

ACCOUNTING FOR SUSTAINABILITY

**A QUALITATIVE CASE STUDY OF HOW A SUPPLIER USED
ACCOUNTING TOOLS TO CHANGE THE CUSTOMER'S
PERCEPTION OF VALUE**

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Abstract

Extant research, beyond the accounting domain, has investigated how to integrate sustainability in interorganizational relationships, whilst little has been said within the field of accounting. This concern is now addressed in a qualitative single case study of a collaboration agreement between a buyer and a supplier. This paper is the first to take the supplier's perspective and examines how a supplier can make their customers account for sustainability. The assumption has been that the customer has been seen as the constructor of value and thereby has been able to control their suppliers. By drawing upon the valuation perspective we contribute to previous literature in three ways. First, we understand that trust must be built to influence a customer's valuation practices. Trust was important to build since there was a large perceived technological risk with the supplier's product. The risk was mitigated through an internal ally in the customer organization serving as a "trust enabler". Second, we find that when trust was built the supplier was able to apply a new accounting tool on their customer to consider sustainability, namely a TVO calculation. The TVO calculation shifted the customer's focus from investment cost to total lifecycle value. Third, we contribute with insight into how a supplier who is dissatisfied with how a customer evaluates them can reconstruct how customers perceive value ultimately becoming the constructor of value.

Keywords:

interorganizational relationships, valuation, value, sustainability

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1. Introduction

During the past decades, several researchers have investigated how control in interorganizational relationships has been used to manage the complexity of buyer-supplier relationships (e.g., Håkansson & Lind, 2004; Mouritsen & Hald, 2018; Jack et al., 2018; Neu et al., 2014). Within buyer-supplier relationships, the role of trust has been seen to play a large role (e.g., Dekker, 2004; Van der Meer-Kooistra & Vosselman, 2000; Tomkins, 2001). Trust is defined as the expectation that another party will behave in a predictable and acceptable manner (Sako, 1992). What the studies within trust in interorganizational relationships have in common is that they study trust in relation to other people, but as Luhmann (1979) argues, trust can also apply to things. Trust is seen as a type of social control used to manage interorganizational relationships (Dekker, 2004), but other forms of interorganizational control include, for instance, accounting tools. Accounting tools have been used to determine what is of value, where the vast array of research has pointed to the customer being in control of the tools used (Caglio & Ditillo, 2008; Mouritsen & Hald, 2018; Christner & Strömsten, 2022). The controls used on their suppliers have mainly unfolded by demonstrating value as financial where extant research has focused on operational expenditures (“OPEX”) and capital expenditures (“CAPEX”) (e.g., Seal et al., 2004; Free, 2008; Ellram & Siferd, 1998; Ittner et al., 1999; Wouters et al., 2005). The Total Value of Ownership (“TVO”) calculation moves beyond the CAPEX and OPEX focus into considering additional revenue potentially stemming from working with superior suppliers (e.g., Snelgrove, 2012; Christner & Strömsten, 2022). Although there is a wide scope of research studying how revenue and costs can be accounted for in interorganizational relationships, limited attention has been paid to how sustainability can be quantified and considered as value in interorganizational relationships (e.g., Spence & Rinaldi, 2014). Little is known about how suppliers can use counter-accounting to influence which valuation criterias are considered by the customer (e.g., Mouritsen & Hald, 2018; Christner & Strömsten, 2022). Moreover, very few previous studies have researched this from the supplier's perspective (Christner & Strömsten, 2022).

This paper addresses the lack of research from the supplier's perspective on how suppliers can impose counter-accounting in interorganizational relationships to change the prevalent valuation criteria as motivated by Christner & Strömsten (2022). First, our study seeks to understand the role of trust when a supplier wishes to communicate the value of a new technology. Second, we investigate how sustainability can be communicated as a new valuation criteria. Third, by investigating how sustainability can be incorporated into interorganizational accounting, this study intends to understand how suppliers can impose new valuation criterias on customers by using accounting. This study seeks to understand how suppliers through the use of accounting tools can influence their customers to make more sustainable purchasing decisions. Thus, the empirical research question of our study is as follows:

How do suppliers use accounting tools to reconstruct customers' perceptions of value?

To answer the research question the theoretical lens of valuation has been applied (e.g., Kornberger, 2017; Cochoy, 2008; Porter and Kramer, 2011). Kornberger (2017) argued that previous studies within valuation assume value to be constant. Instead, he suggests that valuation is a constantly ongoing process. He states that “value is neither understood as the property of an object nor as a subjective preference; rather, values are constituted through valuation practices”. Further, he presents four mechanisms of how value is constructed and how this in turn structures rivalry. Moreover, he proposes how different actors can use strategic agency to influence how value is constructed if they do not like the structure of rivalry. Cochoy (2008) does not state it as a strategic agency but similarly found that something as simple as a shopping cart can influence how a customer perceives value. Through applying the lens of valuation we understand that different stakeholders have various perspectives of what they view as valuable and how this in turn affects how goods are evaluated. Ultimately, it provides insight into how value is constructed and how suppliers can pivot interorganizational accounting to their advantage.

The empirical research setting in this study is a supplier within the refinery industry (“SupplyCo”), an industry with a historically limited focus on sustainability, due to traditional ways of working. To study how accounting tools can be used by suppliers to communicate the value of sustainable solutions, SupplyCo has been viewed as a suitable case company. SupplyCo has a large emphasis on sustainability by providing heat exchangers to a broad range of applications and industries. This thesis studies how a traditional sales process for SupplyCo is structured and how a collaboration agreement was reached between SupplyCo and CustomerCo. For SupplyCo to reach the agreement in question, CustomerCo’s perception of value needed to be reconstructed. CustomerCo perceived a large risk with SupplyCo’s solution since it is seen as a new technology compared to the conventional technology. To mitigate the perceived risk, SupplyCo was able to build trust by identifying an internal ally, serving as a “trust enabler”, making the message more reliable, as well as through accounting tools serving as “trust creators”. Empirical findings from the case study show that SupplyCo in the traditional sales process predominantly was evaluated based on CAPEX as the customers were in charge of deciding upon the tendering criteria. The CAPEX-focus was an effect of the final decision maker in the customer organization often being representatives from the procurement division. SupplyCo was not satisfied with being evaluated on CAPEX since they provided a differentiated product. Incongruence between what CustomerCo and SupplyCo perceived as value led to ignorance of some values that SupplyCo deemed important. Therefore, they realized the need to change the customer’s perception of the value. Findings from the case of CustomerCo suggest that SupplyCo was able to change the categorization of their offering to becoming a strategic, rather than a standardized supplier, which enabled them to change the category that they were evaluated in. By being

evaluated as a strategic supplier, they could start showing calculations of the total lifecycle value that they could provide to CustomerCo, including accounting for additional revenue and reduced OPEX by considering sustainability, thereby shifting the focus away from CAPEX.

The study contributes to the research field of control in interorganizational relationships in three ways. First, we contribute with a holistic understanding that it is difficult for a supplier to impose a new valuation criteria if they have not been able to build trust in the initial stages of the relationship. The valuation perspective highlights that valuation practices include both calculation and judgment (Cochoy, 2002), where we in this study find the importance of calculable values such as CAPEX, but also non-calculable values, such as reliability. Further, we find that trust does not only apply to people, but also to SupplyCo's accounting tools which serve as a powerful tool to build trust (Callon & Muniesa, 2005). Second, we contribute with findings on how sustainability can be incorporated into valuation practices to change how customers value the offering of suppliers. Although previous research has studied this (Spence & Rinaldi, 2014), we contribute by being the first study to take the supplier's perspective. Implicit considerations about sustainability can also be seen in the study by Christner & Strömsten (2022) as they quantified OPEX savings from sustainable actions, although they were not framed in that way. Third, we contribute with a deeper understanding of how a supplier can reconstruct customers' perception of value through using accounting tools. This study extends the findings of Christner & Strömsten (2022) and Mouritsen & Hald (2018) by examining how the supplier through proposing counter-accounting can introduce a new valuation criteria, such as sustainability. By understanding how value is created by the customer (e.g., Kornberger, 2017), the supplier was able to change the prevalent valuation criterias making the customer take a more holistic view considering lifecycle value rather than solely focusing on CAPEX.

The remainder of this study is structured as follows: Section 2 gives an overview of previous literature in the field of interorganizational relationships, and a description of the valuation perspective leading to the presentation of the theoretical framework which will guide our study. Section 3 describes the research methodology, followed by the empirical analysis in section 4. In section 5, the findings discussed in section 4 are contrasted with previous literature. The final section reveals conclusions, limitations as well as suggestions for future research.

2. Theoretical Development

In the following chapter, we present the theoretical development. Section 2.1 examines and problematizes existing literature within control in interorganizational relationships. The theoretical lens of valuation is explained in section 2.2, followed by the theoretical framework presented in section 2.3.

2.1. Previous literature within control in interorganizational relationships

The research within interorganizational relationships started with Hopwood (1996) stating that accounting researchers are fixated with the traditional hierarchical organization, where accounting is primarily used to mobilize vertical organizational hierarchy. He urged researchers to look at lateral relationships to explore the wider function and implications for financial decision-making and control. One such relationship that has been deeply investigated since Hopwood is the buyer-supplier relationship (e.g., Wouters, Anderson, and Wynstra, 2005; Håkansson & Lind, 2004; Mouritsen & Hald, 2018; Jack, Florez-Lopez and Ramon-Jeronimo, 2018; Neu, Rahaman and Everett, 2014). In regard to the research field of interorganizational relationships, we have understood that there are three main areas related to accounting, valuation, and control that apply to our study, which are elaborated on below.

First, the role of accounting in interorganizational relationships is to create value, which is enabled through fostering collaboration and trust; “*All relationships depend to some extent on trust*” (Tomkins, 2001). Sako (1992) defines trust as the expectation that another party will behave in a predictable and acceptable manner. He presents three different types of trust, namely *contractual trust* (one party’s expectation that the other party keeps what they promise), *competence trust* (the expectation that the other party has the necessary competencies) and *goodwill trust* (the expectation of the other party performing in the interests of the relationship). Luhmann (1979) argues trust is not limited to people, but that it can also apply to things. Tomkins (2001) studies the relationship between trust and information needs, where the starting point of all information systems is a balance between trust and accounting mechanisms. The fundamentals of the accounting tools used in a business relationship does not change, instead the author argues for the importance of using tools at different stages of a relationship. In the earlier stages of a relationship, there is a need for more information, while during later stages of the relationship as trust has been built up there is less need for information. Similarly, Van der Meer-Kooistra & Vosselman (2000) study the role of trust in different stages of an interorganizational relationship. In the initial contact phase trust is stemming from friendships, reputation, and former contractual agreements, in the contract phase contractual trust needs to be built and in the execution phase *competence trust* and *goodwill trust* are most important. However, in contrast to Tomkins (2001), Van der Meer-Kooistra & Vosselman (2000) find that information needs do not only vary depending on in which stage the relationship

is, but also depending on differences in interorganizational relationships. The authors study two interorganizational relationships involving outsourcing projects. One of the projects includes a high degree of project-related risk where the control mechanisms used included elaborated rules, procedures and supervision. In the other relationship, there was more room for initiative and creativity, whereas a more trust-based relationship was chosen with fewer formal rules. They conclude that the role of control mechanisms differs depending on the perceived project risk in an interorganizational relationship. Dekker (2004) also studies the role of formal controls, such as contractual obligations and social control, such as trust. In contrast to Van der Meer-Kooistra & Vosselman (2000), he explains that if a firm has gained a lot of trust, such as a good reputation it can lead to less emphasis on formal control systems. Kornberger, Pflueger and Mouritsen, (2017) depart from the view of having one party responsible for control (e.g., Tomkins 2001; Van der Meer-Kooistra & Vosselman 2000; Dekker, 2004) in an interorganizational relationship and finds that control in platform organizations, such as Uber and Airbnb, is decentralized. The decentralization of control in platform organizations is understood by having the value creation process externalized through users being able to audit product quality by evaluating every transaction. Within this evaluative infrastructure, the business model depends on the ability to create trust between the buyer and the supplier. There is an ongoing evaluation of qualities, such as reputation, trust, and reliability, where these qualities are quantified through ranking systems. In summary, the findings from reviewing the literature on trust in interorganizational relationships indicate that trust is important in any relationship, but that it might be of more or less importance depending on contextual factors. Van der Meer-Kooistra & Vosselman (2000) finds that the role of trust differs within different stages of an interorganizational relationship. Moreover, Tomkins (2001) found that in the earlier stages of a relationship there is a need for more information. As there are notable differences between different stages of a relationship, our study seeks to investigate which accounting tools and control mechanisms are necessary to form an interorganizational relationship in the first place.

Second, previous literature has shown that accounting tools are used as a control mechanism in interorganizational relationships to define what is seen as valuable. Accounting tools can be used to help control which values are accounted for in the interaction between firms, who in the focal and supplier firm that communicate, as well as what they communicate about (Mouritsen & Hald, 2018). To control what constitutes as valuable various accounting techniques have been used by customers with the purpose to reduce purchasing costs for example open book accounting (e.g., Seal, Berry and Cullen, 2004; Mouritsen, Hansen and Hansen, 2001; Kajüter & Kulmala, 2005; Free, 2008) and Total Cost of Ownership (“TCO”) (e.g., Ellram & Siferd, 1998; Ittner, Larcker, Nagar and Rajan, 1999; Wouters et al., 2005). Open book accounting creates an opportunity for collaborative cost reductions between firms. For these opportunities to be materialized there is a need for transparency of cost structures within interorganizational relationships (Kajüter & Kulmala, 2005). Free (2008) studied how open book accounting

was used in the retail industry, where it allowed the customer to evaluate different suppliers based on the lowest cost. TCO is concerned with investment cost (“CAPEX”) and operating costs (“OPEX”) which materialize during the ownership of the product. For instance, Ellram & Siferd (1998) states that TCO is used to understand the total costs of doing business with a supplier. They found that a wide variety of purchasing decisions were based on TCO analysis. Wouters et al. (2005) urged researchers to look beyond the narrow cost focus into considering the Total Value of Ownership (“TVO”). The TVO calculation moves beyond solely focusing on CAPEX and OPEX into considering revenue improvements that potentially can arise from a better offering to the end customer from collaborating with high-quality suppliers (e.g., Snelgrove, 2012; Christner & Strömsten, 2022). Nevertheless, limited research has been conducted assessing how sustainability can contribute to additional revenue or reduced costs (e.g., Spence & Rinaldi, 2014). Spence & Rinaldi (2014) focused on how sustainability accounting shaped forms of control in a supply chain by studying the UK grocery retailing market. They examined how senior decision-makers can embed sustainability into decision-making based on customers' demands. They found that decisions are not taken based on materiality, but rather based on what the customers value, hence leading to additional realized revenues of incorporating sustainability. The grocery chain introduced a quantitative tool leading to an initial increased cost, but as they were able to manage the supply chain more productively by applying the tool it led to long-term cost savings as stated by one manager; *“it can be more cost-effective because even if some of the elements cost you more to do the right thing environmentally [developing the quantitative tool], overall, you manage the supply chain more effectively.”* The conclusion is that embedding sustainability in decision-making is a matter of commercial priorities and translating sustainability initiatives into economic ones remains a key focus for firms. Jack et al. (2018) and Neu et al. (2014) do not address sustainability aspects as explicitly as Spence & Rinaldi (2014) in the context of interorganizational relationships, instead, they implicitly find a lack of social sustainability considerations in favor of reduced purchasing costs. The implicit findings is that sustainability only seems to be incorporated in interorganizational relationships if it corresponds to profit maximization or if the actors have pressure to incorporate it within the supply chain. Christner & Strömsten (2022) on the other hand specifies OPEX savings that could be accomplished through, for instance, power consumption, but in their case, they do not frame it as a sustainability argument, but rather as a way to reduce OPEX. They find that sustainability and OPEX savings can occur simultaneously. Following the urge of Christner & Strömsten (2022), we seek to understand how the rise of sustainability can impact the interorganizational dynamics and how suppliers might use accounting tools to their advantage. By investigating how sustainability can be incorporated into interorganizational accounting, this study intends to understand whether suppliers can impose new valuation criterias on customers.

Third, the customer has been seen as the constructor of value in an interorganizational relationship. Previous literature within the research field has often found that the buyer has power over the supplier, where the power dynamics in a buyer-supplier relationship decide how much control either party can have over the accounting used (e.g., Caglio & Ditillo, 2008; Christner & Strömsten, 2022; Jack et al, 2018; Neu et al., 2014). Jack et al. (2018) and Neu et al. (2014) study the food and fast-fashion industry respectively, where power asymmetries are present making it possible for the buyer to push down the execution risk to the end supplier through accounting practices. Jack et al. (2018) and Neu et al. (2014) show that in the case of power asymmetries the buyer can, without the interference of suppliers, decide on what is defined as value, which in their studies corresponds to economic profit. In the case of Neu et al. (2014) the suppliers were not able to change the prevalent valuation criterias as the goods were commoditized. In Jack et al. (2018) the intermediaries saw some competitive advantage to be gained in terms of quality and reliability from maintaining a longer-term relationship with suppliers. However, in both studies, it was solely the customer who decided upon what was defined as value, with no ability for the suppliers to influence. This degree of relational power the customer has can depend on contextual factors including, for instance, industry and country (Seal et al., 2004).

If the supplier does not like the way that accounting has been ascribed to them, they can strategically propose “counter-accounting” (Mouritsen & Hald, 2018). As accounting is always incomplete, it forces people to make sense of and add to it (Mouritsen and Kreiner, 2016). Mouritsen & Hald (2018) study how suppliers who were not satisfied with a supply chain scorecard imposed by the customers attempted to influence it. They did not like the scorecard, as it reduced them to standardized suppliers rather than strategic and hence proposed that the scorecard should include the qualities that they delivered in the form of technological innovation. By changing the “*language and visualization of accounting*” the present relationship between the parties could be transformed. The new valuation criterias were incorporated by the customer, but as most metrics were non-financial and non-quantifiable, they were conditioned on subjective customer evaluations. Further, as the scorecard was constructed by the customer the supplier could only propose changes, as the customer was still the one deciding which values were accounted for. The authors argue that by using accounting in a desired manner, interorganizational relationships can be transformed, developed, and enacted by the aspirations of participating firms. Similarly, to Mouritsen & Hald (2018), Christner & Strömsten (2022) find that the accounting tools used by the customer, namely the TCO calculation, reduced the supplier from a *technological partner* to a *standardized supplier*. Christner & Strömsten (2022) found that suppliers can resist customers' cost-centered calculations by introducing a new calculative device that focused on TVO calculations. This enabled them to re-frame how customers thought about the value of their products. As value was seen as something that could be calculated and measured in economic terms, it served as a conversation starter of “*how value should be measured*” with the ability to shift the conversation from cost

to value. Nevertheless, the authors emphasize that the calculations did not work in isolation, instead, there was a need for employing other strategies to be able to move beyond the TCO calculations. These included changing the structure of the traditional tendering processes, finding an internal ally to mobilize key stakeholders, as well as making the calculations credible. The key stakeholders to mobilize in the customer organization were the CEO and CFO as they had the ultimate responsibility for how purchasing decisions were made. These actors became engaged in the TVO calculations as it could directly be linked to their KPIs on improving EBITDA and growing revenues appealing to their self-interests. Consequently, Mouritsen & Hald (2018) and Christner & Strömsten (2022) conclude that suppliers can impose new evaluation criterias through accounting tools to alter the customers' construction of value. In the study of Mouritsen & Hald (2018), it is still the customer who is the ultimate constructor of value since they are responsible for the accounting tool used, whereas in Christner & Strömsten (2022) the supplier can impose a new accounting tool to change how the customer constructs value. Additionally, the supply chain scorecard in Mouritsen & Hald (2018) incorporates non-financial and non-quantifiable values, whereas in Christner & Strömsten (2022) the TVO only incorporates financial values in the form of revenues and costs. These two studies are pioneers in studying how a supplier can influence the prevalent valuation criteria that have been assigned by the customer. To our knowledge, the only study to date that has looked from the supplier's perspective on how suppliers can alter the accounting used in an interorganizational context is Christner & Strömsten (2022), whilst Mouritsen & Hald (2018) study the supplier from a customer perspective. We follow the urge of Christner & Strömsten (2022) for additional research in this field to examine how suppliers in another industry can use accounting tools to influence customers. Additional studies from this perspective are valuable since they can provide suppliers with insights into how they through accounting can influence the purchasing decision of buyers as the customer has usually been seen as the constructor of value. For suppliers who have difficulties in for instance demonstrating the value of their technology or sustainable products, these insights can become valuable.

To conclude, the review of previous literature within control in interorganizational relationships has revealed that trust plays an important role, accounting can be used to define what is of value and the customer has often been seen as the constructor of value. This study aims to gain a deeper understanding of how suppliers can use accounting tools to reconstruct how customers think about the value of sustainable technologies. Hence, it will become relevant to answer the previously stated research question:

How do suppliers use accounting tools to reconstruct customers' perceptions of value?

In the following section, we will introduce the theoretical perspective, valuation, that will guide our analysis.

2.2. Construction of value

Interorganizational relationships are concerned with companies throughout the value chain collaborating with the aim of creating value (e.g., Walter, Ritter and Gemünden, 2001). We are therefore interested in understanding how value is constructed and how valuation practices can be used in different ways depending on the recipient, which will be elaborated upon in the following section. We propose that if a supplier can better understand how value is constructed, they can use accounting tools to influence the buyer-supplier relationship.

2.2.1. The Concept of Valuation

What is value? Although, value is a term that strategists often use, the notion of value has been assumed rather than analyzed (Kornberger, 2017). Valuation in strategy has received limited attention, with only a few studies that explicitly discuss the impact that valuation has on strategy (e.g., Porter & Kramer, 2011; Barney 1991; Prahalad & Ramaswamy, 2004). Porter & Kramer (2011) were pioneers of the concept of shared value. Shared value is defined as the practices that create competitiveness for a company, but at the same time leads to social and environmental benefits. Barney (1991) introduced the resource-based view (RBV), describing how firms can achieve a sustainable competitive advantage based on their resources and capabilities. They argue that a firm's ability to create or acquire these resources will impact its competitiveness. Prahalad & Ramaswamy (2004), presents the concept of co-creation of value, which means that companies are a part of an ecosystem, with customers, intermediaries, suppliers, and other actors who all engage in the creation of value. Value is by no means an objective concept, but rather subjective where individuals perceive the value of the same product or service differently as elaborated by Priem (2007, p224):

“The benefit experienced through the same product or service is different for each consumer, and each consumer’s human capital determines how much value he or she actually experiences”

The concepts of shared value, RBV and co-creation of value either refer to value as financial profit or as a subjective preference that is created in the minds of the customer. With inspiration from Dewey (1939), Kornberger (2017) instead argues that *“value is neither understood as the property of an object nor as a subjective preference; rather, values are constituted through valuation practices”*. He argues that the use of different valuation techniques influences the attached value of goods, which implies that suppliers constantly need to evaluate where and how value is created. Orlikowski & Scott (2014) and Lamont (2012) also agree with Kornberger (2017) arguing that valuation is constantly ongoing through the everyday activities within organizations.

Valuation as an ongoing process is also shown by Cochoy (2008) studying how suppliers can influence customers purchasing decisions in a supermarket context. First, when

entering the store customers often bring a shopping list that serves as their own “qualculation” tool, which considers the interplay of different individuals’ perceptions of value. While in the store, suppliers impose new valuation tools on the customer, where something as simple as a shopping cart can modify the way consumers think about value. Instead of focusing on a budgetary constraint, consumers re-frame the way they value their groceries into a volumetric one. Their influence on the customer is not limited to the shopping cart, but they also use valuation techniques such as branding, placement, and special offers, through which they can influence the customer’s purchasing decision if the customer views the offerings as valuable. If suppliers can reconstruct value this will have implications on what the customer considers when choosing a product.

Callon & Muniesa (2005) examined how calculations of a good determine its value. An individual's ability to calculate is not a “*purely human mechanical and mental competence; it is distributed among human actors and material devices*”. This moves away from the standard notion that it is humans alone that make up for the agency of calculation. They argue that the calculation of value is understood by the people who are engaged, where certain actors have more or less influence over the calculation, as well as the power of the accounting tools used. Callon and Law (2005) found that not all goods can or should be calculated. They discussed the concept of qualculation, developed by Cochoy (2002), which is argued to include both calculation and judgment. They state that it takes effort to include calculation and judgment in valuation, however, they also state that it takes effort to consider the opposite, namely “nonqualculability”. The concept of nonqualculability works to refuse the usage of relating, listing, transforming and ranking in valuation practices. The power of qualculation depends on its ability to put numbers in relation to others, while the power of nonqualculation depends on the degree of resistance to qualculation. Nonqualculation can for instance be powerful in instances where qualculation does not produce the preferred valuation.

2.2.2. The Values of Strategy: Valuation Practices, Rivalry and Strategic Agency

To understand how customers perceive value, there is a need to understand how valuation practices are constructed. Kornberger (2017) developed a conceptual framework arguing that to understand valuation practices four interrelated mechanisms are present. First, “*who is engaged in valuation practices*”, implies that different intermediaries (e.g., investment bankers, art critics) and non-human actors (e.g., algorithms, digital intermediaries) play an important role in the valuation practices. Similarly, Lamont (2012) argues that establishing value often requires negotiation of who is seen as a legitimate judge. Second, “*how are goods deconstructed to make them comparable*”, builds on the concept of commensuration which means that a common metric is introduced to compare disparate things. In this process, individual qualities are reduced to a common metric that allows for comparison (e.g., Espeland & Stevens, 1998; Kornberger, 2017). Third, “*how are they reassembled into new orders of worth*”, means that objects are re-organized to impose new relations through, for instance, rankings in

league tables marking relations between objects. Chamberlain (1946) coined the expression of “*singularization*”, which states that properties of a good are presented in such a way that it can be compared to other products. The role of *singularization* is highlighted by Cochoy (2002), stating that in a supermarket the goods are only compared with the goods on the shelves drawing a boundary towards other goods not presented. Fourth, “*how are valuations visualized to ensure mobility and assure impact?*”, implies that the power of valuation practices is largely affected by aesthetic dimensions, such as how valuation practices are organized into diagrams, lists or other visualizations. There is no sequential order of the four mechanisms, as they are constantly evolving. The valuation practices used are important for determining how rivalry is structured. Kornberger (2017) found rivalry to be dependent upon how a good is compared and evaluated as he elaborates:

“Depending on whether a smartphone is evaluated as a miniature mobile office, a social networking device, or a gaming console, it will “perform” differently and end up in different categories, appealing to different market segments. Since competing valuations occur simultaneously, a product’s value is fundamentally unstable.”

Further, he highlights how values are always reconstructed by novel valuation practices. An actor’s capacity to influence a criteria of evaluation can thus show her strategic power. He mentions three ways of influencing the process of valuation including integrating valuation practice in internal strategy, altering behavior to improve positioning in ranking and imposing your own valuation criteria to change the standard.

2.3. Theoretical Framework

We propose a theoretical framework that examines how suppliers aim to influence customers' use of valuation practices in interorganizational relationships, by applying the framework presented by Kornberger (2017). Further, we have made some modifications to make it more applicable to our research setting. By applying the theoretical framework to the empirics, we aim to address the previously stated research question:

How do suppliers use accounting tools to reconstruct customers’ perceptions of value?

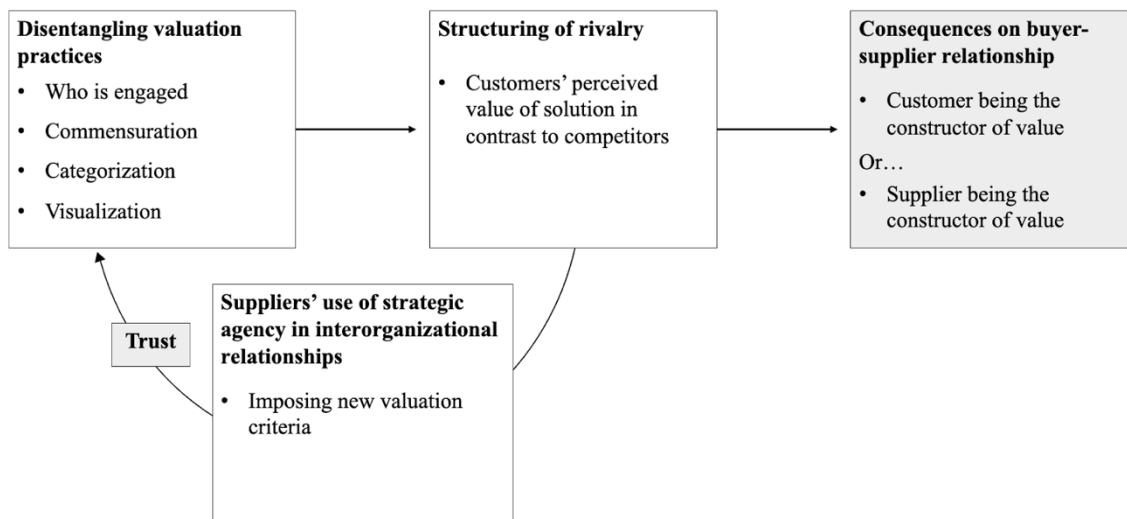


Figure 1. Theoretical framework

The expected relationships between the parameters are presented in Figure 1 where we aim to understand how suppliers might reconstruct what values the customers consider. *Disentangling valuation practices* refer to the four mechanisms of Kornberger (2017), understanding how value is constructed. We make two modifications to his original definitions of the mechanisms. First, we propose that the criterion “*who is engaged in valuation*” is concerned with internal stakeholders in the customer organization, rather than external intermediaries. As valuation is a constantly ongoing practice within organizations (e.g., Orlikowski and Scott, 2014; Kornberger, 2017; Lamont, 2012) we theorize that the construction of value will be influenced by different individuals who perceive value in different ways. Goretzki, Mack, Messner and Weber (2018) and Burchell, Clubb, Hopwood, Hughes and Nahapiet (1980) highlight how accounting can be influenced by actors trying to emphasize what they perceive to be valuable. Goretzki et al. (2018) analyze how different actors in an organization mobilize various accounting numbers to influence the other party about claims on performance. He finds that accounting numbers per se are not persuasive, but that persuasiveness is achieved through interactive alignments between different actors with potentially unaligned interests. In line with Kornberger (2017), this indicates that by identifying who is doing the valuing an actor can apply accounting tools to persuade people. Further, Burchell et al., (1980) state that what is accounted for will impact the perception of what organizational actors consider important. Hence, accounting is no longer seen as calculations, but it is also seen to be influential from an economic and social standpoint by a variety of different actors trying to influence accounting. Second, we adapt Kornberger (2017)’s definition of “*categorization*” in a slightly different way, where we imagine it to be the customers’ perception of the solutions compared to each other, rather than a third-party ranking, in line with the concept of “*singularization*” (Chamberlain, 1946). *Structuring of rivalry* refers to how the customer perceives the value of the solution proposed by the supplier in contrast to other suppliers. If the supplier is not content with how rivalry is structured,

they can attempt to impose new valuation criterias through strategic agency. *Strategic agency* concerns an actor's ability to influence valuation practices. However, for suppliers to be able to impose a new valuation criteria in the first-place *trust* must be built. As Tomkins (2001) suggested, the importance of building trust through information is most important during the initial stages of an interorganizational relationship and Van der Meer-Kooistra & Vosselman (2000) found that the role of trust in the initial stages stems from previous interactions, for instance, reputation. *Consequences on buyer-supplier relationships* involve either the supplier or the customer being the constructor of value as a consequence of the prevalent valuation practices. If the supplier is able to use strategic agency, the buyer-supplier relationship will be pivoted to their advantage, otherwise, they will be undermined by the customer being the constructor of value. In other words, this can be seen as a way for suppliers to utilize the concept of "counter-accounting" as described by Mouritsen & Hald (2018) if they do not like the way customers currently use accounting to determine value.

3. Research Methodology

The following chapter describes the research methodology. Section 3.1 introduces the research design and motivates the selection of the research setting. Section 3.2 elaborates on the empirical material and how it was gathered. Section 3.3 presents the empirical analysis followed by section 3.4 discussing the quality of the research data.

3.1. Research Design

3.1.1. Empirical Method

The purpose of this research paper is to find out how SupplyCo can use accounting tools to reconstruct the perception of the value of its technology. Our research question involves understanding what customers consider when making a purchasing decision. The question of *how* in our study is hard to quantify as the data points are not quantifiable in number terms (e.g., Dyer, Wilkins and Eisenhardt, 1991). Hence, we conduct a qualitative case study looking at an interorganizational relationship between the case company (“SupplyCo”) and one of their customers (“CustomerCo”) with the aim to examine how they were able to reconstruct the customer’s perception of value. We conducted a single case study which has commonly been used as a methodology in previous research within interorganizational relationships (e.g., Christner & Strömsten, 2022; Mouritsen & Hald, 2018; Jack et al., 2018; Neu et al., 2014). Siggelkow (2007) acknowledges that a single case can be a powerful example, providing conceptual insight into a particular phenomenon. Further, as pointed out by Otley & Berry (1998) the results of case studies can likely contribute to both inductive and deductive research and are in principle replicable and reliable. Eisenhardt (1989) states that case study research has important strengths such as novelty, testability, and empirical validity.

3.1.2. Selection of Research Setting

The research in this study was conducted at the time of the public announcement of a collaboration agreement between SupplyCo and CustomerCo. First, we will generally elaborate on how SupplyCo’s customers typically make sense of value. Further, we will investigate more specifically how SupplyCo was able to reconstruct how CustomerCo perceived value. The case was chosen to study motivated by the following factors:

First, as the majority of previous research within the field focuses on the buyer being the constructor of value (Wouters et al., 2005; Ittner et al., 1999; Mouritsen et al., 2001; Seal et al., 2004) this case was deemed appropriate as it provides evidence of how a supplier was able to strategically propose “counter-accounting” (Mouritsen & Hald, 2018) to reconstruct value in a way that was beneficial for SupplyCo. Additionally, the theoretical perspective of valuation is suitable in our research setting as it involves different people making sense of value in different ways. By understanding how value is constructed,

suppliers can better understand how they can reconstruct the valuation practices to their advantage.

Second, sustainability has been scarcely researched within the field of interorganizational relationships. Rather, a lack of sustainability has been identified to the advantage of economic profit (e.g., Jack et al., 2018; Neu et al., 2014). SupplyCo is a suitable company to study since they emphasize how energy efficiency can be quantified to be incorporated in accounting tools. If SupplyCo is able to use accounting tools to showcase the OPEX savings they can help the customers achieve through sustainability, it will make it easier for customers to consider this in their valuation practices. The quantification of the energy savings is in line with what is emphasized by Spence & Rinaldi (2014) who highlights that sustainability must be quantified in order to be embedded in valuation practices.

Further, some practical details facilitated the selection of the case company including the case company being located in Sweden and the relationship being mediated by our supervisor. Hence, access to all levels in the case company and the customer organization was facilitated.

3.2. Empirical Material

3.2.1. Primary Material

This study is primarily based on semi-structured interviews with a broad set of stakeholders including both participants from the customer and supplier organization. By conducting semi-structured interviews, it allowed us to adapt the questions based on the interviewees' responses (Bryman & Bell, 2015). We conducted interviews from several divisions in the supplier organization, including among others the sales organizations in Sweden, France and Spain, the service unit, the chief sustainability officer, a business controller, and top management within the BU of focus. The business unit concerned in this study is both located in Sweden and France, hence we wanted to talk to individuals at both offices to understand how they are organized. The first part of the empirical collection involved interviews with the case company and was based on questions following general research themes to understand the perceived challenges in explaining the value to customers. Additionally, the interviews involved questions on what a typical sales process looks like, as well as the case company's perspective on why customers are reluctant to buy their solutions over the conventional technology. These initial interviews steered the direction toward a suitable customer organization to study. To understand more about the customer organization in this study, questions were asked about SupplyCo's perception of the collaboration agreement, which accounting tools were used, as well as key decision-makers in the customer organization. The Iberian sales organization within SupplyCo was contacted as CustomerCo is located in Spain. Their perspectives were valuable to understand the background of how the collaboration agreement was initiated and how they from a local perspective were engaged in the sales

process. Further, we conducted one interview with two interviewees from the customer organization to understand their perspective on the collaboration. In this study, a total of 21 interviews, with 18 unique interview prospects were conducted over a period of four months, each lasting between 30-90 minutes (see Appendix A). Interviews lasted on average 60 min and were held both in Swedish and English, depending on the preferred language of the interviewee. Hence, some quotes in the paper have been translated from Swedish to English. Most of the interviews were recorded and transcribed, with permission from the interviewees. To minimize misinterpretations from informal or non-recorded interviews we noted down initial insights after each of these interviews. After 21 interviews with employees from SupplyCo we started observing theoretical saturation, meaning interviewees started to repeat the observations of prior interviewees (Eisenhardt, 1989). However, additional access to the customer organization was not granted, and as we only conducted one interview, we did not reach theoretical saturation from this perspective. The selection of interviewees was a combination of convenience sampling and snowball sampling as proposed by Bryman & Bell (2011). Our study started with convenience sampling implying respondents were chosen based on the accessibility. Following initial access, snowball sampling was applied, where the identification of new interview prospects was based on previous interviews.

Interviews were conducted online, through teams, and on-site at the case company's headquarters in Sweden. Further, weekly meetings, in total 12, were conducted with the responsible senior advisor from the case company discussing the company and product offerings. To further deepen our knowledge about the sales process with the customer we arranged weekly interviews, in total five, with the person responsible for this customer relationship during October and November. We conducted three major site visits to the case company's headquarters (see Appendix B). The first occasion involved an introduction to the company as well as a coordination meeting to decide upon the purpose of the collaboration. The second occasion involved a round-tour of the factory, interviews face-to-face as well as informal conversations during lunch and coffee breaks. During our third visit, we listened in on an internal presentation of the energy division's Q3 results, presented and discussed our findings to date with feedback from the Head of the business unit and other important stakeholders, as well as informal conversations during breakfast, lunch, coffee, and dinner. Further, we observed three half-day online workshops focusing on the case company's new sales initiative aiming at educating sales personnel about how to communicate their value proposition. One of the occasions was specifically dedicated to refineries and focused on the customer concerned in this thesis but anonymized for the participants.

3.2.2. Secondary Material

This study further makes use of an extensive collection of secondary data, both internal and external material. Internal material includes videos and readable material on the new sales initiative, internal presentation materials and reports presented to different

stakeholders in prospective customer organizations. Additionally, we received two excel models that quantified the economic and carbon emission savings from SupplyCo's solution being more sustainable in contrast to the conventional technology. We also received the formal contract of the collaboration agreement concerned in this study. External material has been collected from the case company website mainly regarding product features, reference projects, press releases as well as investor presentations. Altogether, the secondary material provided insight into what material people internally used in the sales process, as well as information concerning what SupplyCo externally communicates in regard to how they portray their company and the collaboration agreement.

3.3. Empirical Analysis

To answer the research question, this study conducted abductive research also called "systematic combining" as suggested by Dubois (2002). A process described as a mixture between deductive research and inductive research where the framework is constantly modified depending on new findings from theory, empirics and analysis changing the initial research question (e.g., Ahrens & Chapman, 2006; Dubois 2002, 2014). The theoretical lens for empirical analysis was based on the concept of method and domain theory (Lukka & Vinnari, 2014). The method theory initially focused on the perspective of framing (e.g., Goffman, 1974). The framing perspective could help us understand how a supplier can use accounting tools as framing devices, with the ultimate aim of changing the interorganizational relationship to the supplier's advantage. Through applying the framing perspective, we gained an understanding of the complexity of interorganizational relationships and how it is highly influenced by the involved actors. We did not find a suitable framework within the framing perspective that explained what we saw in our empirical material. Through iterations, we came to understand that the perspective of valuation could help us understand how suppliers through influencing valuation practices could reconstruct customers' perception of value. From the knowledge accumulated by investigating the framing perspective, we acknowledge that framing is having an impact on the valuation practices considered, where valuation is framed differently to various stakeholders. The conceptual framework finally decided upon was Kornberger's (2017) work on values of strategy as it could be used to help explain what we saw in our empirical findings, as well as be integrated with the theories of interorganizational relationships.

3.4. Research Quality

Lincoln and Guba (1985) suggested that qualitative research should not have the same conventional assessment criteria of validity and reliability which are commonly used in quantitative research to determine the quality of data. Instead, they introduced four criterias for trustworthiness; credibility, transferability, dependability and confirmability. Lukka & Modell (2010) suggests interpretive research can be validated through the

concepts of authenticity (trustworthiness) and plausibility which we will build upon to assess the research quality of this paper as this study is interpretive. Our study is seen as interpretive since the research setting is dealing with people and how they attach meaning to reality. As highlighted by Newman (2000) the interpretive approach is the systematic analysis of how people in a natural setting “*create and maintain their social worlds*”.

Lukka & Modell (2010) define validation as simultaneously making sure the research findings are authentic and that the explanations are deemed possible. Authenticity can be reached by providing the reader with “*rich descriptions*” to ensure the reader that sufficient information is gathered. Authenticity in our study is achieved by providing quotations to show different interviewees’ perspectives. The quotations are presented in the empirics to ensure that the essential findings are not impacted by the authors’ interpretation but are communicated in a credible way (Lukka & Modell, 2010). As we have engaged in informal meetings and sales workshops, vivid descriptions of the empirics enable the reader to understand the actual research setting, providing authenticity (Scapens, 2004). Yin (2009) highlights that case studies are prone to bias, which we have aimed to reduce through constant reiterations of the evidence, as well as having transcripts analyzed individually by both authors before meeting together to compare (Bryman & Bell, 2011). To avoid biases in the narrative this study has aimed to, to the greatest extent possible, generate information from different roles with a variety of hierarchical positions in the organizations. As most of the interviews were conducted with the case company the answers might be somewhat skewed as more information has been gathered from them. Plausibility on the other hand refers to the credibility of the results that our findings “*make sense*” and that we reason about these in a plausible way. We have presented our findings to the case company’s representatives for the sake of respondent validation (Lincoln & Guba, 1985), to ensure the credibility of the results and to check the accuracy in relation to their experiences. They deemed our interpretations as both plausible and insightful.

4. Empirical Analysis

The following chapter will present the empirical analysis. First, in section 4.1, background information about SupplyCo and CustomerCo is presented, as well as information about the technology. Thereafter, in section 4.2, SupplyCo's traditional sales process is presented, followed by section 4.3, which describes how SupplyCo managed to reconstruct value in the case of CustomerCo.

4.1. Background & Context

This case study focuses on SupplyCo, a global provider of products in the areas of heat transfer, centrifugal separation, and fluid handling. The need to heat, transport and separate arises in many industries and SupplyCo can help a majority of them. End customers are reached through three business divisions: Energy, Food & Water and Marine. The case company provides more than 100 products and has a turnover of 41bn SEK.

The focus of this thesis is on the energy division, which is divided into four business units, where we specifically will focus on the division supplying heat exchangers used in heavy industry applications, adapted for high temperatures and pressures, hereafter referred to as "BU". Put simply, a heat exchanger is a device that facilitates the process of heat exchange between two fluids that are at different temperatures. SupplyCo supplies seven types of heat exchangers within BU, which differ in competitive landscape and areas of application. SupplyCo invented a new type of heat exchanger in 1986, hereafter called "new technology". Still, many clients think it is a new innovation compared to the main competitive solution, hereafter called "conventional technology" developed around 150 years ago. The conventional technology is often chosen by customers as it is an established technology, easy to serve as well as has a known procedure of maintenance. BU derives 30% of its sales from refineries, which will be the industry we will focus on in this thesis. SupplyCo has been delivering their technology to refineries since 1994. The purpose of refineries is to extract a product from raw material, which involves several processes. Depending on the complexity of the refinery, there might be up to 20 different processes, which involve splitting the crude oil into different products, maximizing the yield of high-value products as well as removing impurities. All processes require energy, in the forms of fuel, steam and electricity. Depending on how the processes are designed, and what equipment is used there can be more or less need of energy. SupplyCo can help customers optimize their processes through knowledge about how the processes are structured, something that will be elaborated upon below. Process optimization can easily be described as the efforts of designing the process in a way for the heat exchanger to perform optimally.

This thesis focuses on a three-year collaboration agreement between SupplyCo and CustomerCo. The customer is a global company operating within the oil & gas, chemicals, and power value chain, with revenues of 24bn EUR. CustomerCo has recently launched a strategic plan with specific goals on reduction of emissions, with the ultimate goal to reach net zero by 2050. In the next section empirical findings regarding challenges in SupplyCo's traditional sales process will be presented, followed by the case of CustomerCo where they managed to overcome these challenges.

4.2. Customers are the constructors of value with a narrow cost-focus

4.2.1. Competing values among stakeholders in the customer organization

“Our products are fantastic; we live it and we know it. Sometimes we forget that it is only products used in someone else's processes, where we forget what is the situation of our customers” - Business Controller

As illustrated by the quote above, SupplyCo has put a great emphasis on values that they view as important, such as product features, forgetting that the customers might have other values that they prioritize. There are many different people within a customer organization that make sense of value in different ways, where the most important stakeholders are elaborated below.

One of the first individuals that SupplyCo engages with are the process engineers, which are the people responsible for the design of the refinery's processes. These individuals typically value the technical aspects of SupplyCo's solution. For instance, they are interested in how much heat recovery that can be saved, how much reduction of fouling it can lead to, how it can increase uptime and increased capacity in relation to conventional technology. Fouling can easily be explained as the asset no longer being able to perform its function in the way it is expected to due to clogging. However, process engineers also see a large risk in opting for the new technology since they will be held accountable if the equipment is not working properly and as elaborated by the Senior Refinery Specialist *“their head will roll”*. For example, the equipment might not work properly if the specifications of the equipment are not followed during installation or if the equipment is not suited for the process. The refinery industry is traditional and slow-moving, therefore taking risks is generally not encouraged as stated by Regional Marketing and Sales Manager; *“You don't get fired by keeping the conventional technology”*, which points to the ease of continuing using the conventional technology. Although many process engineers see the value of SupplyCo's solutions, they might perceive the risk as being too high. At the same time, other process engineers take the risk of driving these efforts as it might be beneficial for their careers as they might be recognized by their superiors. For the project to move forward the process engineer must be convinced as expressed by the Head of Global Sales; *“The process engineer has a lot*

of prestige and needs to be convinced for us to move forward. If they are not convinced, then the others will not take the risk.”

Another important stakeholder engaged in the purchasing process is factory managers. Our interviews describe that the responsibility of factory managers is to ensure that refineries are operating efficiently, without having stops in production. Changing to the new technology can therefore be perceived as a large risk if they do not have any prior experience of using it. They are aware of the significant costs for downtime as is evident from the following quote by the Sales Manager; *“it can cost up to 0.5m EUR per day to stay still - corresponding to their current heat exchanger”*.

SupplyCo has identified another important individual that might be engaged in the purchasing process, named thought-leaders. A thought-leader is described as a person with personal KPIs to improve efficiency in the plant and can thus have the role of an energy, excellence or sustainability manager. By approaching this person, SupplyCo has been able to drive a case in South Korea as well as the case of CustomerCo. Depending on the degree of influence the thought-leader in an organization has, they might have varying abilities to influence the decision. Consequently, sometimes it is not sufficient to involve thought-leaders as elaborated by BU Head of Sales;

“We have a great dialogue with the sustainability manager of EnergyCo. The problem in their organization is that the sustainability manager says that we must convince the factory manager”

Process engineers, factory managers and potentially thought-leaders are typically the people that are engaged in driving the investment case. Other people involved in determining value are not responsible for driving the investment case, however, they can potentially be no-sayers. For instance, maintenance could potentially be a no-sayer as elaborated by BU Head of Sales; *“Maintenance can say no, but they cannot say yes. They are not decision-makers per se”*. The maintenance personnel have a long experience serving the conventional technology as it has been the standard solution used in the refinery industry. Our interviewees have revealed that maintenance personnel might feel a reluctance to use new technologies which are not familiar to them. As observed by the Sales Manager, the maintenance personnel mostly care about the technology being easy to serve; *“When it comes to the new technology, they do not know how to do it, it is special and deviates from the conventional technology”*.

Our interviews highlight that the final decision maker, often engaged in the last stage of a sales process, is procurement. Prior to a customer decision, procurement often has the decision-making authority which is based upon alternatives provided by for instance the process engineer. Our interviewees acknowledge that procurement often has KPIs on reducing CAPEX, hence being incentivized to select the solution with the lowest cost.

The empirics show there are different individuals engaged in constructing value in the customer organization. Process engineers, factory managers and potentially thought-leaders often drive the potential investment case, whilst procurement often is the final decision maker. Maintenance is an important stakeholder to mobilize as they could be a potential no-sayer. How the individuals construct value mainly relates to their KPIs and responsibilities. Further, we find that the values that SupplyCo pushes for in terms of their superior product are not found equally valuable for the different stakeholders within CustomerCo. The decision-making is based on criterias that the customer deems important and as procurement is often the final decision maker it often corresponds to CAPEX. As it is the customers' value that is the basis for decision-making, this indicates that the customer is seen as the constructor of value in line with the observations made by previous literature (e.g., Jack et al., 2018; Neu et al., 2014; Christner & Strömsten, 2022). Kornberger (2017) elaborates that in order to understand how value is constructed there is a need to understand who is actually doing the valuing. Lamont (2012) points out it is important to understand who is seen as a legitimate judge in order to understand what is seen as value, which in this case is procurement. However, as elaborated above other stakeholders are important to consider before procurement receives the proposal on their table. The narrow CAPEX-focus of procurement might illuminate values that SupplyCo tries to emphasize in their sales argument towards the customer which will be elaborated on in the next section.

4.2.2. Reduction of qualities into comparable quantities

The traditional sales process has largely been centered around the customers' procurement division sending out a request for quotation ("RFQ"). Procurement is as previously elaborated incentivized to choose the technology with the lowest CAPEX, which often is the conventional technology. The CAPEX-focused nature of procurement divisions is thus to the disadvantage for SupplyCo, who is positioned as a premium supplier. Consequently, SupplyCo has understood the need for a conversation beyond the narrow CAPEX-focus, as they consider that the customer does not account for all the additional values that they provide. One feature SupplyCo has been advocating for a long time is the value-added of their more sustainable solution. However, in the beginning, they talked about the sustainability benefits in indistinct ways without a way of quantifying it, as the Senior Refinery Specialist explained:

"We used to communicate that we were more energy efficient than our competitors ... but we could not quantify how much more efficient"

The Senior Refinery Specialist concluded that their sales argument was not very convincing as they were not able to quantify the energy savings. Consequently, they launched a campaign with the purpose to start quantifying the energy savings potential of their solutions compared to the conventional technology. To demonstrate the value added to customers, SupplyCo used spreadsheets with the purpose to compare their solution to

the conventional technology. The spreadsheets quantified the value of adapting their more sustainable technology both on economic aspects as well as carbon emissions. Further, they suggest incorporation of Co2 taxes in the spreadsheets, as SupplyCo believes there is a high probability of regulators requiring this in a couple of years. However, many customers are reluctant to incorporate presumed values into the spreadsheets. Moreover, SupplyCo wants to emphasize that by optimizing customer processes they can further help customers reduce OPEX by mitigating fouling and improve capacity and yield, as commented by the Senior Refinery Specialist:

“The great economic saving is not the heat exchanger, but optimization of the process”

For the economic and environmental savings to materialize the process must be adapted to the new technology, rather than the conventional technology. The interviews indicate that almost all customers have different processes, making it difficult for SupplyCo to quantify the savings to a customer before looking into the process. Prior to this they can only provide rough estimates. This leads to a need for a new calculation for each customer, which requires a broad competence about the refinery processes. Since most salespeople within SupplyCo are generalists, they mainly have knowledge about the product and not the processes. This makes it difficult for them to use spreadsheets to quantify the OPEX savings the customers can achieve through energy savings and mitigated fouling, as well as increased revenue through capacity and yield improvements. The lack of competence of the processes creates an internal resistance among the generalists to use accounting models making it difficult for SupplyCo to move beyond the narrow CAPEX-focus. Therefore, SupplyCo has tried to institutionalize their sales training to educate salespeople in how to sell process optimization solutions, hereafter referred to as “the new sales initiative”. This initiative trains people on which arguments to put forward to different people, as well as training on how to use the spreadsheets.

To be able to compare solutions buyers reduce “qualities to quantities” as elaborated by Kornberger (2017) eliminating some aspects of value that the constructor does not deem as necessary. The empirics show that the traditional sales process is CAPEX-focused, caused by customers’ procurement often being the final decision-maker. The CAPEX-focus ignores the value of the qualities that SupplyCo tries to communicate leading to them being perceived as a standardized supplier. Additionally, empirics show an internal resistance of salespeople to use the models making it even more difficult for the customers to understand the value added. This indicates that Cochoy (2002)’s concept of “qualcalculation” is disregarded in favor of calculation. Consequently, SupplyCo has realized that they need to find ways to showcase their value add by using spreadsheets so that customers appreciate features they offer such as sustainability. In the following section, we will elaborate on how SupplyCo’s solution is categorized in relation to competitors.

4.2.3. Categorized in the competitive landscape with the conventional technology

“No matter how much money we can save for the refinery, if they perceive the risk to implement the project too high the project will never be implemented”

As explained by the Senior Refinery Specialist in an internal video from the new sales initiative the perceived risk can be a gateway for a customer to choose their technology. Since the new technology and the conventional technology often are used in the same applications, SupplyCo’s solution is categorized together, and thus compared to the conventional technology. As customers usually perceive the conventional technology as less risky, they often choose this solution, as explained by the Senior Refinery Specialist:

“The essence of the problem to choose SupplyCo over conventional technology is the fear of trying something new. Our customers are afraid of the technical part, what if the heat exchanger does not work? Will our production stay still? How much production will I lose per hour?”

Customers are concerned with the potential of their production standing still since downtime is costly. They believe that they minimize the risk if they are using the conventional technology as they have a long experience of using it. Further some customers have had negative experiences from using the new technology, with leakages from poor installations. However, the risk is also present in the customers’ current solution, as elaborated by BU Head of Sales:

“I understand the risk from a customer perspective, which is their top one decision factor, but it is unlikely. It is also happening in their current equipment. You know what you have, but not what you get, which is a psychological factor.”

To mitigate the perceived risk, it is important to show reliability and trust as emphasized by the Senior Refinery Specialist; *“Most of my time with the customer is spent as a psychologist and building trust”*. To further mitigate the risk SupplyCo suggests two safeguards: first, if space permits, they can eliminate the technical risk by keeping their old conventional technology as a back-up, hence only taking a commercial risk. Second, in case of a break down SupplyCo stores emergency inventory of the new technology. Hence, being able to replace a broken heat exchanger within two days, as the Senior Refinery Specialist highlights is *“a speed that no conventional technology supplier is able to match”*.

The findings point to categorization with the conventional technology is not favorable for SupplyCo, as customers perceive them to have a higher risk versus the conventional technology. However, the conventional technology is also breaking down, but as the customers’ have known ways of repairing it individuals are to a greater extent confident with it. The empirical evidence from SupplyCo’s traditional sales process highlights the need to build trust in the technology in order for the customers to consider them while being compared to the conventional technology. As will be elaborated on below

SupplyCo tries to convey their message through visualizing the value-added to the customers.

4.2.4. Visualizations is not sufficient to reconstruct value

To communicate the values that SupplyCo adds they use visualizations. Visualizations are beneficial to drive change as they can facilitate translation of the message they are trying to convey as explained by the Chief Sustainability Officer; *“It should be easy for an external person to understand in a matter of seconds what the visualization aims to portray, then we know our visualization is clear enough.”*

In order to show reliability in a traditional sales process SupplyCo starts by talking about their extensive experience with refineries dating back to 1994. Further, they emphasize that they have sold 2,600 of a specific heat exchanger to refineries to almost all applications of the process with emphasis added on a majority of the heat exchangers being sold to the most critical processes. Another way to handle the skepticism of SupplyCo’s solutions is through the presentation of reference projects. To build legitimacy SupplyCo often presents reference projects and accompanies the prospective customer to a customer already having implemented the solution to show how it works.

Further, to visualize the financial values of their solutions they use spreadsheets to show the payback period in monetary terms, as well as carbon emissions. Visualizations can make it easier for their customers to understand the values that they want to communicate as emphasized by the Chief Sustainability Officer *“The new sales initiative is a great example of how we through visualizations can simplify the customer’s decision-making.”*

The visualizations are often appreciated by customers, as it facilitates translation of the values SupplyCo wants to convey, as suggested by Kornberger (2017). However, if they have not been successful in influencing the other mechanisms of value construction, visualizations might not be sufficient to convince the customers about reconstructing the values they perceive.

4.2.5. Structuring of rivalry

Based on the traditional valuation practices we find that the structure of rivalry is to the advantage of conventional technology suppliers. In the empirics, it is evident that different internal stakeholders in the customer organization view value differently. The diverging views originate from their KPIs, roles and responsibilities and how they envision themselves to be impacted by a potential implementation. Further, we find that stakeholders within the customer organization have different time perspectives with procurement being more short-term oriented focusing on CAPEX, whilst factory managers are more long-term focused wishing to operate for several years without interference in production. The final decision-maker in the customer organization is often procurement. For customers to be able to compare solutions, they reduce qualities into

quantities which flattens the criteria that a good is evaluated based on (Kornberger, 2017). This flattening eliminates certain values that SupplyCo would like them to incorporate in their valuation, similar to what the suppliers in the studies of Mouritsen & Hald (2018) and Christner & Strömsten (2022) experience. To counteract this exclusion of values, SupplyCo uses visualization, but if those values are not accounted for by the customer, they will not be incorporated into the value construction process. Next, we will analyze how SupplyCo, through strategic agency, was able to influence one of their customers, CustomerCo, into purchasing their technology.

4.3. The case of CustomerCo: Mobilizing internal allies to influence how value is constructed

From the traditional sales process, it is evident that the values SupplyCo are communicating are not accounted for by the customers. Therefore, SupplyCo realized that they needed to find a way to reconstruct how the customer perceives value. In this section, we will elaborate on how they were able to influence the valuation practices of CustomerCo. CustomerCo is an interesting case to study, as they historically used to base their investment decision on the lowest price. Consequently, as SupplyCo did not offer the lowest price they were seldom chosen as supplier. Below we will elaborate upon: how did SupplyCo change what the customer perceives as value to incorporate the value of sustainability?

The Excellence Manager at CustomerCo was familiar with SupplyCo as he had earlier attended a presentation by SupplyCo, where he expressed that he was “*impressed by the technologies*”. The Excellence Manager’s main responsibility area includes finding opportunities to drive change within the organization. Since the Excellence Manager has targets to reduce carbon emissions SupplyCo’s solutions were of interest to him. When it was time for a revamp of heat exchangers in two refineries in Spain, the Excellence Manager therefore contacted SupplyCo’s Iberian sales team. CustomerCo had large problems with fouling in their current heat exchangers which led to losses in energy efficiency, losses in production due to cleaning, as well as safety concerns when the cleaning was performed. To mitigate fouling, the Excellence Manager believed that SupplyCo could help them optimize their processes. SupplyCo decided that if they were to make process optimizations there was a need for exclusivity. This would ensure that they became the sole supplier after the process optimization was provided. Previously, SupplyCo had been optimizing their prospective customer’s processes without being compensated. Customers usually did not incorporate this value add in their calculations when deciding upon which heat exchanger to buy, resulting in SupplyCo often losing opportunities to low-cost competitors as explained by the Refinery Sales Engineer; “*In a pair of projects we give them the support, and then purchasing only looks at the final price.*”

SupplyCo identified the Excellence Manager as a “thought-leader” that could drive the case internally. The Excellence Manager realized that to convince people internally about the new technology he needed to mobilize internal stakeholders by approaching them in different ways. Most people understood the benefits of the solutions, but they had their concerns that had to be addressed as expressed by the Excellence Manager; *“Everyone sees the benefits of the solutions, more efficiency for 4 years, but we have to convince them that it is not bull-shit”*. As the technology SupplyCo provides is not as established as the conventional technology, emotions within the customer organization were evoked. Some people in the customer organization were skeptical as they had previous unpleasant experiences, as the Excellence Manager highlighted: *“They did not want to have the new technology since they have had bad experiences with it or heard something.”* It can be difficult to overcome skepticism from customers with no experience of the technology as previously elaborated, but convincing people having a bad experience is even more difficult, as elaborated by the Excellence Manager; *“You only get one shot to prove your technology.”* With the assistance of SupplyCo, he arranged workshops targeted to three groups of individuals from the customer’s company with the purpose to discuss product, operation, and maintenance with the aim of building trust in the technology. For instance, operational people were seen to be opposing the solution to a greater extent as some had experiences with poorly designed processes leading to the new technology leaking. To address their concern SupplyCo was transparent about why it might leak and what can be done if it leaks. Further, to facilitate the translation of the message SupplyCo used visualizations. SupplyCo also helped the customer find a solution where they could keep their conventional technology, whilst installing the new technology, making it easy to switch between the two if something breaks. To mitigate the perceived risk of using the new technology the Excellence Manager commenced by using a metaphor: *“think about the new technology as a gearbox in your car, conventional technology is the low switch to be used whenever you need it, but if you want to drive at level six and optimize efficiency use the new technology”*. The customer had the opportunity to keep the conventional technology as a safeguard, as well as adding the new solution which could add benefits such as safety and energy savings.

Once trust in the technology was built, through the mediation of the internal ally, SupplyCo could highlight other values with their technology in relation to CustomerCo’s current solution. Through using spreadsheets SupplyCo could gain additional trust by showing their competence in process optimization. The spreadsheets were shown to make CustomerCo realize the environmental and economic savings from opting for SupplyCo over conventional technology. Interviewees from CustomerCo highlighted that they did not agree with the numbers presented in the model; *“good with initial numbers, but we did not use their numbers”*. The spreadsheets rather served as a good conversation starter, as the Senior Refinery Specialist expressed it: *“An inspiration, first model, which served as a tool to start talking about money”*. The spreadsheets worked as a communication tool where SupplyCo could better represent the values that they wanted CustomerCo to

consider. Instead of only discussing the numbers, the spreadsheets worked as a way for SupplyCo to visualize the values making it easier for CustomerCo to understand them. The internal efforts of using spreadsheets led to an increased focus in the customer organization to consider TVO, even among procurement. Additionally, the increased focus on TVO stemmed from the procurement division realizing that they had to change their way of collaborating with suppliers to reach the sustainability goals set up by the company. The spreadsheets, along with the more strategic role of procurement, led to them moving beyond mainly considering CAPEX to shift their mindset towards considering TVO. However, procurement was concerned about the partnership agreement not having a specified price. Therefore, they asked for an approximate price list, which was hard to construct as there are no standard prices for SupplyCo's tailored solutions. Consequently, they instead pushed for a price range in order for SupplyCo's solution's to be reasonably priced a criteria for them to sign the agreement.

When the collaboration agreement was signed SupplyCo started working with CustomerCo to find ways in how they could optimize their processes. SupplyCo worked together with process engineers at CustomerCo to design the process as efficiently as possible, something that traditional heat exchanger suppliers do not engage in. SupplyCo received operational data from CustomerCo to use as input values in their models. The more time spent on process optimization the more accurate calculations on the total value of their solution compared to conventional technology could be presented. Additionally, after the process optimizations have been made, these calculations can be re-used when it is time for CustomerCo to make new investments saving valuable time. As a result, calculations of process optimizations are used during the whole lifecycle of the customer-supplier relationship. By becoming a process optimizer, this allowed them to be compared against the conventional technology solution not based on CAPEX, but instead based on OPEX. The increased emphasis on OPEX can be illustrated by the following quote from the Excellence Manager: *"Saving some money now will have no impact. Lifecycle cost is the most important."*

In conclusion, SupplyCo was able to sign a collaboration agreement with CustomerCo, making them the sole supplier. First, the empirics show the importance of building trust through an internal ally. Despite not having a formal decision-making authority he became the main catalysator for the case, being able to internally mobilize actors by adapting his message to different personas' perceptions of value. Second, when initial trust was built, the spreadsheets enabled SupplyCo to gain more trust and interest. Finally, by moving beyond being seen as a standardized supplier into a process optimization partner SupplyCo could more clearly differentiate their value add from the conventional technology.

4.4. Summary of empirical findings

The empirical findings are summarized in Table 1. The table includes the four mechanisms of value construction developed by Kornberger (2017). In the traditional sales process, it was mainly the customer who was the constructor of value, while in the process with CustomerCo SupplyCo was able to influence the customer’s perception of value, becoming the constructor. Before the valuation practices could be influenced, SupplyCo needed to build trust. Important stakeholders within CustomerCo were initially skeptical of the new technology. To get the initial trust needed, an internal ally functioned as a bridge between SupplyCo and CustomerCo enabling the message that SupplyCo wanted to push becoming more reliable. When the initial trust was built SupplyCo could start influencing the four mechanisms of valuation practices. First, they were able to move beyond the narrow CAPEX-focus of the traditional sales process where procurement, being the final decision-maker, based their decision-making on CAPEX. The internal ally was able to persuade actors within the customer organization to consider other values beyond CAPEX. Second, SupplyCo was able to present calculations of the total life cycle value of their solution in comparison to the conventional technology, moving the comparability from being focused on CAPEX to considering the TVO. Third, the establishment of the collaboration agreement enabled SupplyCo to be categorized as a process optimizer rather than a standardized supplier, leading to them being evaluated differently. Finally, several experienced sales representatives used the spreadsheets in a confident manner. In the past there had been some resistance by sales personnel within SupplyCo to use the spreadsheets to visualize the value provided as high competence in the process was required. In the case of CustomerCo the spreadsheets served as an important conversation starter to show competence, as well as a tool to demonstrate the total lifecycle value. Translating knowledge into visualizations and metaphors made it easier for various stakeholders within the customer organization to understand the value added.

Factors influencing valuation	Customer constructor of value	Supplier constructor of value
Who is engaged:	Procurement	Internal ally
Commensuration:	Capital Expenditure	Total Value of Ownership
Categorization:	Standardized supplier	Process optimizer
Visualization:	Spreadsheets (not always used)	Spreadsheets

Table 1. Empirical Findings

5. Discussion

The following section will discuss the empirical analysis by contrasting it to previous research. First, we discuss that it is necessary to establish trust to be able to impose a new valuation criteria. Second, we discuss how a new valuation criteria, such as sustainability can be introduced. Third, we investigate how SupplyCo managed to reconstruct CustomerCo's perception of value.

5.1. Competence trust was achieved through an internal ally and calculative devices

For a supplier to be able to impose strategic agency to change prevalent valuation criterias we find trust to be necessary. The role of trust has been studied in interorganizational relationships and as Tomkins (2001) states "*All relations depend to some extent on trust*". Trust is not only limited to people but also relates to things (Luhmann, 1979). While prior studies within trust in interorganizational relationships have primarily focused on the importance of trust in people, by for instance *contractual trust*, *goodwill trust* and *competence trust* (e.g., Dekker, 2004; Van der Meer-Kooistra & Vosselman, 2000; Sako, 1992), we find that people within CustomerCo primarily lacked trust in the technology. We contribute with findings of the role that trust plays within the initial stages of the establishment of an interorganizational relationship, where an internal ally can work as a "*trust enabler*" and calculative devices can work as "*trust creators*".

Within the initial stages of a relationship Van der Meer-Kooistra & Vosselman (2000) argue that trust stems from friendships, reputation, and former contractual agreements. As the Excellence Manager previously had been in contact with SupplyCo he had already been impressed by their technology, hence the initial trust was gained through friendships and reputation. However, not all individuals within CustomerCo experienced reputational trust, as some of the individuals within CustomerCo had previous bad experiences from using the technology. Contrary to Tomkins (2001), who argues that there is a need for more information in the early stages of a relationship to build trust, we found that SupplyCo first needed to build trust to be able to present their spreadsheets showing the value of their superior technology. The spreadsheets served as "*calculative devices*" by quantifying the additional values that they provided. The identification of an internal ally that had personal KPIs on sustainability measures, functioned as a "*trust enabler*" driving the case internally. As different people perceived risk differently, the internal ally realized that the message had to be adapted depending on the recipient. The internal ally was well respected within the customer organization and a person that people listened to, thereby functioning as a bridge between SupplyCo and CustomerCo. The importance of the internal ally sheds light on the intra-firm political dimensions present in the customer organization. This highlights that the power dimension is not only tied to interorganizational relationships as highlighted by Jack et al. (2018) and Neu et al. (2014),

but it is also present in intra-firm relationships as emphasized by Christner & Strömsten (2022) and Goretzski et al. (2018).

When the initial trust was built through an internal ally, SupplyCo could provide arguments and information to increase their *competence trust*. This was accomplished through using calculative devices as “*trust creators*”, providing detailed calculations of the internal process showing that they had knowledge of how the technology works in refineries. Additionally, during the workshops, they provided information on previous reference cases which strengthened the reputational trust as it showed that they had experience from similar projects, something that is argued to be of high importance in the initial stages of a relationship (Van der Meer-Kooistra & Vosselman, 2000). Another example of how they showed *competence trust* was by explaining to actors what can be done in case of leakage for people who were concerned. By taking the valuation perspective we understand that valuation practices do not only apply to people, but also to the power of the accounting tools used (Callon & Muniesa, 2005). In this study we find that the power of the accounting tools seems to depend on the trust in them. In the case of CustomerCo, SupplyCo was able to build trust through an internal ally, which enabled the accounting tools to be viewed as trustworthy, hence enabling them to reconstruct value. The calculative devices served as “*trust creators*”, which created trust in SupplyCo's competencies as well as in the technology.

As evident from the buyer-supplier relationship in our study, the customer perceives a high project risk with using the new technology. Installation of the new technology would imply that the refinery needs to be redesigned and if the heat exchanger is installed incorrectly, it might for instance cause leakages. Van der Meer-Kooistra & Vosselman (2000) findings suggest that in interorganizational relationships that involve a high degree of project risk there is more emphasis on formal control, such as contracts, rules and regulations and less emphasis on trust-based relationships. Although the collaboration agreement between CustomerCo and SupplyCo has specifications of what each party should deliver, which serves as a type of formal control, this does not imply that a trust-based relationship is not important. On the contrary, the empirics show that SupplyCo is engaged in workshops with CustomerCo which is a way for them to create trust-based relationships. As the empirics reveal, SupplyCo puts great effort to make sure customers have trust in them. However, it might be questioned if they themselves feel trust in the customers as they impose a collaboration agreement with CustomerCo, a type of formal control (Dekker, 2004). The collaboration agreement obligates CustomerCo to purchase from them after the optimization of processes is performed. The need for formal controls was caused by a lack of trust from previous sales processes with other customers, where the customers after receiving help with process optimization for free turned to low-cost competitors. In line with Dekker (2004), we find that there is more need for formal controls, such as the collaboration agreement when an actor experiences less social control, such as trust. The valuation perspective often emphasizes values that can be quantified, however, Cochoy (2002), presents the concept of qualculation where he

argues that valuation includes both calculations and judgment. Evidence from the empirics indicates that SupplyCo's customers consider both calculable values such as CAPEX, but also include judgment in their valuations, including reliability. Even though the conventional technology has several limitations, it is often chosen as it is the reliable choice, which can be explained by the concept of qualculation (Cochoy, 2002). The perspective of valuation helps us understand that there are values within the buyer-supplier relationship that cannot be quantified. Therefore, these values need to be demonstrated in other ways, such as through building trust, or from SupplyCo's perspective imposing formal controls.

5.2. The power of accounting to impose sustainability as a valuation criteria

SupplyCo tries to emphasize the value of sustainability in line with the concept of shared value (Porter and Kramer, 2011). They use the concept of shared value to create competitiveness through innovative products, while simultaneously contributing to a more sustainable environment. Despite that they have been communicating the value of sustainability for a long time, with the ambition to distinguish their solution from competition, it is not until recently customers started to consider the value of it. As discussed in the empirics, SupplyCo first communicated the value of sustainability in indistinct ways, making it hard for customers to account for it in their purchasing decisions. Spence & Rinaldi (2014) have urged for the need to quantify sustainability into monetary terms for it to be considered in decision-making. In line with previous literature, SupplyCo introduced calculative devices to quantify the additional revenues and OPEX savings of their solution in comparison to the conventional technology. The calculative devices they introduced are designed in line with the TVO calculation (e.g., Snelgrove, 2012; Christner & Strömsten, 2022), with the cost calculation of the TVO calculation being based on the concept of TCO (e.g., Ellram & Siferd, 1998; Ittner et al., 1999; Wouters et al., 2005). The calculative devices worked as an attempt to make qualities into quantities, which enabled the technology to be made commensurable and thereby it could be compared to competitors (Kornberger, 2017). Christner & Strömsten (2022) propose OPEX savings that could be translated into sustainability arguments for instance decreased power consumption, but they do not frame this as a sustainability argument per se, but rather as an argument to reduce OPEX. Similarly, to Christner & Strömsten (2022), we find that SupplyCo quantifies the OPEX savings from being sustainable, but in contrast to them, we find that SupplyCo uses the sustainability angle as a sales argument toward their customers. SupplyCo argues that prospective customers can achieve OPEX savings through mitigating fouling and reducing energy consumption, hence increasing energy efficiency. Further, they attempt to highlight to customers that installing the new technology can lead to future benefits if regulations on Co2 taxes are introduced. However, customers are often reluctant to incorporate Co2 taxes as this is a prospective cost with an undetermined likelihood of being legislated as well as having an uncertain size. The additional revenues customers could expect on the other hand was related to

capacity and yield improvements. As evident, SupplyCo tried to emphasize the sustainability argument on the cost side, whilst the revenue side was more centered around revenue improvements resulting from their superior technology. The communication of cost and revenue benefits was facilitated by incorporating them in their calculative devices, together with the use of visualizations. Mouritsen & Hald (2018) emphasize that the relationship in their study between the buyer and supplier could be transformed by changing the “*language and visualization of accounting*”. Visualizations in our case worked as a “*translation device*” mediating the conversation to make it easier for the prospective customer to understand what values the technology would bring. The calculative devices could sometimes be experienced to be complex and hence visualizations could facilitate the communication between the parties. Similarly, to Jack et al. (2018) and Neu et al. (2014), we find economic profit to be the main argument SupplyCo wants to emphasize, but in contrast to their studies we find economic profit and sustainability to occur simultaneously, where the customer by choosing the sustainable solution also makes the greatest economic savings. Further, we find the sustainability argument to be a contributor to why CustomerCo wanted to collaborate with SupplyCo, showcasing it is not only about the economic profit.

5.3. The power of accounting to reconstruct how customers perceive value

Through applying the TVO calculation SupplyCo was able to change the customers’ perception of value. In line with previous research, we find the customer to be the constructor of value (e.g., Jack et al, 2018; Neu et al., 2014; Mouritsen & Hald, 2018; Christner & Strömsten, 2022). Similarly, to Mouritsen & Hald (2018) and Christner & Strömsten (2022), we find that the calculative devices used by customers reduce suppliers to a standardized supplier offering commoditized goods, not accounting for the product differentiation they offer. The incongruence between how the two firms perceived value created a discrepancy with what SupplyCo tries to communicate and what the customer accounts for in their valuation practices. Consequently, SupplyCo used strategic agency to change the prevalent valuation criterias. This was enabled through creating a new identity by becoming a process optimization partner, where they wanted CustomerCo to perceive them in a new categorization (e.g., Kornberger, 2017). The new categorization enabled them to change the traditional sales process, which made it easier for them to demonstrate how additional values could be gained if the customer’s processes were optimized. In line with the findings of Christner & Strömsten (2022), we find that suppliers can resist CAPEX based purchasing processes, by introducing new calculative devices serving as a conversation starter of “*how value should be measured*”. Through introducing the TVO calculation they could pivot accounting from taking a narrow CAPEX-focused perspective to a more holistic perspective that incorporated the value of sustainability by translating it to reduced OPEX. The calculative devices imposed by SupplyCo modified the way customers thought about the value in line with how the shopping cart in Cochoy (2008) changed the customers’ perception of value. Although

useful the calculative devices did not work to change the customer's perception of value in isolation. SupplyCo also had to change the traditional sales process as well as mobilize an internal ally in line with Christner & Strömsten (2022) to be able to become the constructor of value. In contrast to their study the key stakeholders were not mobilized by SupplyCo per se, but rather the mediation of the internal ally facilitated them to become convinced. The key stakeholders in the study by Christner & Strömsten (2022) were seen as the CEO and CFO as they had the ultimate responsibility for the purchasing decision where the suppliers were able to convince them through approaching their KPIs. Our study differs as we do not find top management to be involved in the decision, rather the case succeeded as new goals were imposed at a distance by top management. This made the customer organization take a more holistic perspective of value into considering TVO. Further, the traditional sales process changed as SupplyCo engaged at an earlier stage, thus becoming a strategic, rather than a standardized supplier.

6. Conclusion

The purpose of this thesis has been to understand how suppliers can influence the valuation practices of their customers by applying accounting tools. By applying the lens of valuation (e.g., Kornberger, 2017; Cochoy 2008), this study aimed to answer the earlier stated research question:

How do suppliers use accounting tools to reconstruct customers' perceptions of value?

Overall, we contribute with findings on how a supplier who is not satisfied with how accounting is prescribed to them are able to impose their own valuation criteria. Thereby, this study contributes to previous literature by taking the scarcely researched supplier's perspective (e.g., Christner & Strömsten, 2022). The accounting tools applied by SupplyCo were spreadsheets, functioning as calculative devices where the supplier was able to quantify sustainability and include it as a valuation criteria. However, the supplier could not entirely impose their own calculative devices on the customer, but first needed to be responsive to the non-financial values that the customer deemed important, such as technological reliability. With the help of an internal ally, serving as a “*trust enabler*” SupplyCo could impose calculative devices serving as “*trust creators*”. Consequently, SupplyCo was able to build *competence trust* to overcome the perceived risk of their solution. Further, we contribute to previous literature by explaining how valuation practices influence interorganizational relationships, as well as findings on how sustainability can be incorporated as a valuation criteria. Consequently, we contribute to the previous research within the field of interorganizational relationships in three ways.

First, we contribute with a nuanced understanding of the difficulty for a supplier to impose a new valuation criteria if they have not built trust in the initial stages of an interorganizational relationship. Studies within trust in interorganizational relationships often study trust in people (e.g., Dekker, 2004; Van der Meer-Kooistra & Vosselman, 2000; Sako, 1992), while we problematize that with new technologies, there is also a need for trust in the product (Luhmann, 1979). The interorganizational relationship that we study involves high project risk, where there is a combination of formal and informal controls. This differs from the findings of Van der Meer-Kooistra & Vosselman (2000), who place more emphasis on formal control in such a context. We find that trust in the product was built through *competence trust*, enabled by the support of an internal ally functioning as a “*trust enabler*” and calculative devices functioning as “*trust creators*”. An internal ally could act as a bridge between the supplier and customer organization to help mobilize key stakeholders and make the use of calculative devices more reliable. In contrast to Kornberger (2017), we find other values that cannot be quantified, such as reliability and trust, are required before strategic agency could occur. The concept of qualculation, means that valuation practices consist of both calculation and judgments (Cochoy, 2002). This points to the importance of acknowledging that not all values can be fitted into quantities and exclusively basing valuation on financial metrics. As evident,

different individuals within the customer organization interpret value differently, where certain individuals care about financial metrics, whilst other individuals mainly care about the reliability of the technology. The diverging views of what is seen as value highlight the political dimension and the importance of finding the decision-maker within the customer organization. Similar to Christner & Strömsten (2022) this highlights the need of also incorporating the impact that intrafirm relationships have on interorganizational relationships.

Second, we contribute with findings on how sustainability can be incorporated into valuation practices. Previous literature on sustainability within interorganizational relationships has taken a customer perspective (e.g., Spence & Rinaldi, 2014), where we contribute by taking the supplier's perspective. In contrast to Jack et al. (2018) and Neu et al. (2014), we contribute by finding that sustainability and economic profit can occur simultaneously in line with the concept of shared value (Porter and Kramer, 2011). Similarly, to previous research, we find that quantification of sustainability is of importance (e.g., Spence & Rinaldi, 2014) to make customers consider this in their calculations. The calculative devices imposed by SupplyCo emphasized that OPEX savings could be accomplished by considering sustainability. Christner & Strömsten (2022) have touched upon the OPEX savings that could be achieved through being sustainable but did not frame the argument as being sustainable, but rather they saw them from an economic perspective. By imposing new calculative devices SupplyCo could modify the way consumers view value (Cochoy, 2008). Further, we saw visualizations to be beneficial as they can serve as a “*translation device*” for people across CustomerCo to understand the savings that SupplyCo strived to communicate.

Third, we contribute with a deeper understanding of how a supplier is able to reconstruct how customers perceive value by using calculative devices. In the traditional sales process, we find the customers to be the constructor of value as they could decide upon which valuation criterias suppliers were evaluated on in line with previous research (e.g., Jack et al., 2018; Neu et al., 2014; Christner & Strömsten, 2022). We find additional evidence of how a supplier is able to make use of counter-accounting if they are not satisfied with how accounting is prescribed to them (Christner & Strömsten, 2022; Mouritsen & Hald, 2018). An incongruence was present where the customer and supplier organizations had different definitions of value. By categorizing themselves as a process optimization partner rather than a standardized supplier the suppliers were able to influence the customer's sales process. This was accomplished through understanding the valuation practices that were imposed on them. We find that by influencing the categorization that suppliers belong to, they can influence how they are evaluated (e.g., Kornberger, 2017). By changing the traditional sales process, the calculative devices could be used to highlight illuminated values for the decision-makers to take a holistic view considering lifecycle value rather than CAPEX. We find that to change how the customer constructs value it is important to find who is seen as the legitimate judge (Lamont, 2012). In this case, it was found to be procurement and without having them

also start considering TVO the collaboration agreement would not have been signed. We extend the existing research (e.g., Christner & Strömsten, 2022; Mouritsen & Hald, 2018) by examining how the perspective of valuation practices can explain how the customer constructs values and how a supplier, through a strategic agency (Kornberger, 2017), can influence the construction of valuation in the interorganizational relationship.

In addition to the contributions, the findings of this study also have limitations. As the sales process for SupplyCo usually takes years from initial contact to revenue, a longitudinal study might have been more appropriate. This approach would have gained insight into how the process evolved and which interorganizational challenges must be overcome to create a strong long-term buyer-supplier relationship. Another possible limitation of this study is a biased sample since more interviews were conducted within the supplier organization. We had already conducted several interviews with the supplier when interviewing the customer, potentially leading to a predetermined view of their relationship. Moreover, the people within the customer organization that were interviewed favored the partnership, hence it could be of value to talk to people who were more skeptical. This could provide interesting insights into how people reluctant to the partnership could be convinced. Further our perception of how individuals within the customer organization view value is primarily based on interviews from SupplyCo. Finally, we have studied the role that accounting tools play in influencing valuation practices. However, we acknowledge that it is not the only factor that influences how value is constructed, as it is also impacted by, for instance, political dimensions within the customer organization.

To our knowledge, our study is the first to examine how a supplier is able to use interorganizational accounting to influence the customer to consider sustainability. Spence & Rinaldi (2014) state that contextual factors can impact the consideration of sustainability as some are more pressured by external parties, such as customers and regulators. Since there are various degrees of external sustainability pressure within different industries, the supplier's role in imposing sustainability within interorganizational accounting can have various outcomes. We urge for more studies from different industries to investigate how sustainability can be incorporated within interorganizational relationships. Future studies might also examine a market context where the supplier does not provide a differentiated, but rather a more commoditized offering. It could be argued that the possibility to impose new valuation criterias in the case of SupplyCo was due to the nature of their differentiated offering with relationships dependent upon long-term relationships with few transactions. Studying another context with more transactional affairs could provide insights into understanding suppliers' possibility to impose new valuation criterias in such a context. Further, we call for research on how accounting talk can be used in interorganizational relationships. Carlsson-Wall, Kraus, Lund and Sjögren (2016) study how accounting metaphors can be used in home-based elderly care to drive change by bridging the knowledge gap between the organizational members' understanding of financial issues and accounting. Our study

indicates metaphors can be a powerful tool to translate risk mitigation and benefits of energy efficiency to various stakeholders. Future studies could explore how accounting talk can be used in interorganizational relationships to convey important messages. Finally, we found that the perspective of valuation practices facilitates a better understanding of how interorganizational relationships are constructed. In light of our findings, we urge for more studies within interorganizational relationships to take the valuation perspective to further understand how this perspective influences the buyer-supplier relationship.

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8. Appendix

Appendix A

Primary Data

Appendix A: Overview of interviews

Interview	Interview prospects	Role	Interview date	Interview length (min)	Company
1	1	Senior Advisor	15/8 2022	80	SupplyCo HQ
2	1	Business Controller	16/8 2022	60	SupplyCo HQ
3	5	Head BU, Sales Manager, Business Controller, Head of Global Sales BU, Regional Marketing & Sales Manager	16/8 2022	60	SupplyCo HQ
4	2	Head BU 2, Process Engineer BU 2	16/8 2022	60	SupplyCo HQ
5	1	Process Engineer BU 2	29/8 2022	60	SupplyCo HQ
6	1	Sales Manager	5/9 2022	60	SupplyCo HQ
7	1	Regional Marketing & Sales Manager	7/9 2022	75	SupplyCo France
8	1	Head of Global Sales, Business Development & Service	12/9 2022	60	SupplyCo France
9	1	Senior Refinery Specialist	14/9 2022	60	SupplyCo HQ
10	1	Sales Manager	26/9 2022	60	SupplyCo HQ
11	1	Vice President BU, Head of Sales	28/9 2022	60	SupplyCo HQ
12	1	Senior Refinery Specialist	24/10 2022	60	SupplyCo HQ
13	1	Consultant OMX30 company	24/10 2022	40	OMX30 company
14	1	Senior Refinery Specialist	31/10 2022	80	SupplyCo HQ
15	2	CustomerCo Excellence team	2/11 2022	75	CustomerCo
16	2	Refinery Sales Engineer & Process Sales Engineer	4/11 2022	60	SupplyCo Iberia
17	1	Senior Refinery Specialist	7/11 2022	60	SupplyCo HQ
18	1	Regional Business Manager Service	17/11 2022	60	SupplyCo HQ
19	1	Senior Refinery Specialist	22/11 2022	60	SupplyCo HQ
20	1	Sustainability Manager	23/11 2022	60	SupplyCo HQ
21	1	Senior Refinery Specialist	28/11 2022	30	SupplyCo HQ

Weekly Conversations

1	1	Senior Advisor	24/8 2022	30	SupplyCo HQ
2	1	Senior Advisor	31/8 2022	30	SupplyCo HQ
3	1	Senior Advisor	8/9 2022	30	SupplyCo HQ
4	1	Senior Advisor	14/9 2022	30	SupplyCo HQ
5	1	Senior Advisor	21/9 2022	30	SupplyCo HQ
6	1	Senior Advisor	6/10 2022	30	SupplyCo HQ
7	1	Senior Advisor	12/10 2022	30	SupplyCo HQ
8	1	Senior Advisor	20/10 2022	30	SupplyCo HQ
9	1	Senior Advisor	26/10 2022	30	SupplyCo HQ
10	1	Senior Advisor	2/11 2022	30	SupplyCo HQ
11	1	Senior Advisor	9/11 2022	15	SupplyCo HQ
12	1	Senior Advisor	22/11 2022	30	SupplyCo HQ

Appendix B

Appendix B: Site visits and informal interviews

Interview	Focus	Interview date	Session length (min)
1	R&D introduction	16/8 2022	60
2	Collaboration meeting	16/8 2022	60
3	Presentation SupplyCo history	28/9 2022	30
4	Factory round-tour	28/9 2022	60
5	Informal lunch	28/9 2022	60
6	Informal fika	28/9 2022	30
7	Informal dinner	26/10 2022	180
8	Informal breakfast	27/10 2022	45
9	Internal Q3 presentation Energy division	27/10 2022	60
10	Preparation before half-way presentation	27/10 2022	60
11	Half-way presentation and lunch	27/10 2022	120
12	New Sales Initiative Project	27/9 2022	180
13	New Sales Initiative Project	28/9 2022	180
14	New Sales Initiative Project focus refineries	15/11 2022	180