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COST TRANSPARENCY IN SUPPLY CHAINS: DEMYSTIFICATION OF THE COOPERATION TENET**

ABSTRACT

Recent studies on open-book accounting focus mainly on the functions and consequences, difficulties, and determinants of interorganizational cost management. Research is also generally based on case studies. To offer a new direction, we seek to detect and systematize applications of open-book accounting. We follow a qualitative approach to analyze why and how open-book accounting is being used in practice. Data were obtained from 59 interviews conducted with purchasing experts and analyzed through content analysis. We find that, besides being used for interorganizational cost management, open-book accounting is used in price management. This includes increasing negotiation pressure on a supplier. Based on this finding, we develop a framework to systematize different open-book accounting uses according to both underlying motives for cost transparency and purchasing strategies.

JEL-Classification: M11, M41.

Keywords: Cost Transparency; Interorganizational Cost Management; Open-book Accounting; Supplier.

1 INTRODUCTION

Companies across industries must consistently improve their production processes and reduce costs. While focusing on their core competencies as a means of competitive advantage (Prahalad and Hamel (1990)), companies are increasingly trying to gain access to suppliers' capabilities (Barney (1999)) and purchase goods and services that have previously been provided for in-house. As a result, a company's competitive advantage is based not only on its own capabilities but also on its suppliers' abilities to a high degree (Arnold (2000)). Since in many cases cost reduction programs have already tapped most opportu-

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nities for cost reductions within any single corporation, today's efforts to improve competitiveness must adopt a supply-chain perspective and include both suppliers and customers. In this context, the existing literature suggests that companies set up an *interorganizational cost management* (IOCM) that requires suppliers and customers to find ways to collaboratively reduce costs. Mutual dependence, trust, and extensive information-sharing between the corporations involved have been identified as prerequisites for an IOCM to work (Cooper and Slagmulder (2004)).

Information-sharing not only assumes distributing supply and demand information across supply chain members but, also includes sharing sensitive cost information, which is usually kept secret by any company (Kajüter and Kulmala (2005)). Intuitively, providing such sensitive data within an *open-book accounting* (OBA) agreement (Hoffjan and Kruse (2006)) requires the expectation of cooperative behavior from the supply-chain partner and trust between those companies involved. Although many scholars underscore the point that cooperative and close supplier relationships are more advantageous than adversarial, arms-length relationships (e.g., Lammig (1993); Maloni and Benton (1997); Carr and Pearson (2002)), empirical observations indicate that in reality, supplier relationships are, in many cases, less cooperative than theory might assume (Cox (1996); Parker and Hartley (1997); Gibbs (1998)). The question remains as to what relevance OBA has in a competitive environment that is not normally characterized by cooperative and trusting relationships between suppliers and buyers. To answer this question, we gather and categorize the practical uses of OBA on a larger scale. From this data, we derive an OBA framework that systematizes uses, and which can also be seen as an implementation cornerstone for practitioners.

2 LITERATURE REVIEW

Most publications on IOCM and OBA focus on one of the following pairs of issues: functions and consequences or difficulties and determinants. The established literature also assumes the main function of OBA is to support IOCM measures (e.g., Munday (1992); Axelsson, Laage-Hellman, and Nilsson (2002); Kulmala, Paranko, and Uusi-Rauva (2002); Dekker (2003); Cooper and Slagmulder (2004); Kajüter and Kulmala (2005); Agndal and Nilsson (2008); Piontkowski and Hoffjan (2009)). Accordingly, all relevant publications indicate that cost transparency between customers and suppliers can lead to cost reductions. Another function mentioned only occasionally is the justification of prices and price changes. Carr and Ng (1995) provide an example in which a supplier substantiates a sales price increase with increases in raw material costs. Similarly, Seal et al. (1999) argue that the objective justification of prices and price changes based on transparent accounting data may facilitate price negotiations. Such "legitimate changes" may also include increased fixed cost allocations resulting from a reduced sales volume (Agndal and Nilsson (2009)). The improvement of the relationship (Carr and Ng (1995)) and the creation of trust between the customer and the supplier (Seal et al. (1999)) have been identified as consequences rather than as functions of OBA. Finally, Dekker (2003) suggests that OBA may also serve to improve the company's management accounting.

Another focus of research is the inherent difficulty associated with OBA. Because purchasing costs equal supplier revenues, the use of OBA might also lead to increased margin pressure on the supplier. By knowing the suppliers' cost structures, customers can make use of this knowledge during price negotiations (Dekker (2003)). Although the established literature presents some examples that suggest open-book agreements do not reduce supplier margins ("we don't erode their profit margin – only their costs" Carr and Ng (1995)), there is considerable evidence that companies use OBA to the disadvantage of the supplier (e.g., Munday (1992); Lamming et al. (2001); McIvor (2001); Seal, Berry, and Cullen (2004); Lamming et al. (2005)). In terms of price pressure on the supplier, a certain aspect of using OBA addresses performing cost benchmark analyses between different suppliers and basing price negotiations on a theoretical optimal cost structure (Hoffjan and Kruse (2006)). Kajüter and Kulmala (2005) explicitly mention benchmarking as a potential reason for failure of OBA practices. Other researchers mention concerns regarding the potential circulation of data to competitors to induce them to lower quotes as a further difficulty of OBA (e.g., Lamming et al. (2005); Free (2008)). Another conflict arises regarding the distribution of benefits from IOCM projects between the companies involved. In many cases, it is the more powerful company that can extract most of the benefits (Cooper and Slagmulder (1999)), a position usually assumed to be held by the customer (McIvor (2001); McIvor and Humphreys (2004); Kajüter and Kulmala (2005); Lamming et al. (2005)). Suppliers can often only try to make use of the cost reductions in other customer relationships (Ellram (2002)).

There might also be operational implementation obstacles attributable to OBA. Even if a supplier is generally positive about opening up his books to his customer, OBA may fail because relevant accounting data are not readily available to the supplier himself (Seal et al. (1999); McIvor (2001); Kulmala, Paranko, and Uusi-Rauva (2002); Kajüter and Kulmala (2005)). A similar issue occurs if data cannot be sensibly analyzed due to differences in accounting systems between the companies involved (McIvor (2001); Kulmala, Paranko, and Uusi-Rauva (2002); Kajüter and Kulmala (2005)) or because the organization lacks (capable) personnel with the capacity to perform the analyses (McIvor and Humphreys (2004); Kajüter and Kulmala (2005)). Additionally, interorganizational cost models might simply be too complex and thus heavily impede cost analyses (Tomkins (2001)).

Caglio and Ditillo (2008) mention the intentional exchange of manipulated data as an issue not yet covered in the established literature. Indeed, there is only very limited coverage of this problem. Both Lamming et al. (2001) and Lamming et al. (2005) state that such behavior is rational and must be expected from any supplier as long as the information flow is only one way.

As we have noted, the primary focus of previous research has been the *determinants* of OBA, especially within the context of the underlying relationship between the supplier and the customer. Cooper and Slagmulder (2004) investigate what IOCM techniques firms use in the process of product design, depending on the relationship observed between the companies involved. Similarly, Kulmala (2004) analyzes the impact of power, trust, and mutual business volume on the development of an IOCM. Dekker (2004) analyzes the relevance of trust and the adoption of formal control mechanisms for the

control of interorganizational relationships and the prevention of opportunistic behavior. Möller and Isbruch (2008a) show that IOCM has a positive impact on corporate success if certain relationship conditions are met. Focusing less on the type of relationship, Agndal and Nilsson (2009) investigate the different stages of exchange processes as determinants of IOCMs. They find that IOCM collaboration is strongest in the early phases of an exchange relationship, such as during supplier selection and product development. Seal et al. (1999) discuss the constitutional role of OBA for the development of strategic partnerships.

The role of trust as an integral determinant in the introduction of OBA has received considerable attention in the literature. Many scholars regard a trusting relationship as a prerequisite to introducing OBA (e.g., Carr and Ng (1995); Ellram (1996); Mouritsen, Hansen, and Hansen (2001)). Tomkins (2001) assumes the need for a long-term relationship between companies as a requirement to exchange sensible data. Kulmala (2004) and Seal, Berry, and Cullen (2004) argue that the absence of trust is a key determinant in open-book failure. Trust has thus been considered both a prerequisite and a consequence of OBA. Dekker (2003) as well as Kajüter and Kulmala (2005) try to solve this conflict by stating that there must be a minimal level of trust before cost information can be exchanged, and then, further increases in trust are made possible.

Another determinant of OBA discussed is the existence of commitment devices, for which the mutual disclosure of cost information has received the most attention (e.g., Seal et al. (1999); McIvor and Humphreys (2004)). Lamming (1993) states: "Cost transparency is of no value [...] unless it is two-way". Interdependence between the companies involved has also been identified as a commitment device (Cooper and Slagmulder (2004)), as has the threat of loss of reputation as a consequence of opportunistic behavior (Dekker (2003)). Piontkowski and Hoffjan (2009) show that the offer of a relationship-specific investment can also serve as a commitment device that increases the partner's willingness to engage in OBA. Aside from commitment devices, positive financial incentives, such as a fair division of benefits, can help to increase the willingness to introduce OBA. A long-term contractual obligation or increased purchase volumes may also serve as financial incentives (e.g., Carr and Ng (1995); Cooper and Slagmulder (2004)).

These determinants of OBA influence the willingness to engage in OBA through positive incentives or trust-based mechanisms. But scholars also mention the impact of power asymmetry. "Of course, open-book relations may not be based on partnership and trust but may be *forced*" (Seal et al. (1999)). Similar observations have been made by Carr and Ng (1995) and Seal, Berry, and Cullen (2004). In this context, Kajüter and Kulmala (2005) argue that power-induced OBA cannot safeguard a reduction of supply chain costs. Often enough, it will be difficult to decide if a certain behavior originates from power or from other influences, such as a trusting relationship (Seal, Berry, and Cullen (2004)).

3 RESEARCH

3.1 RESEARCH OBJECTIVES

Our key objective in this paper is to present a full picture of why and how firms use OBA. Thus, we not only include an analysis of the actual uses of cost transparency in customer-supplier relationships, but also examine the importance of those determinants for influencing the interorganizational use of accounting data.

We analyze the common assumption that OBA can only work in a trusting relationship in greater detail. Given that business relationships are usually not likely to be characterized by high levels of trust and cooperative behavior between all parties involved, the *trust prerequisite* would severely limit the application range of cost transparency. In such a context, we ask what relevance the power structure between the companies has from a practitioner's point of view. We also examine the potential manipulation of data that does not fit with cooperative relationship theory. Given that such invalid data will impede using OBA as planned, firms will need mechanisms to cope with this difficulty.

3.2 RESEARCH DESIGN

We use a qualitative research design supplemented by quantitative analysis. We do so because the research objectives defined above require incorporating a broad range of experiences and opinions from practitioners and given that OBA research can still be considered immature.

We set up a three-tiered design that allows us to evaluate all of the aspects indicated above. First, we consider that expert interviews are the appropriate research approach (Scholl (2003)). Second, we analyze this data and mirror the main results to the interviewees from Phase One. We accomplish this task by using an online questionnaire that we designed to either affirm or contradict the results obtained from the interviews and to allow for certain quantitative analyses. From a total of 59 interviewees, we received 46 completed questionnaires. The insights gained from these two steps are the main topic of this paper.

Our third step was to take into account the reverse perspective. To support the results, especially for data manipulation, we conducted 18 interviews with sales experts. Due to the sensitive data contained in this study, we could not set up a complete dyadic design with a matched sample. Instead, we contacted sales experts through a business community website (XING AG (2009)¹) and not those who were suppliers to the interviewed customers. We use the data retrieved from the third step to validate our results from research Phases One and Two, but do not present the results separately, since we wish to

1 XING is a predominantly German, web-based portal, through which mainly business contacts can be acquired and managed.

keep the paper focused on OBA uses². *Table 1* summarizes objectives and data evaluation measures applied in Phases One and Two.

Table 1: Research design summary

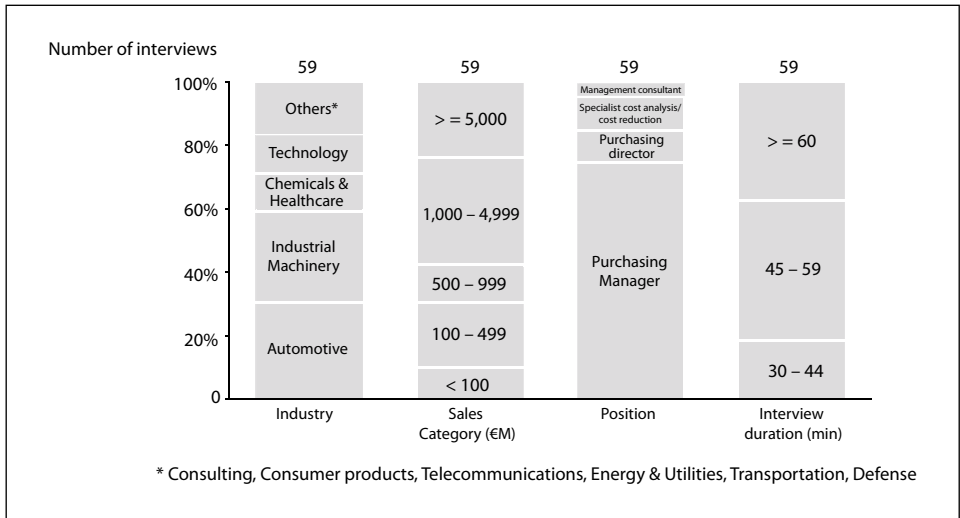
	Expert Interviews	Online Questionnaire
Objectives	<ul style="list-style-type: none"> ▪ Comprehensive discussion of the derived questions regarding open-book accounting ▪ Identification of exceeding approaches 	<ul style="list-style-type: none"> ▪ Quantitative validation and contrasting of interview results ▪ Supplemental identification of existing relationships
Data Collection	<ul style="list-style-type: none"> ▪ 272 interview inquiries ▪ 59 qualitative, open interviews ▪ Average interview duration: 53 minutes ▪ Written record of interviews 	<ul style="list-style-type: none"> ▪ Inquiries with 57 of 59 experts from interviews with standardized questionnaire ▪ 46 completely filled in questionnaires returned ▪ Estimated time for completion: 10 minutes
Data Evaluation	<ul style="list-style-type: none"> ▪ Classification of statements in categories and analysis of answer patterns ▪ As far as possible, quantitative aggregation and analysis of answer frequencies 	<ul style="list-style-type: none"> ▪ Statistical analysis with SPSS

Starting in Phase One, we set up interview guides to structure the interviews and to ensure the comparability of different expert statements during the analysis phase. Because most of the problems arising in the context of OBA are due to some kind of opportunistic behavior on the customer side, we targeted purchasing experts for participation in the research project. We based our recruiting of interview partners on personal contacts, referrals from interview partners, and cold-calling relevant experts identified based on their personal profiles on the XING business network. We recruited more than 90% of all interview partners from the business community website. To ensure that the interviews contained the whole spectrum of opinions, experiences, and ideas on OBA from the customer perspective, we set no constraints or requisitions for potential interview partners, except for practical knowledge in the field of strategic purchasing. To broaden our focus, our sampling was aimed at representing all industries and company sizes in which OBA is of importance. Whereas former studies mostly chose an industry-specific focus (e.g., Carr and Ng (1995); Free (2008); Möller and Isbruch (2008b)), obtaining a cross-industry sample was also important, since our research targets the identification of different ways in which OBA is used. Following Patton (2002), our selection of interview candidates aimed at securing a broad range of perspectives on the subject. Therefore, we did not choose purchasing experts based on their knowledge about OBA, but only on

² For results on the supplier perspective please refer to Hoffjan and Lührs (2010).

their general purchasing experience. We also stated explicitly that persons not familiar with OBA should also take part in the research project. We identified 272 potential interview partners who met these specifications and contacted each one with an interview request. We conducted interviews until a point of saturation, such that additional interviews did not yield any further insights (Kvale (1996)). To discern this point, only one interviewer led all interviews and kept a record of main aspects mentioned. Furthermore, our interview design ensured that the sample also met the criterion of inner representation, under which the sample had to contain both different as well as typical cases (Helfferrich (2005)). This requisite was ensured by including different industries and company sizes, as stated in *Figure 1*. In comparison to other qualitative research concerned with OBA, the realized sample can be seen as fairly large (e.g., Kajüter and Kulmala (2005); Agndal and Nilsson (2010)).

Figure 1: Purchasing expert interviews: Sample



Since the exchange of cost information is a sensitive subject for potential interview partners and because experience from former research projects shows that willingness to provide information is generally low, we decided to conduct the interviews without recording them. Although tape recordings are common in the social sciences (Scholl (2003)), they can and should be avoided if the interview partner has reservations against such a recording or will refuse to take the interview (Yin (2003)). Because there was no need to analyze the wording in detail, the omission of tape recordings was considered appropriate.

Despite the fact that qualitative interviews in social sciences are generally held in person (Sturges and Hanrahan (2004)), we base our research on expert interviews conducted

on the phone. We chose this approach for a variety of reasons. There is only limited evidence regarding quality differences between telephone and personal interviews (Sturges and Hanrahan (2004)). However, in the context of sensitive questions within qualitative interviews, Sturges and Hanrahan (2004) identify advantages for telephone interviews. Scholl (2003) asserts that, due to the more anonymous interview situation, statements in a telephone interview are more likely to be genuine than during personal interviews. Another advantage of telephone interviews is the easier access to relevant experts (Fenig et al. (1993)). Moreover, the willingness to be interviewed has been shown to be higher for telephone interviews (Sturges and Hanrahan (2004)). Further, many scholars acknowledge the higher cost efficiency of telephone interviews compared to personal interviews (e.g., Frey (1989); de Leeuw, Mellenbergh, and Hox (1996); Scholl (2003); Sturges and Hanrahan (2004)).

Between December 2008 and March 2009 we interviewed individuals from large and medium-sized companies. These individuals either had purchasing backgrounds or were purchasing managers. Each of the 59 interviews lasted between 30 and 90 minutes (average = 53 minutes). The reason for including so many experts was to not only comprehensively explore the research subject, but also to identify uncommon applications of OBA and to allow for some quantitative analyses.

The subjects of the online questionnaires were the assessment of supplier relationships and the willingness to disclose cost information, intention, and focus of disclosure, from the purchaser perspective, as well as the conditions and effects of disclosure. Answer categories included either assessment of the importance of certain items or approve/disapprove statements. Aside from one question, for which items had to be ordered by their importance in a forced ranking, we used a five-stage Likert scaling. The sample of purchasing experts from Phase One is composed of the returned questionnaires (80.7%).

When the interviews were completed, we analyzed each interview and reported the results to the original interview partner with a request that they complement and validate results.

3.3 ANALYSIS AND EVALUATION

We analyzed the interview transcripts using content analysis (Mayring (2008)). We combined qualitative analyses with quantitative measures, such as taking answer frequencies as an indicator of relative importance of certain items. Based on the detailed research questions that were the foundation of the interview guides, we set up an initial category scheme and, following Gläser and Laudel (2009), we constantly updated the scheme when content analysis yielded additional content that had not yet been included. Answer (sub-)category values were mostly dichotomous (mentioned/not mentioned) but also included freely phrased answers. We describe our framework deduction as a “counter-current process”: first, we derived our categories top-down from the established literature and then refined them during the coding process.

As noted above, we validated the results from the interviews through an online questionnaire. We evaluated the answers statistically using SPSS 16. The measures we use are frequencies, correlations between individual variables, and differences in the mean value of individual variables depending on the value of an independent variable (one-way ANOVA).

We evaluated the analysis according to the criteria Krippendorff (2004) specifies for reliability: stability, reproducibility, and accuracy. To address stability, one author coded the data twice. However, the second coding process could not verify the first coding satisfactorily because classifications for purchasing strategies and the key motivations of the interviewed experts varied. This deviation also made the derived framework questionable and led us to build a new framework based on the results of the second coding. To assess the new framework, we applied reproducibility by recoding the material with a second author who had not thus far been involved in the research. This recoding resulted in high congruence with the second coding, with classification varying only up to 10%. Thus, we were able to conclude that the reliability criterion was sufficiently fulfilled. Accuracy measures could not be applied because the objective standards against which our analysis might be tested are not available.

Applying validity measures, we used the test criteria suggested by Gibbert, Ruigrok, and Wicki (2008): internal, construct, and external validity. The topic of this paper can be seen as exploratory, and causal relationships are not our main focus. Because of this aspect and following Yin (2003), the problem of internal validity is only of secondary importance. Nevertheless, disruptive factors that cannot be controlled may impact the results, e.g., data collection occurred during the financial crisis of 2008/2009. The techniques we use to ensure construct validity include establishment of a clear chain of evidence and triangulation (Gibbert, Ruigrok, and Wicki (2008)). The chain of evidence in our study is based on qualitative statements of persons interviewed and is supported by quantitative analysis of the respective subject, which makes it easy to understand. Additionally, we confirmed interview results through a standardized survey and subsequently supplemented it by a complete change of perspective, when we took the supplier perspective into account. Construct validity can be seen as partly fulfilled. Due to the applied research design, a statistical generalization of results, which would allow drawing inference conclusions about a population, is not possible (Gibbert, Ruigrok, and Wicki (2008)). The presented sample is comparatively large for a qualitative study; thus, we can derive certain conclusions regarding patterns in the basic population. The analysis of answer frequency, as we applied it, is seen as a good possibility to confirm qualitative impressions (Dubois and Araujo (2007)). On all accounts, analytical generalization for this study is possible. We brought together experiences and opinions of a multitude of experts, contrasted those and explored them for similarities.

4 EMPIRICAL OBSERVATIONS

4.1 PURCHASING PERSPECTIVES ON OPEN-BOOK ACCOUNTING

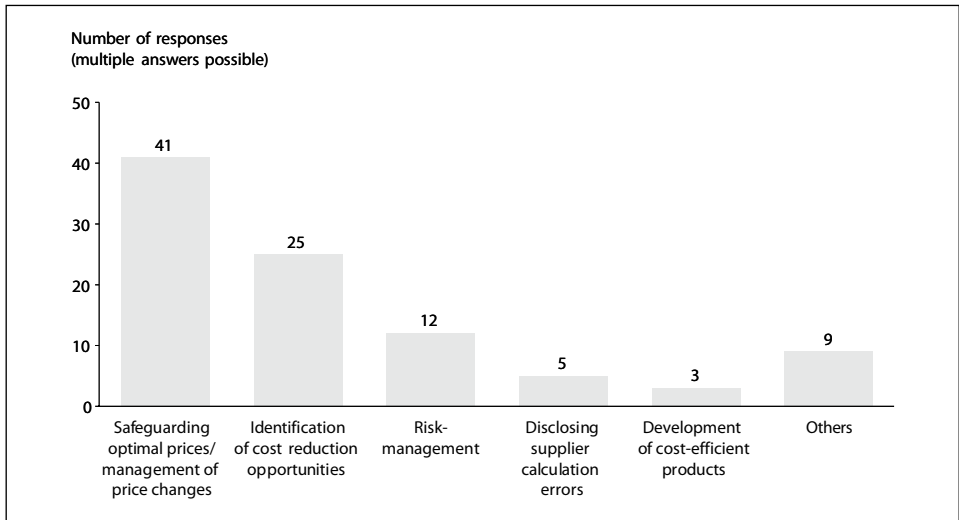
WISH FOR COST TRANSPARENCY AND CURRENT DIFFUSION

Our analysis shows that OBA is highly relevant in today's purchasing world: 91% of our interviewees state that they would like to have transparency regarding their suppliers' costs, which indicates that they expect distinct advantages from the use of OBA. However, purchasing managers obviously expect that advantages primarily accrue to the customer. On the question of willingness to provide cost information to their customers if they were in the supplier's position, only 30% answered they would do so in any case. Another 50% stated they would decide case by case whether to provide such data, and 20% clearly indicated they would try to avoid cost transparency as a supplier.

We find that one third of the managers interviewed do not have any transparency concerning their suppliers' costs, but 26% state that they do have some kind of cost-based view for more than 50% of their purchase volume. Industry analysis shows that there is considerable difference between industries. The automotive and technology industries have the highest levels of transparency. Some automotive purchasing experts even state that they have cost transparency for their total purchasing volume. Purchasing experts who use OBA often require their suppliers to provide cost information through so-called supplier cost breakdown forms that differ in structure and in level of detail, but usually provide cost information for every component of the bill for materials, including both materials and production costs and the cost of items that comprise them. Moreover, overhead costs and profits are usually explicitly mentioned.

We find that sharing customer cost information with suppliers is the exception. Although the customer often has detailed knowledge about suppliers' costs and profits, the supplier in general does not have such knowledge. Obviously, the risk profile for such a unidirectional exchange of cost information is heavily weighted toward the disadvantage of the supplier.

Previous research indicates that the primary *reason for cost transparency* is to reduce costs in the course of IOCM. But our interviews draw another picture. The reason mentioned most often is safeguarding an optimal price by improving the own negotiating position (see *Figure 2*). In this context, a potentially positive impact on the supplier's cost structure is not targeted by purchasing managers with OBA, but often, managers seek to avoid undue supplier margins.

Figure 2: Customer reasons for cost transparency

“The reason for cost transparency is to realize an optimal purchase price. [...] We use supplier cost information as a basis for price negotiation.”

Purchasing manager, automotive OEM

“Of course we make sure that the supplier’s profit margin is adequate, even if he offers the lowest price. It must not happen that he has too large a profit margin.”

Purchasing manager, manufacturer of dental products

The interviewees clearly expressed a desire for increased negotiation pressure on suppliers’ prices. However, in some situations, negotiations may also be facilitated through OBA. This relation is true if cost transparency helps to justify supplier price increases.

“Cost transparency is important to understand if supplier price increases are justified. You don’t want to pay too much, but you don’t want to knock him down either.”

Purchasing manager, plant construction company

Even though OBA might support suppliers’ arguments for cost increases for which they are not responsible, suppliers must be aware that often even justified price increases are not accepted by customers. A purchasing management consultant describes the situation as follows: “Think of the situation where a customer orders less than the planned volume, which leads to idle capacity at the supplier. If now the supplier tries to put through price increases based on resulting increased fixed cost allocations, the customer does not necessarily accept those. Business simply is not fair! Cooperation romance is not real!”

Aside from using OBA to improve one's own negotiation position, purchasing managers also try to identify and implement cost reduction opportunities through cost transparency, which is the second most often mentioned reason. In general, the identification of supplier cost disadvantages either results from benchmarking analyses carried out between suppliers, or by comparing supplier cost information with industry benchmarks. Another use of cost information in terms of cost reductions is to develop cost-efficient products. Through cost transparency, purchasing managers may be able to determine why a newly developed product has certain costs based on the specifications given and what cost reductions can be expected through product design changes.

Although the reasons mentioned thus far have all been discussed at some stage in the established literature, a function of OBA that has not yet been covered is its use in supporting risk management. Customers gain insight into, and are able to evaluate, supplier profitability to avoid insufficient profitability levels of the supplier, who then might be forced to increase prices at a later stage in the exchange process or simply not deliver. In addition, disclosing supplier calculation errors can be regarded a means of risk management, which has been mentioned by the interviewees as a separate factor.

VALIDITY OF COST INFORMATION

Because suppliers may manipulate cost information disclosed to their customers, we asked the interviewees if they believed the cost information their suppliers provided them was truthful. Indeed, 89% of the interviewees stated they do not believe the information, and in general critically question their suppliers' cost information. Purchasing experts have developed a variety of approaches to verify the cost information they get. In most cases, purchasing experts try to set up a so-called "shadow calculation" in which they calculate estimated costs for the product based on their own business knowledge and on the data available from reliable public sources or company files. However, we found strongly varying levels of sophistication in this approach. While in the lowest form managers could make only a rough estimation of certain cost positions based on personal knowledge, in more advanced cases purchasing experts make use of highly sophisticated software solutions that include comprehensive and regularly updated cost data on a variety of processes and materials. In this context, large corporations as well as companies in the automotive industry are more sophisticated than others.

IMPACT OF POWER AND RELATIONSHIP CONTEXT

As noted above, many scholars consider a trusting relationship as a prerequisite for OBA. Our research generally confirms that trust between a customer and supplier positively influences the supplier's willingness to engage in OBA and the validity of information exchanged. Assuming that trust can only develop over the course of a long-term business relationship, we would expect that a supplier's willingness to engage in OBA is greater in long-term customer-supplier relationships. On the contrary, our results indicate that in purchasing managers' experiences, the likelihood of receiving supplier cost information

was greatest in new relationships (48% of respondents). Only 37% of the purchasing managers interviewed stated that OBA can be implemented more easily with older, well-established supplier relationships. One reason for the expectation that cost transparency is more easily implemented with new suppliers is that suppliers from older, well-established supplier relationships may fear that customers will realize that they have been paying too high a price in the past, or suppliers may simply not be willing to change anything that has been working well for them in the past. Additionally, OBA is regularly made a precondition for the award of a contract, which also favors new relationships. Making OBA a precondition can be regarded as an application of power that underscores cost transparency. It is often not realized in the course of establishing trusting and cooperative relationships, but instead is forced. Forty-five interview partners state that exercising power is relevant for supplier cost disclosure, but only 34 say that the relationship context is relevant. The stronger focus by practitioners on exerting power as a way to achieve supplier cost disclosure emphasizes the need to include this confrontational approach to realizing supplier cost data disclosure in academic research.

4.2 DEVELOPMENT OF AN OPEN-BOOK ACCOUNTING FRAMEWORK

Our research shows that purchasing experts not only use cost transparency to identify cost reduction opportunities but also in terms of price management, and that by exerting purchasing power supplier cost disclosure is realized despite the lack of trusting or cooperative relationships. Given that the uses and relationship backgrounds are highly divergent, we expect to find that there is not a single type of OBA, but that there are various types that need to be made explicit and arranged according to an OBA framework. To do so, we analyze the interviewees' key motivation for cost transparency and compare this to the purchasing strategy applied by those purchasing experts in the respective context. We follow the approach and complement the results of Agndal and Nilsson (2010), who analyze OBA practices for different purchasing strategies (transactional compared to relational).

PRIMARY MOTIVATION FOR OPEN-BOOK ACCOUNTING

We first analyzed interview statements for their primary motivation for OBA in terms of price or cost management orientation. As long as the interviewee gave motivations for both cost and price management applications but no primary motivation could be clearly identified, we allocated the case to a third category between those of cost and price management. *Table 2* provides an overview of statements that we used to identify the interviewees' primary motivations for OBA, considering the respective interview contexts they were given.

Overall, we can state that the motivation for price management strongly outweighs the motivation for cost management. We identified price management as the key motivation for 36 interviewees, but identified an explicit cost management focus for only five respondents. Another seven interviewees cannot be clearly assigned to any single type of motivation, so we allocate them to a position between price and cost management.

Table 2: Examples of statements used as a guideline for the classification of the primary motivation for open-book accounting between price management and cost management

Primary motivation: price management	Primary motivation: cost management
"Reason is to realize an optimal price."	"Because you can only realize savings if you identify where they are!"
"We want to understand the suppliers' calculations."	"We must optimize product costs early in product development – to do so we definitely need cost transparency."
"In order to snatch a better price!"	"Identify and realize savings opportunities: [...] We might well do some engineering changes."
"To validate plausibility of supplier price increases."	"To understand and identify cost drivers, such that we can perform product changes."
"In the end, open-book accounting is only another negotiation strategy."	"Moreover, descriptions of how cost transparency is being used in collaborative cost management projects."

PURCHASING STRATEGY APPLIED

We subsequently analyzed what purchasing strategy is being followed, i.e., whether managers tend to follow a transactional or relational purchasing strategy with their suppliers, based on the comments of the purchasing experts. Analogous to our approach in determining the primary motivation for cost transparency, we analyzed statements with respect to the purchasing strategy when confronted with OBA. Again, a third category between transactional and relational purchasing strategies was used in case both transactional and relational elements were identified without being able to disclose the primarily targeted purchasing strategy. *Table 3* gives example statements that we used to determine the applied purchasing strategy.

Table 3: Examples of statements as a guideline for the classification of the purchasing strategy between a transactional and relational approach

Transactional purchasing strategy	Relational purchasing strategy
"We aren't talking about fairness!"	"We are interested in collaboration based on partnership."
"You obviously have a different leverage. There are simply more starting points to any negotiation."	"For us it is important to have long-term supplier relationships."
"Overall, cost transparency certainly results in pressure on supplier margins."	"[Suppliers that disclose] will definitely receive more sales volume from us, which gives them planning reliability as well as higher capacity utilization."
"Whoever refuses to disclose is likely to be shown the door."	"It's important the supplier has fun working with us."
"It is massively used in favor of the customer. [...] I'm not a friend of win/win-talk. How do you think should that work?"	"We'd never take all the savings, but always aim for a win/win-situation."

We identify characteristics of relational purchasing strategies for a total of 16 interviewees, but find a more transactional purchasing strategy for ten cases. For another 12 interview partners, the observed purchasing strategy had both transactional and relational elements, but in 17 cases an allocation to any category was not possible because the interviewee did not give us relevant statements.

IDENTIFICATION OF OPEN-BOOK ACCOUNTING APPROACHES

Based on the descriptions of different OBA uses collected during the interviews, we derive in a third step three different approaches to cost transparency and determine what approaches are primarily targeted by the purchasing managers we interviewed.

We consider type A OBA as the classical use of cost transparency to increase pressure on supplier prices. Theoretical prices based on cost benchmarks are used as a negotiation baseline, where the potential to realize such an optimal cost base is irrelevant to the customer. Suppliers in this context are generally given maximum overhead rates and profit margins. All cost changes favoring the customer are followed by price reduction claims, but requests for price increases due to increased costs are generally not accepted by the customer. However, the supplier may benefit from the cost benchmarks supplied by his customer and might actually improve his cost position. Type A OBA uses are indicated by purchasing managers through expressions such as *increase pressure on supplier margins*, *calculating best-of-offers*, *cherry picking*, and *bargaining*.

Type B OBA aims only at reducing transaction costs related to price negotiations. Reducing product costs or prices are not the focus of this OBA approach. Instead, price negotiations are facilitated by defining a common cost baseline and by rules that define price changes based on cost changes at later stages of the exchange relationship. Thus, both companies benefit from easier and more objective price negotiations. When interview partners referred to this OBA approach, they often used expressions such as *objectification*, *increased objectivity*, or *facilitation* of price negotiations. As one interview partner mentioned: "You simply get rid of all the haggling."

Type C OBA describes the commonly discussed IOCM approach. It targets substantial cost savings and not only highlights theoretical opportunities (such as in type A OBA), but also focuses on factual implementation. Moreover, not only does it analyze supplier cost deficits, but, more generally, it targets the most cost-efficient aggregate solution. Both companies realize measurable financial advantages from the project.

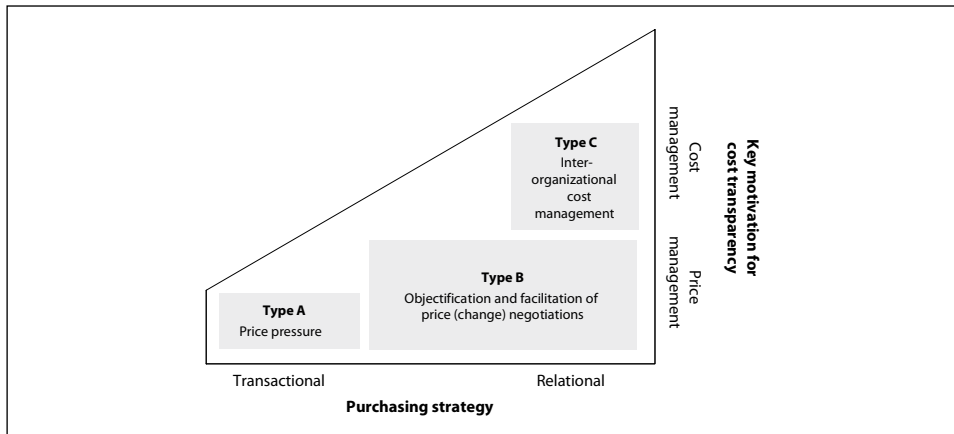
We find that most interviewees do not follow a single OBA approach, but usually use more than one. Therefore, we identify both primary and secondary uses based on the descriptions purchasing managers provided regarding their uses of cost transparency. We find that all of the approaches identified are commonly used by purchasing managers when they consider both primary and secondary uses. However, when focusing on primary uses only, it becomes obvious that objectification and facilitation of price (change) negotiations (type B OBA) and increasing price pressure through cost transparency (type A OBA) get

the most attention. This finding highlights that using cost transparency in terms of IOCM (type C OBA) cannot be regarded as the main goal of cost transparency from a purchasing practitioner's perspective.

CONSTITUTION OF OPEN-BOOK ACCOUNTING FRAMEWORK

Drawing on the purchasing strategy and the key motivation for cost transparency overall, *Figure 3* illustrates the way in which we can differentiate the three uses of OBA, and in what contexts we can expect to find their applications.

Figure 3: Approaches to open-book accounting in relation to the key motivation for cost transparency and purchasing strategy



The framework shows that cost transparency is not used just to support IOCM. On the contrary, in many cases it becomes a means to increase pressure on supplier prices within the context of a transactional purchasing strategy. Moreover, we also see that often, OBA also facilitates price negotiations by giving them an objective foundation. This application of cost transparency can be found within both transactional and relational purchasing, but has a somewhat more relational orientation.

For type C OBA, we can determine not only a strong focus on cost management as a key motivation for cost transparency, but also as a strong force within a highly relational purchasing strategy context. Thus, we can state that true IOCM is indeed being performed on the basis of cooperative supplier relationships.

5 IMPLICATIONS

PRICE MANAGEMENT IS GIVEN SUBSTANTIAL IMPORTANCE

Although accounting scholars thus far have largely identified OBA as a means to support ICOM, we have found that practitioners strongly value cost transparency to be used for price management. In this context, researchers have identified both increasing negotiation pressure on the supplier and facilitating discussions on price changes as objectives of OBA. Ramsay and Croom (2008) criticize the fact that academic researchers perceive purchasing negotiation approaches as having low importance, and argue that those bargaining activities may well have strategic impact. This scholarly misconception of purchasing functions and associated purchasing approaches may be a reason why recent research has focused so strongly on purely collaborative uses of OBA. Reality shows that increased price pressure is not only a potential consequence of OBA that arises after cost transparency has been provided to allow for IOCM projects, but it often is *the key motivation* for requesting cost information from suppliers. If we accept this idea, then other aspects of OBA also require reconsideration.

DEMYSTIFICATION OF COOPERATION AND TRUST AS PREREQUISITES OF OPEN-BOOK ACCOUNTING

The research we present here indicates that OBA may well be used in a trusting and cooperative relationship. We have shown that cooperation in terms of IOCM indeed requires suppliers and customers to follow collaborative relationships. However, OBA is not limited to such applications that necessarily benefit both parties involved. Instead of trust, power asymmetry has a significant impact on the likelihood that a supplier will open his books to his customers. Trust cannot be sensibly expected in highly competitive (transactional), often adversarial business relationships, but OBA is still being used in those contexts – not to perform IOCM projects but, more commonly, to increase negotiation pressure, which may include the identification of potential cost disadvantages at the supplier. While the customer behaves opportunistically with supplier cost information for negotiation purposes, the supplier may in turn manipulate his cost information, thus also acting opportunistically. One may argue that suppliers only do so to protect themselves, but they may also aim at realizing profit margins higher than those agreed upon with their customers (Hoffjan and Lührs (2010)). This can well be regarded as an opportunistic act because the customer is expecting to close a (from his point of view) fair deal that he does not get. In the end, both parties try to individually maximize their profits and accept that this commonly is to the disadvantage of the other party. However, relationship improvements may occur even in those contexts. Objectifying and thus facilitating price change discussions is a cost transparency function that prevents customers and suppliers from otherwise having often strongly subjective price negotiations.

OPPORTUNITIES FOR FUTURE RESEARCH

Because price management is an important application of OBA, future research on cost transparency could extend the perspective from IOCM to this aspect. Currently, the impacts of OBA on price management in customer-supplier relationships have not been systematically

researched, although they have been shown to be highly relevant in practice. Both experimental and (analytical) research on OBA should incorporate not only the price management application, but also focus more on the opportunistic behavior to be expected from both customers and suppliers. Experimental, analytical, and additional evidence from field research can help to understand the incentives associated with OBA more comprehensively.

Because our research is exploratory in nature, future empirical research might focus on testing hypotheses on the uses of OBA. To better understand what type of OBA is preferable in which particular business situation, researchers should determine what impact the application of each of the three types of OBA has on company success. Variables likely to influence the success of individual OBA uses are the relationship context observed, power asymmetries, past experiences with OBA, business situations of both respective companies, the overall industry market situation, the strategic importance of the products analyzed, and the time at which OBA was implemented in the product life cycle. This analysis should also require quantifying all costs associated with OBA on the side of the supplier and customer.

Our research is also limited concerning the supplier perspective, because data sensitivity precluded setting up a full dyadic design. Another opportunity for future research could take this into account and focus on OBA uses and their impact on mutual customer-supplier relationships. Further, confirming distinct differences between industries on the uses of OBA was not a main objective of our research. Thus, using a cross-industry sample, our results for industries were not homogeneous. For example, we can confirm that in industries with more standardized purchased goods and significant cost pressure, such as the automotive industry, cost transparency is more common than, e.g., in plant construction. Our results also indicate that increased negotiation pressure as a consequence of OBA implementation has higher significance in these industries than in others. To verify these indications for special industries and to disclose other relationships, future research might use a sample that focuses more on industry comparability.

Our study is limited to the application of OBA in product industries only. We assume that cost transparency can also be useful for service industries. Because until now research has not covered this specific area of its application, further exploratory research is needed to identify similarities and differences compared to the product realm presented here. Given that services have less precisely defined specifications than products (Ellram, Tate, and Billington (2004)), and definitions of the underlying costs are assumed to be more complicated than for products (Zeithaml, Parasuraman, and Berry (1985)), researchers should expect and carefully examine additional difficulties on the use of OBA.

PRACTICAL CONTRIBUTIONS

Our empirical findings and our framework of OBA uses hold several implications for practitioners. Purchasing departments that are deciding whether to use OBA and in which way to implement it might use this framework as an implementation cornerstone. The framework offers two dimensions for consideration: whether the approach should be focused on cost or price management and which purchasing strategy fits best.

Purchasing decisions on which approach to follow in terms of focus must consider various aspects. First, managers must determine if and how supplier competition can be increased through OBA. Second, the manager's decision must also consider the strategic importance of the respective product. Because additional price pressure may lead to the supplier changing product characteristics (e.g., quality) to improve his cost structure, this approach is not suitable for strategic products. The choice between cost or price management is also influenced by the time horizon available for the realization of the cost reductions and by the personnel capacity available for project management. Negotiated price reductions can have short-term bottom-line impact and can be implemented with few resources, but cost management projects require more time and human resources.

The use of OBA must also consider the purchasing strategy. But, as the framework shows, this relation cannot be seen as independent of the chosen cost or price management approach. Since the targeted purchasing strategy will vary between suppliers and may even be different for certain products purchased from the same supplier, and because the primary objective of OBA may also be either price or cost management, implementation must follow a systematic and context-specific approach.

Within the process of actually implementing OBA, two problematic aspects encountered by most purchasers and customers interviewed need to be addressed: cost definitions and cost breakdown forms. Differing cost definitions lead to misunderstandings and undesirable cost discussions between suppliers and customers. Although qualification programs may sensitize purchasing managers to the problem, the problem itself – a missing standardization of cost accounting systems – is not solved. The problem of inconsistent, and hence impossible to analyze cost information between companies, has not yet been the focus of research. Although Wentz (2008) urges management accounting to develop a common information system for all members of automotive supply networks, specific propositions on how to realize this claim are still lacking.

Further administrative efforts and errors result from the variety of cost breakdown forms used. Although the specific structure of the forms is usually different, in many cases identical cost items are being requested by the supplier to be disclosed. Coordinating form structure and cost items would require developing IT interfaces, such that breakdown forms could either be filled out automatically from cost calculation software or information even be transferred automatically into the customers' IT system. Obviously, systematized cost definitions are the premise of such an endeavor. Manual administrative effort of OBA might be significantly reduced, especially for the supplier, but the customer would also benefit from fewer cost information errors as well as fewer deviations from the customer cost definition.

6 CONCLUSION

In this paper we show that the range of applications of OBA is wider than recent literature would suggest. We find that cost transparency can be used successfully to support price management, and that it does not necessarily require a cooperative and trusting customer-

supplier relationship. Using the open-book framework as an implementation guideline can help to systematically determine how open-book accounting should best be applied in any given business situation. However, opportunistic behavior must be expected both by customers and suppliers. OBA requires both parties to take safeguarding actions, which include suppliers' manipulations of cost information and customers' efforts to identify those manipulations.

Our study has certain limitations. First, because it is exploratory in nature it does not allow statistically relevant statements. However, including the experiences of a large number of experts from a variety of industries and different corporate backgrounds should allow for well-founded conclusions about the current uses of OBA, its determinants and its difficulties. Nevertheless, future empirical research can add to the results presented here by testing hypotheses developed from this research. Such an endeavor would also allow for the inclusion of control variables in the analysis. Second, our strong focus on price management may also be due to the time frame of this research, which we performed during the economic crisis in 2009/2010. Further research may show what impact the business situations of both the respective companies and the overall industry market situation have on the uses of OBA. Because the focus of this and other research is on the application of OBA for products, future research should also analyze the implications of using cost transparency in service industries.

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