OPEN BOOK ACCOUNTING
AND COORDINATION OF ACTIVITIES IN A SUPPLIER NETWORK

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WIP Paper

ABSTRACT

Purpose of the paper and literature addressed. This paper contributes to the increasing field within the IMP literature that is concerned with the role of accounting and control in business relationships and networks (Håkansson et al 2010, Dubois 2003; Lind and Strömsten 2006). The purpose of this paper is to extend our knowledge about the use of open book accounting (OBA) in industrial networks.

Research method. We build our argument on an in-depth single and embedded case study of procurement in a large food retailer. Data is collected mainly by interviews but also by observations. Further, access to the company's internal documents as explicit open book calculations has increased our understanding of the role accounting plays in inter-organizational relationships.

Research findings. From the case study we can observe that in the context of interdependency and relatedness, effects of open book accounting are not limited to coordination of activities in focal supplier relationships. By introducing open book practice with a meat supplier, the activities both in the focal supplier relation and in connected relationships were affected.

Main contribution. Our analysis shows that the use of accounting information in a supplier relationship has direct effects on other relations in the network. The accounting information is translated into changes in activity links and resource combinations. These findings stress the important acknowledgement of interdependency and resource heterogeneity and the impact accounting has on it as a visualizer. From an IMP perspective, this study illustrates the importance to acknowledge the role that accounting and control play in embedded industrial relationships. Thereby this study adds to the existing understanding of interaction processes in embedded relationships.

Keywords. Networks, accounting, open book accounting, cost management, retail.

INTRODUCTION

"When we purchase meat we pay for everything that's in the bag and after a while it starts to drip water. On the ten worst dripping products the open book calculation we have with Meat Pack[1] tells us that a lot of money drips away and now we want to negotiate with all the meat suppliers to take fifty percent of that cost."(Purchase manager at main category meat, Food Store[2])

Open book accounting (OBA) has been defined as "the systematic disclosure of cost information between legally independent business partners beyond corporate borders" (Hoffjan and Kruse 2006, p. 40). The intention is to lower cost and increase profitability by enabling strategic management of activities and resources across supply chain actors through firm boundaries in the activity chain. As most of the prior research within the field of OBA, and closely related and not seldom connected practices as total cost of ownership, target costing, value chain analysis and inter-organizational cost management, has focused on dyadic relations, an underestimation of the network importance on cost and accounting controls has resulted (Caglio and Ditillo 2008). The main focus of previous studies of OBA has been on 'when' and 'how' questions, mostly in dyadic relationships (e.g. Kajüter and Kulmala 2005; Dekker 2003; Agndal and Nilsson 2010; Hoffjan and Kruse 2006; Axelsson et al 2002; Carr and Ng 1995; McIvor 2001; Mouritsen et al. 2001; Munday 1992; Seal et al. 1999). Some of the studies (Agndal and Nilsson 2010; Dekker 2003; Kajüter and Kulmala 2005) have pointed on the role OBA can have on embedded actors, not part of the explicit OBA practice, but the scope of the studies has left it out for deeper analysis. The use of transaction cost economics approach (Agndal and Nilsson 2010; Dekker 2003) and contingency theory (Kajüter and Kulmala 2005) has neither put these dynamic issues at forehand.The starting empirical quote addresses this gap andso the scope of this paper as these issues not has been covered explicitly by previous research.

Mouritsen et al (2001) concludes that OBA as a practice for inter-organizational control had intra-organizational effects on strategy, technology and organization, effects that in turn affected the inter-organizational network of suppliers. In a study of two small Danish high-tech firms, where one implemented OBA to regain control over outsourced production processes, OBA made it possible for the focal company to benchmark suppliers and redesign their activities. OBA also influenced the companies' core competence through its association in several aspects of organizational activities and its the ability to set things in motion as an actor in an actor network (Mouritsen et al 2001). These results points on the network impact of OBA, a gapin previous literature where this paper contributes focusingon OBA and coordination of activities in a supplier network.

Emphasizing the role of OBA in the continuous activity of finding and support new resource combinations in a supplier network, this study adds to previous work primarily focusing of relating a certain setting to certain events (Agndal and Nilsson 2010;Cooper and Slagmulder 2004; Kajüter and Kulmala 2005). The OBA literature is so far to a large extent concerned with the data sharing conditions (Caglio and Ditillo 2008), concluding the importance of the byer-supplier atmosphere and incentives for cost data disclosure (Agndal and Nilsson 2010). This paper traces the impact of OBA in the coordination of activities in a supplier network, focusing on indirect effects through the study of cost data disclosure in a focal relation. It will also respond to the call for more in-depth case study research on the role of accounting in networks (Håkansson et al 2010), a field that has received growing attention the last couple of

[1]Meat Pack is not the actual name of the company.
[2]Food Store is not the actual name of the company.

years (Håkansson and Lind 2004, Lind and Strömsten2006; Baraldi and Strömsten 2009; Carlsson et al 2009).

The purpose of this paper is to develop a framework for open book accounting and coordination of activities in a supplier network.The industrial-network approach is used as a framework to identify how accounting effect the coordination of activities not originally targeted with the calculations used (Baraldi and Strömsten 2009). The study of a case from the retail business, with access to the actual calculation spreadsheets used, will also broaden the empirical knowledge within the OBA research field.

The research question addressed in this paper is:*How does OBA effect coordination of activities in a supplier network?*

The paper is organized as follows. First, we will review the literature around OBA open and conclude that most research so far has had a dyad focus, ignoring the connected relationships embedding the dyad in a network. Second, we approach the IMP literature and concepts relevant to understand coordination in inter-organizational settings and networks. We conclude our theoretical section with a discussion on open book accounting in industrial networks. Next follows a section where our methods are discussed. Following upon that, the empirical results are presented. We end the paper with a discussion and concluding remarks.

LITERATURE REVIEW: OPEN BOOK ACCOUNTING

OBA has been observed it in different theoretical and empirical settings.Kajüter and Kulmala (2005) studied OBA in a German car manufacturing network and three Finnish manufacturing networks providing mining and construction equipment, pulp and paper industry equipment and aircraft parts respectively.In their study Kajüter and Kulmala (2005) describe OBA in practice and conclude reasons why OBA in business relations fails. Using a contingency framework they determining the fit of OBA in a specific context.Exogenous environmental factors important for OBA practice is the general economic trend as well as the level of competition and cost reduction pressure. Important endogenous firm-specific contextual factors are firm size and cost accounting systems. Usually larger firms have more resources to commit in new accounting and control systems and useadvanced cost accounting systems supporting OBA with reliable data (Kajüter and Kulmala 2010; Seal et al 1999).Network-specific context factors important for OBA implementation are according to Kajüter and Kulmala (2005) that the network is mature and hierarchical, as members need to have a long-term view and be able to benefit from joint cost reductions over time. That the produced product is functional is also essential, as cost reductions need to be a competitive priority where OBA can contribute. To establish OBA processes infrastructure with structured worksheets and development and support of each other's cost accounting systems are important, as well as the social nature of relationships are characterized by mutual trust (Kajüter and Kulmala2005).

Problematizing the concept of trust as a factor for OBA with structuration theory and a study in the UK retail sector, Free (2008) argues that the uncritical demands for OBA are unlikely to create trust. Instead it can furthermore generate strong incentives for manipulated cost accounting (Free 2008). This conclusion is in some sense contrasting to Seal et al (1999) that makes a study of two UK manufacturing companies considering a strategic supply partnership. Using a transaction cost economic approach Seal et al (1999) propose that accounting may play a statutory role in the formation and controlling of collaborative and trusting business relationships. One reason is that the specification and sharing of cost data in OBA practice expose each other's financial constrains and objectives (Seal et al 1999).

Hoffjan and Kruse (2006) conceptualize three dimensions effecting OBA in business relations as degree of economic dependence, duration of contract and number of contractual partners. To answer how it's used they differentiate OBA characteristics in the three dimensions of base data, direction of information flow and degree of disclosure. By studying thirteen published examples of OBA and by conducting one interview in three different German firms, Hoffjan and Kruse (2006) demonstrate characteristics of sixteen cases of OBA through their two frameworks. Conclusions regarding business relations are that high degree of economic dependence and long durations of contracts are important factors to observe OBA in practice. Bilateral contracts are also more common than multiple bilateral contracts, which in turn are more common than networks of contract parties. Conclusions regarding types of OBA are that two-way direction of information flow is very rare and that actual costs are used in a much higher degree than planned costs. These typical cost-plus contracts with one-way information flow are often complete in their degree of disclosure, though there are some observations of limited OBA and one case with information sharing without actual OBA (Hoffjan and Kruse 2006).

Agndal and Nilsson (2010) related open book accounting practices for different purchasing strategies in the study of three cases in the vehicle, retail and telecom business respectively. Using the transaction cost economic perspective, Agndal and Nilsson (2010) broaden the scope of OBA practices in relational contexts with practices in transactional purchasing, giving five main points of contributions. The first is to simultaneously considering what types of data that are requested in combination with their use and incentives to be able to explain difficulties in the OBA disclosure process. The second is that OBA can serve as a monitoring function to reduce behavioral uncertainties in market transactions. The third is the clarification of the three broad purposes of OBA, namely problem solving, profit sharing and price controls. The fourth is the incentives for the supplier to disclose cost data depending on if there are a relation or transactional context with the buyer. In relational context long-term incentives, such as possible future collaborations and increased competitiveness both to other buyers and suppliers, becomes more likely with adaptions, investments and learning of practices (an importantobservationfurther developed in this paper).In a transactional context the incentives are more about granting the contract and maximize volumes and deal lengths towards the buyer. The fifth contribution is that cost data disclosure can not only transform purchasing strategy towards a more relational path due to trust building, but also favor a transactional path, as cost data knowledge can be used to commoditize products (Agndal and Nilsson 2010).

To conclude, we have highlighted some of the more recent contributions within the OBA literature. None of the above-mentioned work, takes a network perspective on OBA, instead OBA is seen from a rather strict dyadic perspective often based upon a transaction cost economics perspective (Williamson 1981). By doing this, the network effects from using OBA are in most studies ignored or done implicitly. In Kajüter and Kulmala (2005) definition of network is limited to suppliers working in a chain of activities producing a common end product. In this study the network definition is broader and include all embedded actors in 'open systems of business relationships' as Kajüter and Kulmala (2005) express it. Their explanation of the difference between open and closed networks also points on the main contribution in this paper of studying OBA and coordination of activities in a supplier network:

"However, the idea of networks as open systems of business relationships (Anderson et al., 1994; Håkansson and Lind, 2004) was not explored. There might be, for example, a certain impact of open-book practice on relationships with other companies, or vice versa,

relationships with companies outside the closed networks analyzed might influence the cost disclosure practice within these networks."(Kajüter and Kulmala 2005, p. 201).

Our ambition in this paper is to make the network feature of OBA explicit. With reference back to the very first empirical quote in the introduction we argue that important effects would be found in the relationships that are embedded to where the OBA practice is performed.This will also question the view where OBA is approached as a buying firm taking advantage of the information disclosed by the selling firm. Instead, we would argue that OBA might have positive effects for both firms due to network adaptions.To analyze OBA in a network defined as open systems of business relationships (Kajüter and Kulmala 2005) theories of coordination of activities in a network setting will be combined with OBA in the following two sections.

COORDINATION OF ACTIVITIES IN A NETWORK SETTING

The network setting in this paper is built on theories on heterogeneity (Penrose 1959), interdependence (Richardson 1972, Dubois 1994) and embeddedness (Granovetter 1985), litteraturethat form the basic building blocks of the industrial network approach. It is what happens between companies and not within companies that constitutes the nature of business (Håkansson et al 2009). This notion makes interaction the heart of business development, affecting actors and resources that perform activities in the network of relations, called the business landscape.

The differences between market transactions andinteraction in cooperation between companies are significant. Interaction copes with much longer time periods and the factor of dependency. Instead of being opportunistic regarding price at a particular point in time, a company raises its vision and look for collaborations that develop the business through recurring interaction over time (Håkansson 1982; Johanson and Mattson 1987). By doing so it becomes embedded in a larger network of relationships where companies are connected to each other, not only in a directly dyadic relationship, but also indirectly through relationships between supplier's suppliers and customer's customers. Through this interaction among companies they adapt their interfaces to allow for repeated interaction (Wedin 2001; Håkansson and Waluszewski 2002a; Baraldi 2003; Lind and Strömsten 2006; Dubios and Arujo 2006), resulting in closer relationships with mutual adaptations and finally interdependent companies.

Based on a large empirical stream of research the process and outcomes of an interaction process are conceptualized in the Activity-Resource-Actor (ARA) model (Håkansson and Johansson 1992). The model describes the interaction process in terms of three interconnected layers called the activity, resource and actor layer (Håkansson and Snehota 1995). The activity layer describes the links between the activities of two actors. The resource layer describes how the two actors resources interplay and ties together in the interaction process. The actor layer describes the relational links between individuals of the companies involved in the interacting process. The interconnections between these layers are highly important as the ARA model take into account that activity links, resources ties and actor bonds have effects beyond the specific relation observed. Again the embeddedness factor becomes significant, as the actors in a relation can affect other actors, resources and activities using the content of the relation in both time and space.

Interaction takes place in time and space, two factors becoming central issues in the conceptualization of interaction (Håkansson et al 2009). As time creates history and future it will impact interaction in the current episode with experience and expectations expressed

through behavior, attitude and options. Episodes will therefore be connected by time in a continuous development process (Håkansson et al 2009). Space will position interaction episodes in relation to others and extends its context. Connections in space direct a specific interaction process to become more or less related to others. Håkansson et al (2009) combines the ARA model with the dimensions of time and space to draw a model of business interaction.

In the model the interaction in the three layers of activities, resources and actors takes place in a context of respectively wider activity patterns, resource constellations and actor webs. These interaction processes are in turn combined with particular aspects in both the time and space dimension. Activities are interdependent in space due to its connections in the wider network and in time they are evolving in a process of specialization. Resources can change location in relation to others and thereby change its value, resulting in resource heterogeneity in space exploit by interaction. This development of resources through heterogeneity in space follows a path in the time dimension, as the combinations of resources often follows an identifiable path over time. Actors also evolve over time in the interactive landscape, coping with its own problems and opportunities by coping with its counterparts in a time-driven co-evolution process. The co-evolution marks the always-occurring links of an actor to others and forming through interaction. In space the jointness is a way of characterizing the specific relationship between two actors in relation to all others.

Based on work by Richardson (1972) on organization of industry due to level of similarity and complementarity and Håkansson (1987) on the interdependent components of actors, resources and activities in the network model, Dubois (1994) developed an analytical framework for organization of industrial activities (figure 1).

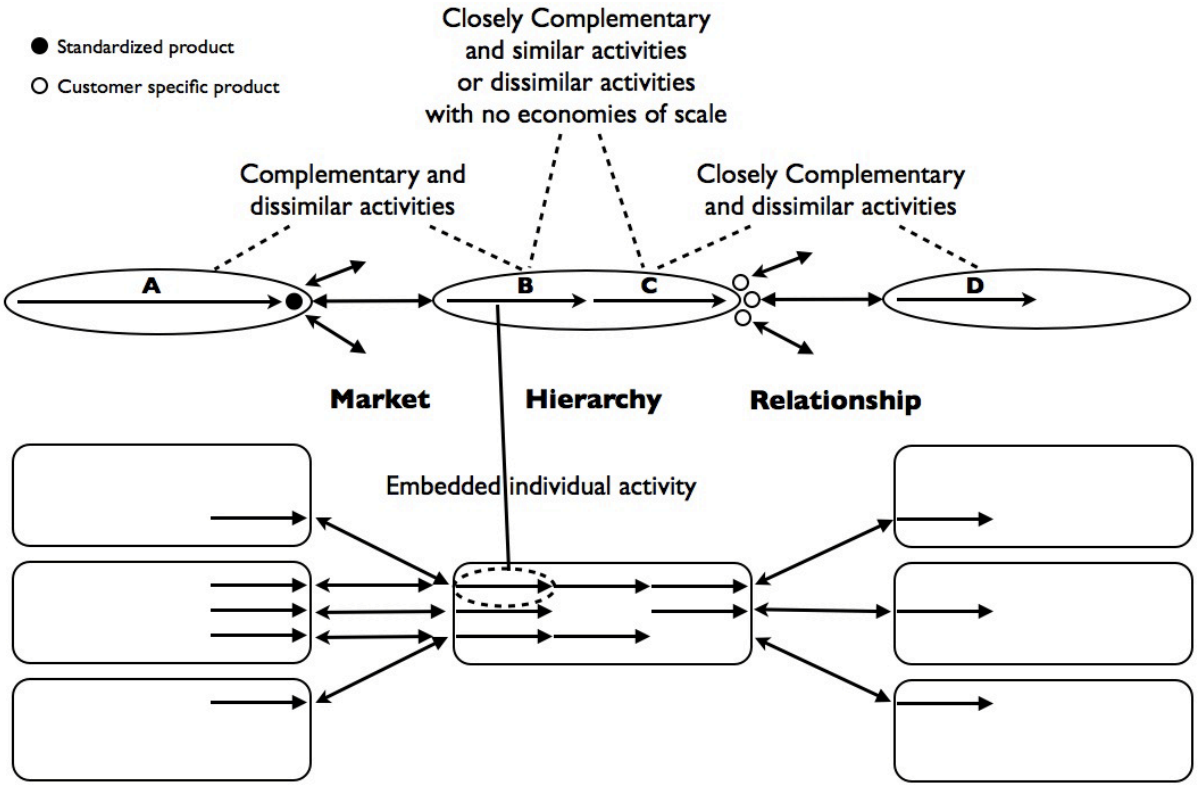

Figure 1. The coordination of activities and the embedded singe activity in a network of activities. Based on Dubois (1994).

In the framework activities are drawn as arrows eventually producing standardized products exchanged between actors on a market or customer specific products exchanged in actor relationships. Depending on if the activities are closely complementary or complementary and similar or dissimilar their coordination will either be as market, hierarchy or relationship (Håkansson and Lind 2004). Embeddedness is the result of dependency between activities, actors and resources and there respectively connections to other actors, resources and activities in a larger dynamic network.As a consequence a change in coordination of activities between two actors aren't independent from the coordination of activities in the network.

OBA AND COORDINATION OF ACTIVITIES IN A NETWORK SETTING

The underestimation of the network importance in previous studies of OBA and related topics(Caglio and Ditillo 2008)and the consequently neglecting of the importance of embeddedness (Granovetter 1985)is a result of the popular use oftransaction cost economic perspective (Williamson 1981)on the economics of inter-firm relationships(Anderson and Dekker 2010). Using actor network theory Mouritsen et al (2001) points on network effects of OBAas the activities in the focal company was influenced by the supplier control at distance OBA allowed for. Implicitly but not explicitly the paper shows effects of OBA in a focal relationon other embedded relations. In this sense alsoAgndal and Nilsson (2010)implicitly points oneffectstowards other buyers and suppliers as possible future collaborations and increased competitiveness becomes more likely with adaptions, investments and learning of practices through OBA. To contribute to previous literature this paper explicitly study how an open book calculation used in a supplier relation have intra-organizational impact both in coordination of activities in thesupplier relation as well to suppliers in the network (figure 2). A network not limited to a onewith directs connections in supplier tiers(Kajüter and Kulmala 2005).

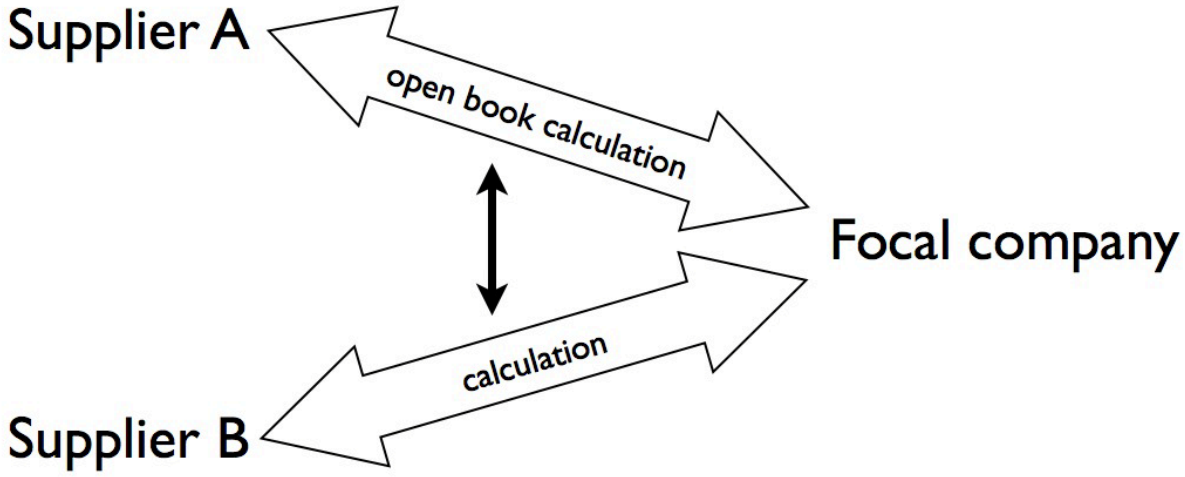

Figure 2. The open book calculationbetween supplier A and the focal company effects both the coordination of activities in that relation as well as in the relation between the focal company and supplier B.

In this embedded context, where activities are organized in different ways between actors, accounting practices as OBA interplay with activities performed by actors linking resources. By using OBA practicein the coordination of particular activities these activities, but also embedded activities between actors not included in the actual OBA practice, becomes affected. In figure 3 several companies are performing substitutable activities in A, B and C producing standardized products demanded by the company performing activities D and E. One company produces specialized products preforming activity Ctowards the company

performing activities D and E. OBA is used in the coordination of activities linking resources between these companies. It's also used with a company performing activities B and C. As accounting methods play a key role in forming the relationships (Håkansson and Lind 2004) and activities are embedded in a network the OBA practice not only effect the coordination of activities in the focal relations it's used but also in embedded ones.

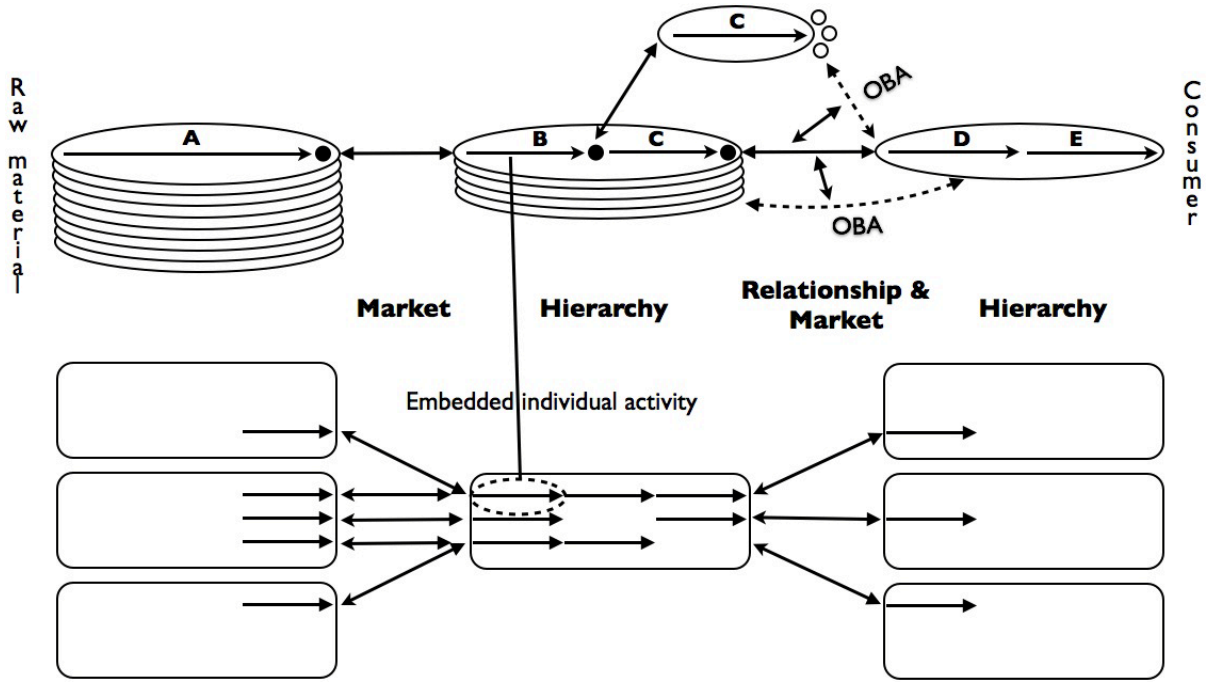

Figure 3. As actors are embedded in a network the OBA practices used in a supplier relation are not limited to effect only the coordination of activities in that relation, instead they effect the coordination of activities in the network.

The network and its embeddednessgenerate a highly dynamic contextwhere the role of accounting to a larger sense becomes about stimulating relation interaction than permanently solve a coordination problem (Håkansson and Lind 2004). In continuously interaction the permanently valid explanation has the shape of an ongoing process of temporarily pragmatic solutions (Baraldi and Strömsten 2009; Carlsson-Wall et al. 2009). To study such a context an in-depth case study has been chosen as research method.

METHOD

In this paper we are concerned with a rather unresearched topic, open book accounting and its role in inter-organizational relationships and networks. We have therefore conducted an in-depth case study on a large retail firm, where coordination between organizational units is of great importance. We also have identified situations where costing calculations is used in dyadic settings and then spread into practices that are related to third parties. The use of accounting information and open book accounting in these indirect relationships are both concerned with bargaining, trying to create a stronger position vis-à-vis the supplier, but also to create mutual benefits between the involved parties. Hence, there is a need to conduct a case study, which is explorative to its nature.

This paper aims to contribute, refine and develop existing theories by adding knowledge of the role of OBA in activity chains of embedded activities a methodological abductive approach of systematic combining is chosen (Dubios and Gadde 2002; Ryan et al 2002). Systematic combining stresses the continuous confrontation of theory with the empirical world, directed by the confrontation between the evolving framework and the evolving case

throughout the research process (Dubios and Gadde 2002). We present a single case study to be able to reach the level of depth that is pursued to capture a dynamic process in a chain of activities (Dubois and Gadde 2002; Halinen and Törnroos 2005; Dubois and Araujo 2007). Within the single case two subcases, sharing the context of the single case, are presented with the aim to analyze variations among them (Dubois and Gadde 2002).

Data is collected mainly interviews. Purchase managers and category managers at different levels within the purchase department where interviewed as well as product developers, analysts and supply chain managers at Food Store. In total 30 interviews were conducted between June 2010 and March 2012. Of these were 24 interviews recorded and transcribed, while extensive notes were taken from the remaining interviews. Interviews lasted from 45 min up to 180 min with an average of 80 min. Observations were also made at product test meetings, supplier meetings, at the meat purchase department, warehouses and stores.Moreover, we have had access to costing calculations that have been used in the inter-organizational relationship between the Food Store and some of its key suppliers. For example, calculations including the open book calculations used with both Meat Pack and Meat Raw were made available as well as strategic supplier documents, budgets and plans. This data is highly sensitive and we have therefore chosen to disclose the name of the companies involved. The costing calculations have been used to understand how open book accounting is used in inter-organizational settings where also third parties, network features, are critical ingredients.

FOOD STORE - A CASE OF OPEN BOOK ACCOUNTING IN THE RETAIL SECTOR

Food Store is one of the largest grocery retailers in Scandinavia with stores of different sizes from small groceries to large supermarkets. Food Store purchase and sell products from a large base of different suppliers to provide a big range of products to customers. An advanced logistical system with some large warehouses and distribution centers, where Food Store either retrieves products from suppliers or suppliers deliver themselves, makes it possible to provide all the stores with fresh products several times a day in a uniform way. The suppliers range from large international producers with well-known brands to small local producers and private label manufacturers of varying sizes. Purchasing strategies to source the ten thousands of products provided in the stores differs from virtual real time auctions to long-term supplier collaborations. The purchasing function at Food Store is centralized at the company head office and organized in several business areas as dairy, meat, fruits and veggies etc. Each business area is divided into severalproduct categories managed by category and purchase managers. Category managers have the responsibility for content, design and performance of categories and the purchase managers negotiate and sign contracts with suppliers. These teams are often responsible for the design and purchase of a category consisting of thousands of products where the total selling price can equals billions of SEK every year. To their help they have departments with analysts who collect and provide useful information and analysis about products and suppliers and others working with product pricing, store planning, private label products development and global sourcing.

The business area meat includes the three main categories meat, processed meat and ready meals and fish and poultry. The main category meat has one category and two purchase managers responsible for the products included in the category, mostly comprising different meat cuts from beef and pork from supplier brand products and Food Store private label. The products are both fresh and frozen and due to the Food Store relative volume demand in the market they are one of the most important customers for suppliers. In their job the meat main category and purchase managers are working closely with the business area purchase

manager and category manager as well as the business area manager. To their help they also have purchasers and supply chain managers located at the warehouses to manage daily orders and logistics with suppliers. The supply chain managers have the logistical responsibility working with the distribution system at Food Store from different product categories perspectives. In the main category meat that includes giving inputs on issues both to main category purchase and category managers and to suppliers to improve meat product flow, wastage and the Food Store distribution system as a whole to manage margins and capital turnover.

private labelmeat at food store

The level of private label products has over the last two decades increased from a couple of percent to nearly twenty percent of the total products offered by Food Store. In line with this deliberate strategy Food Store initiated nearly a decade ago a largeventure producing private label meat products in collaboration with a global supplier called Meat Pack. The exclusive venture between Food Store and Meat Pack demandeda large investment by Meat Pack as the private label products where going to use a new way of industrial meatpacking, providing the ready for sale products with longer durability. The new package both had logistical advantages with lowering wastage and eliminated the need for a local store meatpacking facility, two factors driving costs a part from the product price. In this long-term venture Food Store made a deal guaranteeing Meat Pack a return on their factory investment expressed asa certain marginal on certain volume produced every week. If the actual volume produced is lower Food Store has to compensate Meat Pack and if the actual volume is higher the increased profit is divided between Food Store and Meat Pack.

As the general idea with private label products is to provide customers with equal or better products at lower prices compared to comparable brandsand still receiving a higher margin, cost management is crucial for Food Store. To be able to monitor and manage the costs Food Store has guaranteed to cover towards Meat Pack an open book calculation is used in the venture, disclosing all Meat Pack calculated costs for their activities performed. To plan a yearly budget with estimated figures are made followed by monthly reconciliationsto adjust for actual outcome and deciding on whether there is a positive profit to allocate or a week volume to compensate. Looking at the large spreadsheet a purchase manager at main category meat explains:

“This is their profit if we follow the budgeted volume exactly and if we exceed the volume the amount is higher and if we not it will be lower. But often, as we put a lot of pressure on them, if the volume is lower they try to handle that by sending home personnel etc. They have some cost flexibility by using partly rented labor, as they know that invoicing us is not good for them in the long run. They want to be a good supplier.” (Purchase manager at main category meat, Food Store)

calculations and the chainofactivities

The purchase manager at main category meat looks at the latest review of the calculation with Meat Pack and explains that it in detail defines costs for all products produced in the cooperation between the companies. The calculation is built up on the chain of activities that are performed at the meatpacking factory and it starts with the prices for meat raw materials that mainly are sourced from five different suppliers if it’s not imported meat. In the calculation all parts used from a pig are defined and calculatedas a weighted average pricebetween the five suppliers. Starting at this initial point in the calculation of what the cost for a private label meat product is one purchase manager at main category meat explains:

"If we look at the initial calculation, this is pig and the prices for the raw meat material. Here we also have an open calculation with one of the suppliers and they have tested on hundreds of pigs to know how much of a certain part you get from one pig. Pigs are very standardized compared to cattle and weighs often 90 to 95 kilos when slaughtered and we have calculated how much loin, spare ribs, minced pork, tenderloin, chops etc. we get. Its also on this part level we buy the raw meat material." (Purchase manager at main category meat, Food Store)

The open book calculation between Food Store and Meat Pack specifies the cost for each raw meat material part going in tothe product process done at Meat Pack. Further down in the activity chain where the national livestock farmers are selling their animals to the slaughterhouses they get paid per kilo pig they deliver. This price is continuously updated and public published information even though some farmers and slaughterhouses have negotiated deals with smaller price adjustments. Knowing the cost of pigs going from the many smaller farmers (activity A in figure 4) to the fewer larger slaughterhouses (activity B in figure 4) and the costs of the different meat raw material parts extracted from the pigs, Food Store wanted to know what happened in between. To be able to understand and calculate the relation between the cost of a pig and the cost of meat parts from that pig a cooperation disclosing cost data where initiated with one slaughterhouse called Meat Raw[3]. To share their cost information Meat Raw negotiated a deal with Food Store agreeing on buying a fixed volume of pigs and cows each week enabling a smoother utilization of capacity at Meat Raw.

As figure 4 shows an open book calculation is used to describe costs going from standardized products produced in activity A (pigs) to standardized products produced in activity B (meat parts). This calculation is named OBA 1 in figure 4. Moving from meat parts to products the meatpacking activities producing meat products (activity C in figure 4) are performed both by the slaughterhouses and the private label producer. By using an open calculation (OBA 2 in figure 4) with the private label producer the costs going from activity B (meat parts) to the products produced in activity C (meat products) becomes described. Following activity C are Food Store hierarchical integrated activities D (logistics) and E (retail). The focus in this paper will be on activates B and C where inter-organizational accounting for control is used.

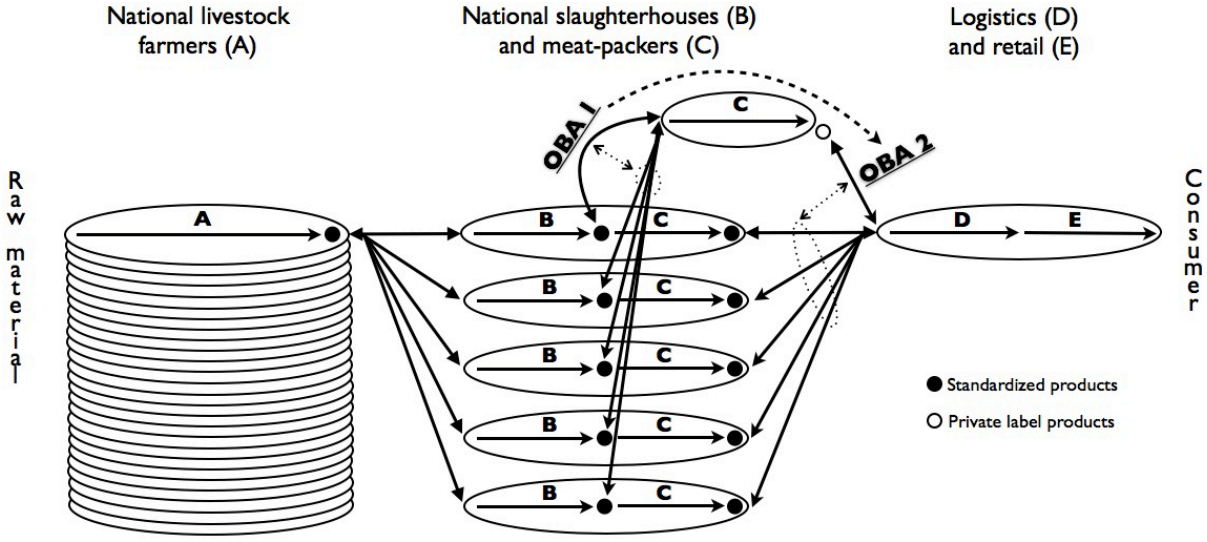

Figure 4.The role of OBA in meat activities from livestock farmers to retailer.

[3]Not the actual name of the company.

As figure 4 shows there are two open calculations used to describe activity B and C respectively. One between Food Store/Meat Pack and Meat Raw handling slaughter activities (B) and another between Food Store and Meat Pack describing meat packing activities (C). By this notion of costs Food Store saw an opportunity to realize volume and purchase synergies by making suppliers seeing Food Store and Meat Pack as one combined customer. One purchase manager at Food Store explains:

"We purchase meat raw material for Meat Pack from meat raw material suppliers. Then we have a business relation with Meat Pack where we buy finished products, which is another calculation. So there are two different businesses. When we buy meat raw material for Meat Pack we often buy from suppliers also delivering their branded products directly to Food Store. Here we have potential synergies in terms of volumes and purchasing." (Purchase manager at main category meat, Food Store)

The fact that Meat Pack alsohas guaranteed cost covering stressed the incentives for Food Store to take part in the negotiations of prices on meat raw material. One purchase manager at Food Store explains:

"Meat pack has their own purchaser so when we negotiate prices with meat raw material suppliers I often do that together with the Meat Pack purchaser. Meat Pack employs him and we negotiate the prices together but then he handle all daily contacts to get the right volumes delivered the right day." (Purchase manager at main category meat, Food Store)

To be involved at the meat raw material purchase stage as well as having the open calculation with Meat Packalso providesFood Store with information useful when buying meat products from other suppliers. One purchase manager at Food Store explains:

"If we purchase entrecote for Meat Pack and then we by the packed entrecote product from a brand supplier we never going to pay say 10 SEK wrong since we know the price images and both stages. We can see the supplier's price on. To know all this had been much harder if we didn't have the collaboration with Meat Pack. (Purchase manager at main category meat, Food Store)

opencalculations and slaughteractivities (b)

By having the open calculation (OBA 1)in place with Meat Raw regarding their slaughter activities (B), Food Store was able get a picture of what happened between the animal and the different meat raw material parts feeding the meat packing activities (C) performed by Meat Pack. The calculation specifies the costs of different steps seeing the pig or cow going from slaughter weight, where prices per kilo are public, to the different raw material parts and their calculated costs per kilo respectively. This calculated relation draws the connection between market prices of animals to costs ofmeat raw material parts rebuilding the animal at the raw material level at its weighted cost per kilo. Through slaughter activities (B) a pig of 90-95 kilo loses around 15 percent of its weight in the initial slaughter. From that weight over one third of the pig is taken away processing out the used meat parts resulting in a used weight of 52-53 kilo and inevitable an increasing cost per kilo pig as the yield used decrease. Added to the costs of meat raw material are detailed costs of the slaughter processending in a price of a pig or a cow ready for the packaging and productizing process. The calculation draws in this way a cost picture relating price changes of the animal from the steps of slaughter to packaging. The purchase manager at the business area meat explains its usefulness:

"With Meat Raw we said that if the pig costs this amount to buy per kilo you will get that plus your costs for slaughter and handling specified in the calculation. This was great because when we sat in negotiations with another big supplier, and they were saying that the escalope is up with this much and the ham is up with this much and so on, we could call those arguments by relation them back to the price of the animal, using the knowledge from the open book calculation we had with Meat Raw." (Purchase manager at business area meat, Food Store)

This way of using the open book calculation with Meat Raw in negotiations with other suppliers providing meat raw materials has become important to Food Store. Thepurchase manager at business area meat explains:

"We source pork and meat from several suppliers. As a result of the open calculations that we have with Meat Raw we get very good knowledge about the actual costs and changes of costs in all meat raw materials. Knowledge that we use in the repetitive price negotiations that we have with all our beef and pork suppliers." (Purchase manager at business area meat, Food Store)

In the open book calculation it is clear that the yield of utilized animal goes down, as a large part of the animal bought from the farmer not becomes meat raw material. Adding the costs for slaughter and handling the price per kilo for a pig more than doubles in this activity (B). The third disposed after the initial slaughter process can though partly be used in processed meat production, manufacturing popular products as sausages etc. At Food Store there is an ongoing work to find more of those synergies, as the company also is a heavy customer for processed meat products. One purchase manager at main category meat explains:

"We have worked a lot, the business area purchase manager and me, to find synergies to increase the yield here. As we buy a certain amount of pigs every week, can we take all this not used as meat raw material and source our processed meat producers? But it is a bloody job. Very hard to get something fruitful out of it but it is something that continues." (Purchase manager at main category meat, Food Store)

Prices of meat raw material are negotiated every fourth week with all suppliers also updating the calculation between Food Store and Meat Raw. The slaughter and handling costs in the open book calculation are also regularly updated but not as often. In those updates Food Store usually respond with some questions to the disclosed Meat Raw data leading to a discussion if they can improve some of their slaughterhouse activities (B).

opencalculations and meatpackingactivities (c)

The open book calculation (OBA 1) resulting in meat raw material prices from Meat Raw are in the next step feeding the open book calculation (OBA 2) Food Store has with Meat Pack. The cost data from Meat Raw are here combined with the prices paid to other suppliers in relation to the purchased volume to get a weighted average price of meat raw material parts. As these prices are negotiated with suppliers every fourth week, the meat raw material prices feeding the open book calculation between Food Store and Meat Pack also change in this matter. As the open book calculation mirrors all activities calculated at Meat Pack it also changes when new products are added. One purchase manager at main category meat explains:

"If we are to develop three new barbecue meat products for the summer Meat Pack send us an updated budget where I try to analyze their every add and call them to ask why they need

ten people to make it? Occasionally I even visit their plant and ask them to show me all the steps needed for the new product to see what it are driving costs. I do this to put some pressure on them to do their very best and not routinely allocate ten people for the new task." (Purchase manager at main category meat, Food Store)

Starting with the meat raw material prices the open book calculation (OBA 2) between Food Store and Meat Pack are detailed, calculating the cost of meat and processes for each product as they are driving costs differentlydepending on its characteristics. In hamburgers for example the minced meat is blended with water and spices affecting costs for both raw material as well as the processcompared to plain minced meat. When the different meat raw material is dispatched there are costs for blood and other liquids in the package that have been paid for but go to waste in this stage of production. The purchase manager at business area meat explains:

"There is money to save sourcing meat that has been refrigerated properly. By doing it to quickly the meat loose some of its ability to bind liquid and you get blood drip. By loosing some percent here that you need to pour out in the dispatch process instead of keeping it in the meat you have fully paid for can make a big difference when we are talking thousands of tons of meat" (Purchase manager at business area meat, Food Store)

The disclosures of these kinds of wastage costs are important to Food Store in their work with all their suppliers, as the yield of the meat raw material is one of the most important factors in meat production. Being the largest cost for meat products and with very high volumes purchased small changes in the yield, measuring the utilization of the bought animal or meat raw material in meat products, can make a significant difference in store price competiveness. One purchase manager at main category meat explains:

"The yield is something we work a lot with to see what improvements we can do, as the largest parts are waste and trimmings. When you slice an entrecote you always take away a bit at the back and the front to get nice slices. How can you optimize to take away as little as possible but still get a good product?" (Purchase manager at main category meat, Food Store)

The detailed calculation of activities (C)at Meat Packcontinues after the initial costs on product level with cost allocations for different processesas conversion costs to switch products in the production line, direct labor costs and costs for packaging. These costs are calculated based on resource utilization for each product. Overhead costs including depreciation are equally allocated between products and its allocation has not been deeper investigated since these costs in relation to variable product costs are quite low. At the end of the calculation there is a mark-up constituting Meat Packs profit as a percentage of the calculated product cost. Summing the totalresults in the price Food Store pay Meat Pack for products ready for store distribution.

The calculation used has over the years been improved and a big change was when a larger part of costs was allocated with volume produced as the important cost driver. The idea behind this was that every product produced should cover its own costs resulting in a new picture of profitability on a product level. This change of cost allocation has reformed the understanding of costs in relation to products for both Food Store and Meat Packas a result of their open book calculation. Knowledge from disclosed cost data that also has given Food Store important arguments in purchase negotiations with other brand meat suppliers. The business area meat purchase manager explains:

"As a result of the collaboration, partnership and open calculations that have with Meat Pack, we get very good knowledge about the costs and changes of costs of everything from minced meat to fillet of beef."(Purchase manager at business area meat, Food Store)

DISCUSSION AND CONCLUDING REMARKS

The aim with this paper was to extend our knowledge about accounting in inter-organizational settings and networks and more specifically how OBA practices are used in coordination of activities in supplier a network. We could from the empirical case see that the accounting techniquesdeveloped and used in the open book accounting arrangement between Food Store and its suppliers effected how activities where coordinated and preformedboth in the relationships with Meat Raw and Meat Packbut alsoin the relationships to other suppliers in the network. These findings stress the importance of acknowledging interdependency, resource heterogeneity and embeddedness (Richardsson 1972; Penrose 1959; Granovetter 1985) in the study of accounting in a network perspective.We could further see that accounting played an important role in visualizing potential areas of improvement in the linking of activities and in the combination of resources. From an IMP perspective, this study illustrates the importance to acknowledge the role that accounting and control play in embedded industrial relationships and how accounting is part of shaping these relationships, networks and interaction processes(Håkansson et al 2010).

Even if based on only one observation we argue that it is possible to see important implications from the study. Accounting is used as a way to identify and visualize possibilities to increase and improve activity links and resource combinations over organizational boundaries.Hence, the managers using the accounting information have an ambition to transform and change the activity linking and resource combinations in order to improve the economic result for the involved organizations. When the problem is identified through the open book calculations, the calculations must be transferred back to the "reality" (which is visualized in the calculations) in order to change how activities are linked and resources combined. For example, after having studied cost calculations it was clear for the involved parties that the yield (of the meat) of the purchased animals had to increase throughout the processes across company boundaries, as this would imply wanted cost reductions. This was made visible through the calculations and the actors acted jointly upon this information and were able to change the activity structure and how the resource (the animal) was handled. Theeffects of accounting on inter-organizational control were not limited to the buyer and supplier involved in the OBA practices. It also generated activities towards other suppliers, pointing on the strategic network value of calculations. The value of a calculation used in a supplier relation might be larger to the network than to the specific relation, resulting in new dimensionsvaluing supplier relationsand its content.

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