selling salad in bulk, but in 2011, the company still merely consisted of a sales force and many functions/activities were outsourced and handled by external parties. The Focal Firm was owner and seller of the concept, but the economy was also handled by external consultants. The CEO was recruited in 2012 and the Focal Firm has since then re-taken many functions and activities. An ERP-system has been implemented, an accounting department has been established and the rights to the developed carriage have been acquired. Most perishables are today owned by the Focal Firm; they have regained control over the logistics and own a warehouse. The Focal Firm now exists in over 1000 stores in Sweden and is today more actively involved in the supply chain.



Relationship is initiated with the **Wholesale Company**.

Figure 4



Concept is tested in a retail store. Relationship is initiated with **Customer 1**.

Figure 5

4.1.2 Focal Firm and Food Supplier

The relationship between the Focal Firm and the Food Supplier developed about five years ago when the previous purchasing manager of the Focal Firm started looking for alternatives to develop the purchasing processes. At the time, the entire process was poorly developed and there was a need to enhance the purchasing functions of the company. Representatives at the Focal Firm recognized a need to put more pressure on their suppliers and therefore looked for parties, able to meet their customized requirements. The purchasing manager turned to the Food Supplier in question, being the leading supplier of imported meat-products in Scandinavia with the vision to create long-term relations with customers and a supplier with good reputation around both customers and consumers. The purchasing manager of the Focal

Firm had some personal contacts within the organization from previous experiences and was able to set the terms for the relationship as explained by the partner at Food Supplier:

“The purchasing manager and I worked together back in the 1990s. Our company simply had an option that fitted well with this new concept they were developing and we managed to match the expectations of quality and price. Since then, we have developed the relationship and are delivering chicken in very large volumes”.

The Partner of the Food Supplier continued to emphasize that the Focal Firm is a significantly more complex customer to them than many of their other customers are and it requires both time and resources to meet their demands. At the same time, he states that their entire organization is dependent on the customer requirements:

“It is actually very easy, they need support to develop a product, but also feel comfortable enough to choose us as a supplier. It requires a great deal of time, developing the customer-supplier relationship. It is about creating a relationship filled with trust where the parties do not try to take advantage of each other”.

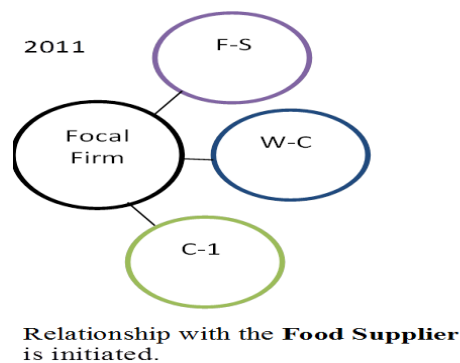


Figure 6

4.1.3 Focal Firm and Customers

The sellers of the Focal Firm visit every new potential customer in their stores and are thus responsible for the relationship initiation. The CEO of the Focal Firm explained that the manager of each specific retail store decides if they want to sell the concept in their store or not and their retail company board is usually not involved in the discussions. The board can potentially tell the manager that they are not allowed to sell the concept in the store, but that has never happened earlier. The boards of the retail companies can however put pressure on the Focal Firm. The CEO at Focal Firm explained:

“We have built our entire business by having a close long-term customer-oriented approach. Retail companies are probably the strongest customers you can find and we are always at a disadvantage in discussions with them. There is a huge pressure to deliver and the customer care much about the potential profits. As long as we are the most profitable option for them and can contribute to their business, they are satisfied. Long-term relationship development is required to develop strong bonds”.

The Focal Firm have today about a dozen salesmen in Sweden, each responsible for a specific region/district. Every single customer has a specific seller, working as a contact person when there are problems or questions. The Customers have not experienced that the concept is interfering with the sales of other goods in their stores which is emphasized by the store manager at Customer 1:

“We sell about 100 portions salad per day and it does not interfere with other sales. It is a good lunch product. It is possible that you lose a little in the sale of other finished meals, but I

myself have not noticed any difference. The sale of the salad simply becomes an income beyond the ordinary operations”.

Customer 1 was the first customer ever of the Focal Firm and is today still functioning as the “test store”. It basically means that every new product is tested in Customer 1's store before it is introduced on the market. The relationship has developed over several years and the communication between the Focal Firm employees and the store manager of Customer 1 is good. The store manager explained that the relationship has stretched over many years and the manager has therefore been able to develop strong bonds to several of the employees at the Focal Firm:

“The communication is very good, but we are also a “test store” and their first customer ever so it is not strange. It is noticeable that it is a company with great success and the Focal Firm employees are very competent”.

The relationship to Customer 2 was developed several years later, a few years after the Focal Firm was created. The market assistant at Customer 2 gave her view on the Focal Firm concept:

“We have had their products in our store for about three years now and we have earned a lot of money on the concept. Our seller from the Focal Firm recently told us that we are one of the stores selling the most salad in our district”.

The Market assistant working at Customer 2 explained that the relationship to the Focal Firm is much based on the relation to their salesman. They have a great communication and the seller is frequently visiting the store to ask for input on new products and guiding them in questions concerning the carriage and product sustainability. She explained the differences between Focal Firm and a previous concept Customer 2 tested:

“Previously we were trying a similar concept, developed by our own retail organization, but the logistics must have been poorly developed because we never got the right volumes we ordered. The concept of the Focal Firm is much better, which is obvious when we are looking at the profits”.

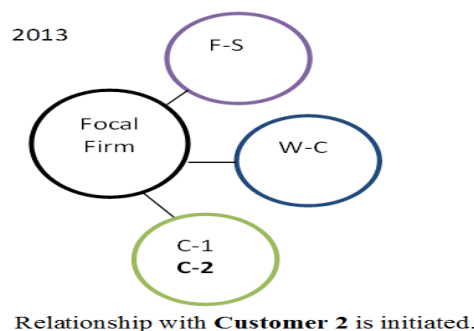


Figure 7

4.1.4 Focal Firm and Logistics Company

The new CEO had worked for many years in a competing retail company and had established strong social relations to the Logistics Company. The Focal Firm had at this point also started experiencing some struggle with a big customer as they were concerned about the opportunistic behavior of the former Wholesale Company. The CEO at Focal Firm described the situation:

“The reason why we had to leave the Wholesale Company was related to that one of our customers did not want them to be the distributor. This Wholesale Company is owned by a competitor and it became politically impossible to continue using their services”.

The Focal Firm concept was early successful and the company quickly became an established actor in the retail market. The Wholesale Company therefore wanted to take a greater part of the gains. The costs were thus another reason to why the Focal Firm started to look for another logistics partner. The Partner at Food Supplier expressed his thought regarding the exchange from the Wholesale Company to the Logistics Company:

"I can really only speculate as to why the Focal Firm chose a different logistics partner, but I believe that it was important to get an independent party in the supply chain. There are really two things that I think is behind the change: One is of course the costs, but the second is to create an independent platform where the parties involved do not feel that there is anything controversial".

The discussions about finding a new logistics partner started early and in spring 2013, the Focal Firm started having some serious discussions with the Logistics Company, about a future collaboration. The discussions continued for about a year and in spring 2014, a contract was created and signed. At this point, there was still a long way to go since the Focal Firm did not own the sold products and had limited information about the supply chain. The parties had difficulties understanding each other's business and there were many questions concerning the supply chain structure. The physical operation therefore went live first in January 2015. The Focal Firm could then simultaneously terminate the relationship with the Wholesale Company. Difficulties were explained by the project manager at the Logistics Company:

"The implementation project started in the summer 2014 and it was pretty much that had to be established before we could go live. The Focal Firm went from a wholesaler to us and we needed to gather a lot of information about the products, since those were owned by the Wholesale Company and not the Focal Firm. The Focal Firm employees had limited information and the available statistics were difficult to understand".

The Logistics Company is well known for their abilities to create competitive advantages for their customers in the food industry, through flexible and efficient logistic solutions. Apart from the fact that customers and suppliers to the Focal Firm were concerned about the relationship with the previous Wholesale Company, the Focal Firm CEO saw these opportunities with the Logistics Company. The CEO stated that there was a need for a new logistics partner with a comprehensive geographical coverage over the Scandinavian market, but also a partner with high quality and knowledge of storing food.

The aim was to create a long-term relationship with the Logistics Company and the CEO of the Focal Firm emphasized that the long-term development is important:

"There must be a win-win situation in the relationship. They have to feel that they are winners and we must know that we are winners, in order to have a good long-term partnership. We are probably a quite demanding customer, but we are probably also a customer that gives something good back".

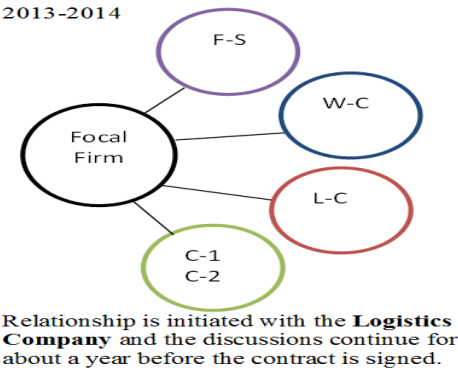


Figure 8

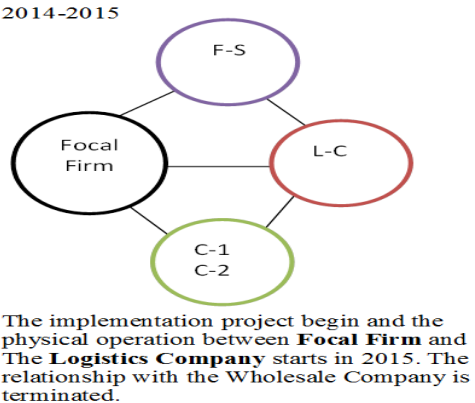


Figure 9

4.1.5 Timeline Summary

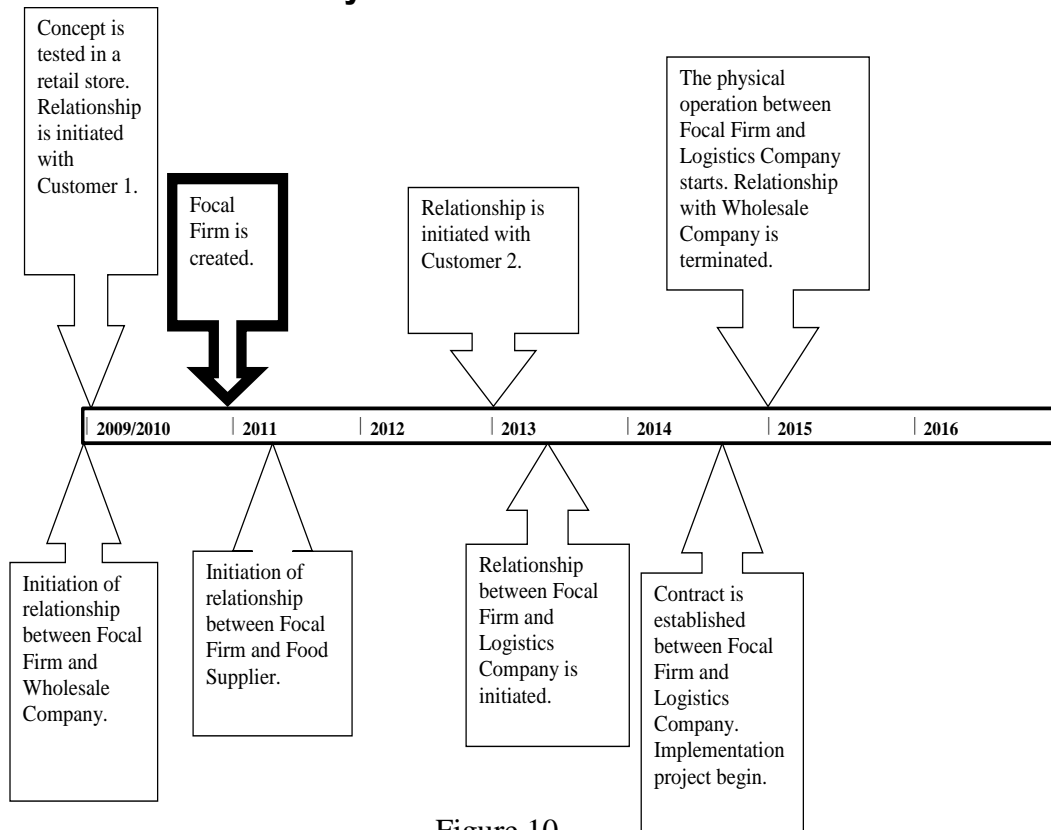


Figure 10

4.2 Interdependencies and Open Book Accounting

In this section it is explained how the network's actors are operating and using OBA. The focus is on the dyadic relationships between the Focal Firm and the actors, but also the embedded relationships between the Logistics Company and the Food Supplier/Customers.

4.2.1 Focal Firm - Logistics Company

The physical operation between the Focal Firm and Logistics Company went live in 2015. In the contract several details were outlined. The Focal Firm owns the warehouse and sends the invoices to customers, but it was decided that Logistics Company should purchase goods from the food suppliers, handle goods reception, match and pay the invoices from food suppliers (with money from the Focal Firm accounts). The Logistics Company is also in charge of picking the customers' orders from the warehouse, distributing the ordered products to the customers, handle reclaims of goods from customers and support the customers in questions concerning deliveries. All these activities were outsourced to the Logistics Company due to their knowledge and expertise in these areas. In order to handle activities efficiently, the Logistics Company was provided insight into the Focal Firm supplier and customer prices. The parties have been working with this transparency since the physical operation began and at first there were uncertainties, according to the CEO of the Focal Firm:

“We discussed a great deal about which party that should be responsible for which activities and decided that we should not be focusing on anything concerning the logistics. We wanted a professional partner to work with the logistics and our conclusion was that the Logistics Company did not have any commercial advantage of knowing our prices”. However, these things are also strictly regulated in the contract, and there were absolutely people in our organization that did not believe in this relationship from the beginning”.

The Logistics Company has used OBA in relationships with other customers for several years and even though the solution for the Focal Firm is customized for their specific requirements, the people at the Logistics Company possess great knowledge from working with OBA, according to the KAM at the Logistics Company:

“We have not reflected over the information received and OBA is a normal phenomenon in our business. We have never felt any concerns from the Focal Firm”.

The KAM of the Logistics Company explained that their role is to work as a control function for their customers. The Focal Firm sets the contract with their own suppliers, but provides the Logistics Company with required information on the products, such as prices, weights, product sustainability and measures of the packages. All this information is collected and presented in a master file by the Focal Firm. The Logistics Company employees are also actively involved in the mail correspondence when the Focal Firm's employees negotiate with new potential suppliers. With this sort of information at hand, it is easier for the Logistics Company employees to decide the inventory levels and understand the Focal Firm business development. The Focal Firm employees are simply handling the accounts receivable but employees at the Logistics Company is matching the invoices from food suppliers and has responsibility for the inventory. The integration is rather complex because the Focal Firm has the inventory and the accounts payable in their balance sheet and the companies have to match the systems in order to assure that the accounts balance. The CEO of the Focal Firm explained that organizational boundaries have been blurred and it is sometimes uncertain who is responsible for the cost when the accounts deviate:

“Since they are handling the inventory everything must be done the exact right day. If there is only a small error with one delivery, our result is affected and this is something we have been struggling with”.

In order for this collaboration to be effective it is important with computer system integration where both companies can share information. The Focal Firm's ERP-system is therefore electronically interchanged (EDI) to a WMS system (warehouse management system) and a SCM system (supply chain management) of the Logistics Company. Through the electronic interchanges between the ERP-system and the Logistics Company systems, the companies' employees are able to balance the inventory. The employees at the Logistics Company continually update the inventory at hand when products are entering and leaving the warehouse. Through the systems, the companies are able to match the inventory against the received invoices from the food suppliers. The invoices are scanned and documented and paid according to the due date if the Focal Firm approves the invoices. Through the EDI between the systems, the companies' employees are able to monitor the changes in the inventory and simultaneously control that the food suppliers' invoices are correct. The Focal Firm accountants are thereafter transferring money to a bank account, jointly handled by the companies. The food suppliers' invoices are paid by the employees at the Logistics Company, from this account.

The relationship between the Focal Firm and the Logistics Company has created a great dependence on each other's human resources and competence. The Focal Firm employees possess competence within the food industry and knowledge about the different products, while Logistics Company employees possess the knowledge and resources to handle the logistics and distribution. According to the KAM at the Logistics Company, an early challenge Focal Firm and Logistics Company faced was when delivering goods in the northern part of Sweden:

“Different goods need different temperatures when delivered and e.g. salad could not stand the cold and was destroyed when unloaded from the trucks at the retailers who did not have closed loading spaces”.

The KAM further explained that this was a situation when the Focal Firm and Logistics Company jointly had to come up with a solution in order to avoid goods going to waste, and this has not been an uncommon occurrence:

“Focal Firm is a demanding customer, but they do have knowledge about storing food and it is very developing for us to work with them and take part of their knowledge”.

The CEO at Focal Firm agreed with this statement:

“The dependence on each other’s competence is huge and I believe both parties have learned a lot from this relationship”.

4.2.2 Focal Firm – Food Supplier – Logistics Company

The main idea of the Focal Firm concept is to work with food suppliers, able to turn raw material into a finished product, without intermediaries. With an efficient Logistics partner, the Focal Firm is then able to deliver the finished product directly to their customers. The Focal Firm and the Food Supplier have a stable buyer-supplier relationship. The Focal Firm is ordering one single article of chicken, but in very large volumes. Together they have developed a particular package for the product, suitable for storing and picking from the warehouse. It was necessary to develop this sort of package, since the Focal Firm is directly working towards the retailer without any intermediaries and it was also important to support the Logistics Company in handling the logistics. The partner of the Food Supplier explained that they are well aware of the requirements and has worked jointly with the Focal Firm to meet the expectations:

“The solutions for the Focal Firm are customized and we have to work together to reach the best possible outcome. They have to be a part of the product development and we as suppliers cannot take a single step without their approval. The important part in our case is to ensure the Focal Firm that we have the resources accessibly to actually help them develop the concept”.

In order to develop the best possible concept, it is important that the involved parties are focusing on their core competencies in the supply chain. The parties are exchanging accounting information, but the information exchanges have mostly been about optimizing the supply chain and facilitate the logistics flows, according to the partner of the Food Supplier:

“We have mostly received information from the Focal Firm. It has helped us understand their entire business and we have got more transparent and open discussions about costs concerning the logistics. Many discussions have been about which party that takes the different costs in the supply chain”.

The Focal Firm and the Food Supplier employees are in contact on a regular basis, but discussions today are more focused on administrative issues, while the Logistics Company is responsible for the purchases and are consequently in contact with the Food Supplier concerning operations. The contact between the Focal Firm and the Food Supplier employees is important when questions arise around processes, projects and product packages. The employees at the purchasing department at the Focal Firm compile information in form of sales forecasts and statistics, provided to the Food Supplier employees on a regular basis. By sharing such information, the Focal Firm employees are able to support the Food Supplier employees in the preparedness for upcoming purchases. The same information is provided to the employees at the Logistics Company. The Focal Firm and the Logistics Company further

try to determine the expected inventory levels. The Focal Firm CEO emphasized that the information exchange is mostly regarding the logistics:

“We are ordering large volumes, but the margins are very thin. It is more important for us to share information to actually optimize the logistics. It is important to move backwards in the supply chain and try to understand the suppliers. This is where open books are suitable, as a way of helping us to understand the entire supply chain. It becomes much easier for us to have an impact if we understand each other”.

The partner of the Food Supplier stress that open discussions and the possibility to share information is important in order to actually support the collaboration in a healthy business environment. Their company has always strived to reach a situation where they are able to create value for their customers. By sharing information, the parties are able to increase the knowledge of each other’s business and in a complex environment, it is important that the involved parties focus on their competencies to optimize the supply chain.

The CEO emphasized that the Logistics Company is very important in creating an efficient supply chain and that the supply chain improved when the new Logistics Company entered the supply chain. It was emphasized by the Food Supplier partner that they have been able to reduce their costs significantly because it is possible to deliver the products directly to the warehouse of the Focal Firm. The CEO of the Focal Firm continued to emphasize that the dependencies on knowledge and competence between the Focal Firm, the Logistics Company and the Food Supplier is evidential:

“The Logistics Company is responsible for purchasing products from the Food Supplier and they are able to impact the potential wastes by improving the competence in their organization. However, we have to support the Logistics Company because the people at our own purchasing functions have more knowledge about our suppliers and products than the Logistics Company”.

The partner of the Food Supplier explained that the communication between them, employees at the Focal Firm and Logistics Company is working very smoothly and that the information is very clear. The Food Supplier has used the Logistics Company for many years in other business and felt comfortable about them entering the supply chain. The partner of the Food Supplier explained that the direct contact with the Logistics Company is rather simple:

“It is not complicated. We have a person responsible for taking orders from the Logistics Company and we start the manufacturing as soon as the order is approved in our system. We set a date and the employees of the Logistics Company come to pick up the ordered products”.

4.2.3 Focal Firm – Customers – Logistics Company

The Customers are ordering the products through a portal at the Focal Firm web page. Every customer is given an individual log-in for their specific store. At the web page, the Customers choose a desired delivery date and there is a large planogram over all the products available to order. The Focal Firm is frequently upgrading the planogram when new products are available and the Customers are able to follow their own order history if they are uncertain about what they have ordered in the past. Every time a new order is approved, it is directly transferred to the Focal Firm ERP-system. The data is electronically interchanged (EDI) to the Logistics Company WMS-system. The Logistics Company employees are thereafter picking the order in the warehouse and distribute the order to the Customers.

If a customer wants to reclaim products from a delivered order, the Logistics Company customer service supporters are exhibiting a credit note. The CEO of the Focal Firm explained that they usually take the cost for exhibited credit notes:

“If something has happened during the delivery, the Logistics Company is responsible, but if something is wrong with the product from the beginning, it is the Food Supplier’s responsibility. We have had discussions about how to divide the reclaim costs, but it is a difficult issue”.

The CEO further explained that they do not believe that customers try to take advantage of the possibility to make fault reclaims, because it is more profitable for them to actually sell the products in the store. However, the Focal Firm and the Logistics Company have statistics on the issued credit notes to assure that a customer do not take advantage of the system:

“If a customer wants to foul us, they are able to do so at a single occasion possibly, but if a particular customer is making reclaims on a regular basis, our statistics will show us it and we will investigate together with the Logistics Company if the reclaims are accurate or not, by looking at the delivery status of the products reclaimed”.

The Customer respondents are satisfied with the developed order-system and the ability to decide themselves what to order without any interference from the Focal Firm. The Customer respondents are however dissatisfied about the extremely hard deadlines they have to keep when making an order:

“The deadlines are really tough and we have a big responsibility as customer to have a good appreciation about what we need in the store in about two days ahead. I once missed the deadline with 5 minutes and desperately called the Logistics Company, but there was absolutely nothing they could do”. Market assistant, Customer 2.

“If a miss the deadline with 5 minutes, there is absolutely nothing to do. I understand that there has to be such strict deadlines, but it is difficult to make an appreciation about what I need in the store several days ahead. I think they should try to improve the lead times”. Store manager, Customer 1.

The order must be approved by the Customers, at least two days before the delivery date. The deadlines are clearly visible in the ordering system and when the deadline has passed, the customer cannot add additional products to the order. It is still possible to cancel the order and conduct a new, but the delivery date is thus thrust forward. The Customer respondents have been given the Focal Firm some input on this matter, but limited input on the product development. Their perceptions about employees at the Logistics Company were also lifted:

“I think it is very obvious that the Focal Firm possesses great knowledge about product development and they are very innovative with many ideas. I have therefore not given them any input on how to develop the products. The driver that delivers the products to us is very good and it is nice because we have had some problems with logistics companies in the past. He is always delivering the products on time and makes sure that we are satisfied with everything before he leaves”. Market assistant, Customer 2.

“I think the employees at the Focal Firm seem to be a group of people with many ambitious ideas about how to develop the concept. It is noticeable that the Focal Firm is performing well and I trust their knowledge in the product development. I perceive the Logistics Company to be very competent. I only contact them if I want to reclaim a product, which usually never happens”. Store manager, Customer 1.

The Customer respondents explained that having the concept is actually very easy, but also time-consuming. The Focal Firm employees expect that the Customers take full responsibility

for the carriage, by cleaning the carriage regularly and only sell fresh products that have not passed the sustainability date. The Customers are simultaneously not allowed to sell other products in the carriage, than those ordered from the ordering portal. To assure that the Customers take good care of the carriage the customers do have the possibility to buy the carriage from the Focal Firm instead of renting it. The Customers can also receive an annual bonus, based on how much salad the Customers sell during a fiscal year. These sorts of incentives are rewarded to assure that customers represent the concept as desired and actually take care of the carriage, which is appreciated by the store manager of Customer 1:

“Taking care of the carriage is time-consuming, but it is necessary if you want to sell much. I think the great advantage of the concept is that the involved companies focus on what they are good at and it is therefore impossible to continuously improve the supply chain. It is important as time is the most important asset in this industry. I have no problem, taking care of the carriage because there is a lot of money to gain on the concept”.

The Focal Firm is not using OBA in the relationship with their Customers and the Customers retail boards have not had that sort of demand on the Focal Firm. The Customers organizations have their commodity analysts, constantly following the price developments of different products and pressure the Focal Firm to follow the current prices on the market. When the Focal Firm prices are different than those on the market, the Focal Firm employees has to negotiate with the retail company and explain their situation and the reason behind the deviations from the market. The Focal Firm CEO explained why OBA is not used with their Customers:

“Open calculations require a commitment in both ways and our customers are very competent actors within the industry and know more about the market prices than we do. If we have to increase our prices due to increased prices on the markets, they are well aware of that and if they do not agree with us, they do not accept the prices”.

4.3 Open Book Accounting Managing Interdependencies

When the Focal Firm and the Food Supplier have exchanged information to optimize the logistics, they have been able to improve the cooperation and establish trust in an environment where the parties do not try to take advantage of one another. The value is deemed to be created when the parties use OBA to better understand each other’s business and the partner of the Food Supplier explained that by combining knowledge and competence, the parties have the possibility to create value for one another:

“When you are sharing information, you are able to work with each other’s strengths and we have tried to build our entire business on creating value for the other party. It is never about finding the cheapest product, but using each other’s knowledge to improve the purchasing functions and optimize the logistics. It is much easier to meet the challenges when you are cooperating”.

The current purchasing manager of the Focal Firm explained the importance of information sharing when the parties cooperated to develop the product package. The sharing of information was vital, since the Focal Firm required a customized solution with the primary objective of improving the supply chain and making it more efficient. The Food Supplier employees had to enlighten the Focal Firm about the specific requirements concerning the product sustainability. The purchasing administrator further explained that the Logistics Company employees also provide substantial input about how to develop the new package and emphasized that the Logistics Company employees are continuously providing professional improvement suggestions due to their expertise in these areas:

"We felt there was a need to jointly develop a new package since it optimized the logistics and also greatly reduced our costs. The new package has made the logistics much more efficient, since greater volumes can be stored and distributed, which has created a win-win situation for all actors". Purchasing manager, Focal Firm.

"The people responsible for the purchasing functions at the Logistics Company have formed a well-functioning team and there has not been a high staff turnover which facilitates the communication process. I feel that we therefore have created great trust in each other's abilities". Purchasing administrator, Focal Firm.

The respondents of the Logistics Company explained that an important part about OBA is to make sure that their customers feel comfortable about sharing accounting information with them. The Controller at the Logistics Company explained the importance that customers believe in their competence and understand why it is important to share information:

"Spontaneously, I feel that it is more important that the employees at Focal Firm believe in our competence. I believe that the more I have worked together with the Focal Firm employees at the accounting department, it has become much easier to understand each other and trust has been established as we have worked jointly and learned from one another".

The purchasing manager of the Focal Firm also stated that trust is established when OBA supports the mutual understanding. As information is shared to increase the understanding, trust is created and the risks of opportunistic behavior can be reduced.

The CFO in the Focal Firm explained that the trust in employees of the Logistics Company is related to their relationship commitment. The trust is deemed to be bound to the person in question, according to the Focal Firm's CFO:

"I think that the controller of the Logistics Company is very committed to the relationship. We have however had three different accountants during the last year and it has always taken some time before the person is really committed to what we are doing. We do not have to start over from the beginning because processes and routines are well established today, but it always takes some time before you trust a new person".

The CFO of the Focal Firm experienced that the biggest problem about OBA has not been to be able to trust the Logistics Company competence or intentions, but actually understand their business. The CFO experienced that sometimes, the problem is related to the limited knowledge about logistics. The same problem was highlighted by the customer service supporter at the Logistics Company:

"The Focal Firm has a strong salesforce, but we have experienced that some sellers' knowledge about logistics is rather limited. As we are working closely with the sellers and indirectly their customers, it is important to quickly help them understand our business and thereby create a trust".

The purchasing manager of the Focal Firm has experience from working with logistics improvements and emphasized that it was necessary to use OBA in the relationship, due to the supply chain structure. The purchasing manager believed that OBA has supported the activity coordination and the possibilities to work jointly to solve problems:

"I think it is very natural that parties become more committed as an understanding for the business is developed. We had a situation last year when there were struggles with the customer ordering portal and the Logistics Company customer service basically re-

coordinated their entire customer support functions to solve the problems for our customers. It saved us from some costs”.

The customer service supporter of the Focal Firm expressed satisfaction and trust with especially the customer service at the Logistics Company. There have been some problems in the past, related to the integration, as the data is differently presented in the IT-systems. Hence, it is important that the data is coherent and can be reflected in both systems and they have learned to work together and solve upcoming problems. The customer service supporter of the Focal Firm has therefore visited the Logistics Company to better understand their system and how they are working. It was deemed necessary to receive this knowledge and it has improved the communication to the Focal Firm customers:

“I do not think that the cooperation will improve if we separate ourselves from the Logistics Company. In the end, we as customer service supporters are working towards the same customers and their satisfaction is the primary mutual goal”.

The CFO of the Focal Firm simultaneously pointed out that there will always be difficulties with OBA as long as the parties are working in two entirely different ERP-systems. The same concern was lifted by the Controller of the Logistics Company:

“The Focal Firm is responsible for the accounts receivable and we are responsible for the purchases, the accounts payable. Some things are lost in translation and difficult to comprehend because we only see one side of their balance sheet”.

The communication is consequently deemed to be essential to reach a mutual understanding, according to both the CFO of the Focal Firm and the Controller of the Logistics Company. The cooperation has improved further when OBA has been used to understand one another, but it is tricky to appreciate the problematics of the ERP-systems. The accountant responsible for the accounts payable at the Focal Firm agreed that the use of OBA has supported the cooperation, but at the same time stressed the need to make the information understandable:

“I think our cooperation is winning when information is shared, but it is very important that the information is understood. This OBA cooperation is no good if we cannot communicate the information appropriately to each other”.

The Focal Firm is functioning as a link between the Food Supplier and the Logistics Company when questions arise concerning prices and negotiations. OBA is deemed to have created a better cooperation between the three parties and the increased transparency has supported the communication. In the relationship with the Wholesale Company, the Focal Firm employees had limited knowledge about the products and the supply chain process. The cooperation was very vague and consequently, the communication was restricted to merely concern sales. The Purchasing manager at the Focal Firm explained the importance of OBA:

"I think it was decided to use OBA in the relationship with the Logistics Company, in order to regain control over the supply chain costs, something we didn't have when working with the Wholesale Company. This OBA cooperation is customized for us as we still can own the warehouse, even if they are handling the logistics".

People at the purchasing department of the Focal Firm put pressure on the Logistics Company to work jointly with them to create mutual value. The KAM of the Logistics Company explained that if information is shared, it is possible to create a consensus, a mutual understanding for the different businesses and respect for the other party. All these things are possible when the parties trust one another. Working with OBA is simultaneously difficult as

it requires a lot of efforts to understand the differences in each other's business. It requires both time and resources to find ways to transfer information between the parties and the cooperation has improved over the past year as the information today is shared faster compared to when the relationship began. It is due to the improved system integration and as the information has become more readily available through the systems, it has become easier to gain control over the accounting numbers and derive deviations. The realities of the involved parties are different and communication is required to understand the different realities, according to the customer service supporter at the Logistics Company:

"I have established a greater trust in especially some employees of the Focal Firm as we have communicated a great deal about different issues that neither party initially understood. Especially the sellers do not understand the logistic aspects of some problems and I think the open communication has been very good from both parties and we have learned to cooperate to figure out the problems".

The respondents of the Logistics Company simultaneously explained that they are working jointly with the sellers of the Focal Firm when there is uncertainty about the customers' product reclaims. As the Logistics Company is provided with customer information from the Focal Firm, they are able to keep detailed statistics on the reclaims. The Logistics Company sends the statistics to the responsible seller and if one particular customer is reclaiming several products frequently, the seller get in contact with the customer. The customer service supporter at the Logistics Company explained another purpose with the statistics:

"Of course we do not distrust the customers because sometimes they may not understand a specific product. It is important to have this communication with the seller and indirectly with the customer, because we want the customers to trust us and the Focal Firm. I think this cooperation has supported the cost management, concerning the reclaims because we now know who is responsible for which cost".

The KAM of the Logistics Company continued to explain:

"Today, we are considering starting a new project with the Focal Firm, with purpose to reduce the number of reclaims. I think we are able to implement such projects together today because we understand and trust the Focal Firm".

From the information exchange, the Logistics Company employees have simultaneously learned a lot about the Focal Firm operations and their entire concept. The respondents explained that it has been interesting to follow the Focal Firm development. It is obvious to them that the Focal Firm is growing very rapidly and the KAM at the Logistics Company expressed that it have been difficult to keep up with everything that is happening around the Focal Firm:

"Sometimes, it feels like the information exchange is lagging behind. We live in two different business worlds and we have decided to have meetings more frequently ahead, in order to stay committed and follow the development".

The purchasing manager of the Focal Firm explained that the above matter is something the employees of the Logistics Company frequently have stressed. They deem it necessary to further improve the cooperation. Currently, the Focal Firm has a Masterfile where new information about products and prices are manually updated. The information is then sent to the Logistics Company, but the Masterfile is a big source to eventual problems because it is important for the Logistics Company to continuously update their system when changes occur. The companies has discussed about possible solutions to get around the problem:

“I think that the best thing would have been to have a fuller integration between our ERP-system and the ERP-system of the Logistics Company. Then, the Logistics Company could have access to the required information faster”.

The KAM of the Logistics Company pointed out that they are usually encouraging their customers to work with the same ERP-system as they are, in order to facilitate the implementation and IT integration. When operating in the same systems, it is possible to reach a more fundamental understanding of the systems. It was simultaneously explained that there are some resistance to invite their customers to their system and problems related to the system integration:

“I think it is a question of maturity from our side. We want customers to work in our system, but there are always concerns about system security”.

The Focal Firm respondents simultaneously pointed out that they could gain further advantages if OBA was used in both directions. According to the customer service supporter of the Focal Firm, if the Logistics Company shared information with the Focal Firm, it would definitely support the employees understanding of the logistics and other administrative routines handled by the Logistics Company. With such information at hand, it is deemed much easier to understand the logistics and the individual role in the supply chain:

“I receive some invoices with many specification pages and these are difficult to understand. I once calculated the weight and tried to compare our results with the invoice. It turned out that we measured the product weight in two different ways. This sort of information would support the mutual understanding”.

The respondents of the Focal Firm emphasized that the interest in the Logistics Company's direct cost information is rather small, but stressed that the mutual understanding clearly could be further enhanced if more insight were given into their business. However, the Focal Firm is using OBA with their suppliers, to optimize the supply chain. The suppliers understanding of their business is therefore the primary objective.

5. Analysis and Discussion

In this chapter, the research questions are chronologically analyzed and discussed by relating the empirical findings to the outlined research model. Section 5.1 is related to RQ1 and entire section 5.2 is related to RQ2 and RQ3.

5.1 Interdependencies within the Industrial Network

As seen in figure 1, interdependencies are created when the industrial network is developed and the substance layers are connected. The industrial network creation is thus first explained.

5.1.1 The Industrial Network Creation

The development of an industrial network is deemed to be a dynamic continuous changing process (Håkansson & Snehota, 1995; Håkansson et al., 2010). It is very clear from our study that the industrial network with the Focal Firm as a starting point has developed over the years from originally being several different dyadic relationships (cf. Ford et al., 2003) with unclear connections and minor interactions. The Customers and the Food Supplier believed in the Focal Firm competence, but was not satisfied about delivering products directly to a company owned by a competitor and the Customers were dissatisfied about buying a concept from a company, collaborating with a competitor. However, the Customers decided to stay in their relationship to the Focal Firm, mainly because of the possible profits. In accordance with what has been acknowledged in literature, the dyadic relationships were mainly focused on the costs between the parties, there was opportunistic behavior among the actors and the dyads were transactional in character (Lind & Thrane, 2010; Agndal & Nilsson, 2010).

The CEO of the Focal Firm had strong actor bonds with people in the Logistics Company and had trust in the competence within the company. In 2014, the Focal Firm started the implementation project with the Logistics Company and it was necessary to gather information to better understand the supply chain. As information became accessible to the Logistics Company during the implementation project, the Logistics Company got a chance to establish closer relations to both the Food Supplier and the Customers before the physical operation began. Hence, as Ford & Håkansson (2006) state, the embedded relationships between the Logistics Company and the Food Supplier/Customers were not automatically developed when the new contract was signed, but the interactions in the embedded relationships have become clearer and more intensive as the Logistics Company have worked with the parties. However, the initiation of the relationship with the new Logistics Company made it possible to establish an industrial network, since the opportunistic behavior was mitigated (cf. Håkansson et al., 2010) and as Tomkins (2001) emphasizes, trust is thereby increased. The parties are today satisfied about having an independent party in the supply chain.

When the relationship to the Wholesale Company was terminated, it simultaneously became possible to increase the transparency between the Focal Firm and the Food Supplier. Agndal & Nilsson (2010) emphasize that a win-win situation can be created when parties in a relationship start having open discussions about cost responsibilities and this is in line with the observed case where the Focal Firm, Food Supplier and the Logistics Company started having such discussions to make the supply chain more efficient.

Researchers have pointed out that many dyadic relationships tend to be at an arm-length distance (Lind & Thrane, 2010) and the Focal Firm relationships to the Customers are still partly at an arm-length distance. The Customers buy the Focal Firm concept due to the potential profits, but the trust in the actor members of the network is mostly based on their competence. The Focal Firm's Customers have a good understanding of the food prices and even if the Focal Firm and the Customers do not share information, interdependencies in the relationship between the Focal Firm, the Logistics Company and the Customers can also be acknowledged.

5.1.2 The Created Interdependencies

With the industrial network and its connections outlined, it is possible to continue to discuss RQ1 and explain how interdependencies have been created between the actor members.

Knowledge

The idea of the Focal Firm concept is built on that parties are supposed to focus on their core competencies throughout the supply chain. A particular group of interdependencies can be dominant in an industrial network (Håkansson & Snehota, 1995; Baraldi & Strömsten, 2009) and the interdependencies on knowledge are obviously dominant in the studied network and have been created in several ways.

The Focal Firm and the Logistics Company are working in two entirely different industries and needed to use one another's knowledge to understand each other's business. The Focal Firm has the knowledge about the products and supported the Logistics Company in understanding the product requirements. The Logistics Company in turn supported the Focal Firm in their understanding of the logistic activities. The resource heterogeneity is obvious in this case as the knowledge of one party is dependent on the knowledge of the other party. In accordance with previous research, this is how resources have been used to create value (Alchian & Demsetz, 1972; Håkansson & Waluszewski, 2002; Håkansson et al., 2010).

The Focal Firm and the Food Supplier have worked collaboratively to e.g. create a special package for the products. The partner of the Food Supplier explained that their job as a supplier is to estimate if they have the available resources to satisfy the Focal Firm requirements and to work jointly with them to find suitable solutions. The Food Supplier has simultaneously supported the Focal Firm and the Logistics Company in optimizing the supply chain. The Food Supplier's employees communicate directly to the Focal Firm and indirectly to the Logistics Company when processes or routines need to be changed. The knowledge has been important in the supply chain. In contrast to research, the three parties have had to work jointly to use and develop resources (Håkansson & Snehota, 1995; Håkansson et al., 2010).

The salesforce at the Focal Firm had the responsibility to educate the Customers about how to take care of the carriage and enlighten them about the products sustainability. The Customer respondents explained that taking care of the carriage is time-consuming and the Focal Firm employees needed to support the Customers in order to assure that they are able to take on the responsibility. The knowledge exchange is thus used to extend the firms capabilities in uncertain environments (Håkansson & Snehota, 1995).

The network actors utilize their knowledge to satisfy the heterogeneous demands of the other parties. Interdependencies have consequently been created, since the actors have had to combine their resources across firm boundaries (Ford & Håkansson, 2006; Dubious et al., 2004) to facilitate the flow of activities (Håkansson & Lind, 2004).

Social Relations

The actor bonds in the network are strong. Actors can consist of everything from individuals; parts of firms to groups of firms (Håkansson & Johnson, 1992) and in the studied network, many actor bonds have been created on an individual level.

Individuals at the Focal Firm have been working tightly with individuals in the Logistics Company, to efficiently perform activities and control resources (Håkansson & Snehota, 1995). The Logistics Company is working with customized solutions and the relationship to the Focal Firm is therefore different from other relationships. Social bonds between the actors have been created, to be able to meet the customized requirements.

The relationship to the Food Supplier developed shortly after the creation of the Focal Firm due to earlier bonds between individuals in respective company. A few employees at the Focal Firm's quality and purchase functions early started working very tightly with the Food Supplier's employees and looking for product options. The Food Supplier has

simultaneously confidence in the Logistics Company and have themselves used them as distributor for many years. In line with Håkansson & Snehota (1995), the developed bonds to the Logistics Company have consequently influenced how the actors perceive each other.

The customer respondents expressed a great satisfaction with the employees (especially the sellers) of the Focal Firm and simultaneously emphasized that some bonds have been established to the Logistics Company employees, distributing the products. As emphasized by Alenius et al. (2015), the interactions between individuals have affected the trust between the companies involved.

Technology

The contractual obligations were determined in 2014 and it was decided that the Logistics Company should handle all activities related to the logistics in the supply chain. Today, the Focal Firm owns the warehouse, but is dependent on the Logistics Company equipment, vehicles and employees to handle the logistics activities (cf. Baraldi & Strömsten, 2009).

This is a common technical interdependency between two parties in a relationship (Dubious, 2003). In line with Håkansson & Johnson (1992), the activities become present when resources are exchanged between the parties and as explained by Håkansson & Lind (2004), they can support one another in handling activities when resources are exchanged.

Administrative Routines & Systems

Several of the Focal Firm administrative routines have been outsourced to other actors and the companies systems are integrated to have a more efficient flow in the supply chain where the parties can interact and participate (cf. Gadde & Håkansson, 2001). The Focal Firm ERP system is electronically interchanged to two different systems of the Logistics Company and the Logistics Company is responsible for the payment of the food suppliers invoices. They also match the invoices against the existing inventory at hand and the Focal Firm and the Logistics Company together have to derive existing errors if the inventory does not balance. The Focal Firm financial resources (Baraldi & Strömsten, 2009; Håkansson et al., 2010) are used to pay for the invoices and the Focal Firm has to transfer the money to a joint bank account. The Logistics Company does the payment to the food suppliers. The ability to perform the activity is thus dependent on the resources available (Håkansson & Lind, 2004).

Customers are responsible for placing the orders through a portal. The approved order is visible for both the Focal Firm and the Logistics Company due to the electrical interchanges. If the customer wants to reclaim a product, they are directed to the Logistics Company as they are handling statistics over product reclaims. If there are suspicions about reclaims, the Focal Firm sellers are contacted to investigate further whether the reclaim is accurate or not. In line with previous research, administrative routines are linked in a similar way to how activities are linked (Håkansson & Johnson, 1992; Håkansson & Snehota, 1995).

5.1.3 Summary of Created Interdependencies

X = Created Interdependencies

Interdependencies	Knowledge	Social Relations	Technology	Adm & systems
Focal Firm – Logistics Company	X	X	X	X
Focal Firm – Food Supplier – Logistics Company	X	X		
Focal Firm – Customers – Logistics Company	X	X		X

Table 2: Interdependencies in the Industrial Network.

5.2 Open Book Accounting Managing Interdependencies

In this section, RQ2 and RQ3 are discussed. We begin with RQ2 as trust-building is deemed to come first in an industrial network and thereafter continue with RQ3.

5.2.1 When Trust-Building Support Cost-Management

In the beginning of the relationship between Focal Firm and Logistics Company there were several details that were outlined in the contract but how the physical operations would be carried out was not as clear. The previous actor bonds were essential for the start of this relationship; the existing trust was embedded in these social relations (cf. Seal et al., 1999) and it was enough for the Focal Firm to decide to share their accounting information with the Logistics Company. Opportunism is reduced through the network creation (Håkansson et al., 2010) and the existing trust consequently worked as a prerequisite to use OBA (Tomkins, 2001; Kulmala, 2002; Kajüter & Kulmala, 2005). However, the trust between the employees at the operational level was not established. Therefore, in line with literature it became important to use OBA to gain a formal control over the supply chain processes and costs (Kulmala, 2004; Cooper & Slagmulder, 2004). The formal control is deemed to reduce the need for trust and commitment towards another party (Enzle & Anderson, 1993) and in this case, it was initially more important to establish a cost management over the supply chain (cf. Mouritsen et al., 2001; Agndal & Nilsson, 2008). The focus on information, shared to create trust, was in line with Romano & Formentini (2012) limited initially, but some level of trust was created in the network development and has thus enabled the cost management of OBA (Kajüter & Kulmala, 2005).

The parties started sharing information when the physical operation began as it became essential to create an efficient supply chain. There were frequent meetings in order to develop necessary supporting functions. In line with previous studies, this was when the first step of cooperation was established and the focus on creating a win-win relationship created a greater commitment (Kulmala, 2004; Agndal & Nilsson, 2010; Möller et al., 2011).

The interdependencies on social relations have varied between employees and departments in the studied network. Trust is deemed to be bound to the individual person and the management over relations is consequently dependent on the individual person's commitment. OBA has supported this commitment as information has been shared to support the mutual understanding, but a high staff turnover has sometimes forced the trust-building a few steps back, since it is bound to the individual. However, the parties have not had to start over from the beginning since trust has been established in administrative routines. In line with previous research, the flows of information have thus supported cooperation (Mouritsen et al., 2001) and due to the implementation of routines from OBA practices, it has become easier for the parties to commit faster (Kulmala et al., 2002; Suomala et al., 2010) and jointly solve unanticipated problems (Kulmala, 2002).

In contrast to much previous literature, the most important part about OBA is to create a mutual understanding for each other's business. This is according to several of the respondents in the Focal Firm, the Logistics Company, but also the partner of the Food Supplier. An increased understanding of what is deemed to support the trust-building and the cooperation has improved from the enhanced understanding. OBA has thus worked as a vehicle for knowledge sharing (Vosselman & Meer-Koistra, 2009). The parties in the network are interdependent on each other's knowledge to improve the supply chain and OBA has been used to support the cooperation, as it has facilitated the flows of activities and resources (Mouritsen et al., 2001). It has facilitated the management over knowledge as OBA has been used to be able to work with each other's strengths and improve the cooperation, according to the partner of the Food Supplier. In line with Morgan & Hunt (1994), trust has thereby been created. Due to the OBA cooperation, it has become easier for the network members to have open discussions and establish a better management over prices and costs. The parties have

been able to jointly solve logistics problems. The increased information sharing has thus indirectly been used to reduce the supply chain costs and Kulmala et al. (2002) has emphasized from that this joint problem solving in the product development lead to significant cost savings.

OBA can be used to further enhance the commitment when parties in a network learn from each other (Kajüter & Kulmala, 2005) and commitment encourages the parties to support one another in the network (Kulmala et al., 2002). Respondents of the Focal Firm emphasized that the open system integration have supported the employees' commitment at the Logistics Company and that they worked tirelessly when there was a need to re-coordinate the ordering portal for the Focal Firm Customers. Thus, in line with previous research due to the OBA system integration, commitment has been established (Suomala et al., 2010), the coordination has improved (Dekker, 2004; Möller et al., 2011), it has been possible to save Focal Firm from costs (Carr & Ng, 1995; Copper & Slagmulder, 2004) and administrative routines & systems are managed.

According to respondents from Focal Firms accounting department the mutual understanding could be further enhanced if they were granted insight into the routines of Logistics Company, but there has been unwillingness to provide this insight. In contrast to Kulmala et al. (2002) and Suomala et al. (2010), it could indicate that there is still a lack of trust from their behalf. It could also indicate that there is room for improvements regarding the management over interdependencies since there is more information that could be shared in order to enhance the mutual understanding. If Logistics Company agreed to provide Focal Firm insights into their routines it could deepen the relationship further since it would be a way of communicating that they trust Focal Firm to handle information. Researchers have argued that OBA serves as a mean for knowledge sharing and commitment on the other hand serve as a vehicle for trust-building (Vosselman & Meer-Koistra, 2009). If the parties use OBA in both directions to understand more about each other, it is possible to support the cooperation and the network is supposed to support the joint problem solving through OBA in both directions to reduce and manage costs (Kulmala, 2002).

5.2.2 When Cost-Management Support Trust-Building

Respondents in the industrial network have pointed out the importance of experience in the retail industry, but talked rather sparingly about direct cost reductions. Instead, the respondents frequently emphasized the importance of an efficient supply chain and optimized logistics. The Customer respondents even explained that this is something their own retail organizations have been struggling with. As explained, some level of trust was required to start sharing accounting information with the Logistics Company, but the most important part was still to regain a control over the supply chain (cf. Mouritsen et al., 2001). The Focal Firm employees felt a loss of control over their operations and when a company decides to outsource activities to another party, it is essential to re-install this control (Kulmala et al., 2002). However, when control is enforced through power within a network it does not guarantee successful cost management (Kajüter & Kulmala, 2005) and parties want something more from the relationship than merely cost reductions (Windolph & Möller, 2012). OBA has been used to improve the control over the supply chain and as a product of an increased cost control, trust (cf. Vooselman & Meer-Koistra, 2009), commitment (cf. Agndal & Nilsson, 2010) and cooperation (cf. Mayers et al., 1995) can be supported.

Before the physical operation began, there was a need to coordinate the activities around the network actors as the Focal Firm idea was that the network members merely should focus on their core competencies. The Logistics Company became responsible for the logistics and the Food Supplier became responsible for the product manufacturing while the Focal Firm is owner of the warehouse. Coordination became vital due to the

technical interdependency and in line with Alenius et al. (2015) OBA has thus helped the Focal Firm become an organizer of the actors' competencies around performed activities. An improved coordination makes the supply chain more efficient and costs can be reduced (Carr & Ng, 1995; Cooper & Slagmulder, 2004) and Mouritsen et al. (2001) emphasize that coordination requirements bring actors and flows of activities together. The coordination has brought the actors together to cooperate more intensively and trust has been built as the coordination process has helped the parties to further understand each other's business. In line with Munday (1992), the cooperation has improved as cost data is shared and used in a constructive manner, rather than to just pressure supplier margins.

The communication of shared accounting information has to be of high quality in a network (Kulmala, 2002) and is a critical aspect of an effective partnership (Mohr & Speakman, 1994). Several respondents from both Focal Firm and Logistics Company stressed the importance of this communication and how it has supported the cooperation. It was emphasized that the communication quality must be good in order for the other party to understand what is required from them and efficiency across organizational boundaries are reached when the objectives of the shared information is understood (Suomala et al., 2010). The improved communication through OBA has further supported the management over interdependencies on knowledge as the Focal Firm sellers and employees at the Logistics Company have learned from one another and can together cooperate when problems occur regarding the Focal Firm's customers. One previously exemplified problem by respondents is related to product reclaims and it was obvious that the improved communication have helped the sellers to quickly approach customers when uncertainties arise and guide them to better understand the products. OBA has supported the communication as sellers can more rapidly respond to upcoming customer problems. Simultaneously, even if knowledge can be managed through an increased understanding, employees at the Logistics Company have expressed difficulties as the information exchange has been lagging behind sometimes. The respondents from the Logistics Company explained that it has been hard to stay committed to the Focal Firm when information exchange is slow. Thus, to increase satisfaction and basically support the trust-building process (cf. Windolph & Möller, 2012), the parties have to work on the timeliness of communicated information, which is emphasized by Kulmala (2002).

The employees at the accounting departments of the Focal Firm and the Logistics Company also pointed out that the communication has been vital as some things have become lost in translation due to the Focal Firm customized solution. The ERP-systems are different and they have had to work jointly to solve upcoming problems with the disclosed data (cf. Munday, 1992). Parties can be motivated to share information in order to jointly manage an uncertain environment (Kulmala, 2002) and when OBA has been used in the studied network, the parties have learned to appreciate the different systems. Routines have slowly been set during the last year and in contrast to Kajüter & Kulmala (2005), OBA has developed a commitment as value has been created for both parties. Thus, a management over administrative routines & systems has further been developed as trust in routines and system processes has been established, when differences have been understood.

Finally, there are difficulties in suggesting that OBA can be used to manage social relations, especially relations to the Focal Firm Customers, which partly is at an arm-length distance (cf. Lind & Thrane, 2010). The relations have instead been managed through profit-based incentives (sales bonuses), rather than using OBA to support commitment or work together to solve problems. The Customers are instead interested in the potential profits. The Logistics Company does not have insight into the Focal Firm accounts receivable, but can help customers to place orders in the portal. Due to the OBA system integration, the Focal Firm can rapidly follow and control the development of customers' sales. The interviewed Customers are satisfied with the incentives and trust has thus been established.

5.2.3 Summary Open Book Accounting Characteristics in Relation to RQ2 and RQ3

OBA purposes	Characteristics	RQ2	RQ3
<i>Trust-Building</i>	<i>Trust</i>	- Existing trust worked as a prerequisite to use OBA. - OBA has supported a mutual understanding which has been used to establish a trust in the network. Simultaneously, trust is believed to be further enhanced, if OBA is used in both directions to support the mutual understanding.	- The communication from OBA helped the mutual understanding, supported trust and a management over knowledge . - Control has been established due to OBA and social relations are managed through incentives. Satisfaction with incentives has built trust.
	<i>Commitment</i>	- When parties use OBA in a network to share knowledge, a commitment is created. OBA routines have also helped the commitment.	- OBA is used to jointly manage uncertainties and a developed commitment has helped manage adm & systems .
	<i>Cooperation</i>	- OBA has supported the cooperation and focus on creating win-win situations. - OBA has supported the cooperation, the ability to work with each other strengths and thus trust-building.	- The improved coordination from OBA has brought the actors together to cooperate more intensively and a management over technology has thus been established.
<i>Cost-Management</i>	<i>Control</i>	- Established trust from the network creation supported control over supply chain processes and enabled the cost management.	- OBA was initially used to improve the control, but the parties wanted something more than cost reductions.
	<i>Coordination</i>	- Commitment was necessary in the system coordination and established management over costs and adm & systems .	- Coordination is vital to the supply chain efficiency and OBA has been used to organize actors' competencies.
	<i>Communication</i>	- The OBA cooperation has supported the communication and thus the management over knowledge and supply chain costs.	- There is a need to work on the timeliness of information to support commitment and thus trust-building.
	<i>Joint Problem Solving</i>	- Managing social relations are difficult, but OBA established a commitment in the supply chain to jointly manage problems.	- When information is lost in translation due to the system integration, the parties jointly solve problems with the disclosed data.

Table 3: A List of how OBA characteristics have supported each other and thus how interdependencies have been managed.

		RQ2				RQ3					
Interdependencies		Knowledge	Social Relations	Technology	Adm & systems	Interdependencies		Knowledge	Social Relations	Technology	Adm & systems
Focal Firm – Logistics Company		(X)	(X)	X	(X)	Focal Firm – Logistics Company		X	X	(X)	X
Focal Firm – Food Supplier – Logistics Company		(X)	(X)			Focal Firm – Food Supplier – Logistics Company		X	X		
Focal Firm – Customers – Logistics Company		X	X		X	Focal Firm – Customers – Logistics Company		(X)	(X)		(X)

Table 4: (X) = Managed interdependencies.

Table 5: (X) = Managed interdependencies.

6. Conclusion

The need for research on the roles of OBA in networks is frequently highlighted (Kulmala, 2002; Kulmala et al., 2002; Kajüter & Kulmala, 2005, 2010). Previous research has especially put little emphasis on OBA in relation to the industrial network approach and the different roles the phenomenon can take. Alenius et al. (2015) examined the role of OBA when managing interdependencies in an industrial network but the focus of their study was mainly how interdependencies could be managed through cost reductions and other features related to cost management. However, it is emphasized that the purposes, trust-building and cost management of OBA should be studied together (Vosselman & Meer-Koistra, 2009). The objective of this thesis was to extend the knowledge on the role of OBA in managing interdependencies within an industrial network and with the three research questions, connected to the illustrated research model, we have broadened the scope of OBA's role in the management by examining how trust-building and cost-management can support one another. The study shows that an industrial network is created when the opportunistic behavior is mitigated and interdependencies are further created when the substance layers are connected in the network. OBA is possible to use due to the increased trust from the industrial network creation and OBA is managing interdependencies from a reached mutual understanding which support an efficient supply chain and thus the cost-management. Next, OBA is managing interdependencies when the increased control, coordination, communication and joint problem solving support the understanding further and thus the trust-building.

6.1 Main Contributions

We highlight four contributions to the literature on the role OBA has when used to manage interdependencies:

First, different from Alenius et al. (2015) OBA can be used in an industrial network without a large emphasis on the manufacturing costs. Instead the focus of cost-management can be on making the supply chain more efficient by optimizing the logistics and subsequently, indirectly lower the costs. This has proven to be successful on a competitive market with thin product margins and a way to dynamically build trust, due to improved efficiency.

Second, compared to previous research on OBA in inter-organizational relationships, our study shows that OBA can support the mutual understanding of other actors in an industrial network. It is related to the fact that one actor can be operating in an entirely different industry compared to the other actors. With a mutual understanding, knowledge can be managed due to that the involved parties can continuously build a greater trust from the increased understanding, which support the actors to solve problems jointly and improve the supply chain further. We thus stress that mutual understanding created from OBA is another characteristic related to trust-building that can be identified in an industrial network.

Third, previous research has claimed OBA to be unidirectional, demanded from the buyer to the supplier (Mouritsen et al., 2001; Munday, 1992; Agndal & Nilsson, 2010) and it allows the buyer to support the supplier in identifying critical areas of improvement (Agndal & Nilsson, 2008). However, our study show that a focal firm can almost exclusively share information with their suppliers with limited interest in receiving accounting information, when the objective is to make the supply chain more efficient.

Fourth, unlike Alenius et al. (2015), our study of the industrial network indicates that a focal firm can use OBA, not only to manage interdependencies with suppliers in the manufacturing processes, but also to indirectly support the management of interdependencies with their customers. The studied industrial network consists of several buyers and suppliers and the study supports that OBA affects actors throughout the entire industrial network when used to manage interdependencies.

6.2 Limitations and Directions for Future Research

A couple of limitations should be acknowledged to the conducted study. First off, a qualitative study has been performed about a role of OBA in a specific setting, and the general applicability is consequently reduced. The interviewed respondents were selected due to their long-term experience from working with/within the Focal Firm and possessed valuable knowledge about the different relationships. However, a limited number of respondents were interviewed, which further may limit the generalizability. Simultaneously, studying dynamic processes such as an industrial network creation and trust-building are time-consuming tasks and thus difficult to study over a short period of time. Studying a dynamic process usually requires an in-depth study over a longer period of time (Kulmala, 2004; Kajüter & Kulmala, 2005; Suomala et al., 2010; Alenius et al., 2015). For future research, a longitudinal case study approach should be preferable when studying how trust-building can support, but also be supported by OBA in an industrial network.

We simultaneously stress that more research is needed on the roles of OBA in industrial networks and thus suggest researchers to not only study the role of OBA in managing interdependencies, but also the role of OBA in creating interdependencies (cf. Alenius et al., 2015). It became obvious as the case unfolded that only studying one of these roles is difficult as the study shows that due to the use of OBA to manage a technical interdependency, a need for more administrative routines can be necessary.

Finally, another limitation to the study is that we have not taken consideration of all groups of interdependencies, highlighted in previous literature. The value of a comprehensive contract is not deemed to be of primary importance in an industrial network (Håkansson et al., 2010), but these “legal interdependencies” can be used to manage other interdependencies in a relationship (Håkansson & Snehota, 1995). Therefore, we suggest researchers to observe the role of legal interdependencies in an industrial network when the roles of OBA are studied. If the role of OBA in creating interdependencies is researched, the contract can potentially function as a management over created interdependencies.

6.3 Managerial Implications

From this thesis, managerial implications can be derived. It shows that when operating within an industrial network the actions between two companies can have a large impact on the other embedded relationships within the network. It is important that there are no risk of opportunistic behavior between the actors since it is important to create win-win situations. Within an industrial network it is inevitable that interdependencies arise, but it is important that managers realize that being interdependent is not a problem per se, since it is through the collaboration and connections between companies’ resources that value is created (Håkansson et al., 2010). The actual challenge is instead to establish a management over the interdependencies, which has been a problem in practice. This study suggests OBA to be suitable when managing interdependencies, both through trust-building and cost-management. OBA has previously, mainly, been studied when companies are outsourcing activities that are not part of the company core competencies and firms become dependent on suppliers to make their production more appropriate. However, the role of trust-building has often been overlooked and the focus on cost reductions has instead played an important part in practice. In an industrial network, parties are mutually dependent and this study shows managers how OBA can be used to support a mutual understanding of each other’s business to create an efficient supply chain. A higher degree of trust is created from the mutual understanding and an increased understanding can support the management over costs. When knowledge and social relations are important groups of interdependencies it is important not to neglect any of the purposes of OBA, but instead understand that they can interact and support each other when reaching for an efficient management.

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