SERVICE INNOVATION:
OBSTACLES TO IMPLEMENTING THE
TOTAL COST OF OWNERSHIP CONCEPT

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**Abstract:** Firms recently face considerable challenges caused by a rather pervasive trend of globalizing economic transactions. Confronted with this challenge, firms are forced to develop and sustain competitive advantages in particular by proactive moves of service innovations to secure their market survival. Against this background, we focus a particular kind of innovative service concepts: the total cost of ownership (TCO) approach in business-to-business settings. Due to complexity and newness of our research topic, we employ a primarily conceptual procedure to analyze how the market-driven necessity to offer complex and extensive, customized service solutions forces firms to develop unique service capabilities like TCO to enrich and ‘hybridize’ their product portfolio. Our paper advances to business research in three main ways: first we highlight, building on competence-based thinking and service-dominant logic (SDL), the challenge of firms to implement innovative blends of products and services – an aspect that is still rather understated in literature. Second, we analyze consequences of demand-side cognitive biases on complex buying-decisions. Third, we provide evidence that these demand-side biases are relevant to decision-making and therefore should be considered by suppliers in designing their offerings.

**Keywords:** Service Innovation; Total Cost of Ownership; Cognitive Biases; Competence-based Theory of the Firm; Service-dominant Logic; Decision Behavior.

1. **Introduction**

It is common sense that the service economy is of utmost importance (Oliva & Kallenberg 2003; Neu & Brown 2005; Spohrer & Maglio 2008). Despite of this, the low level of service innovations is rather astonishing. Although new product development is a vital issue in case of tangible products, the level of activities in industrial service settings is rather low. One of the most challenging problems is to convince customers to adopt new service offerings. Years ago, performance contracting solutions already faced this problem (Buse et al. 2001). By now, we can observe similar challenges in case of TCO solutions.
This paper addresses the problems of launching new TCO solutions in the market. TCO solutions are not primarily a new product or service but predominantly a new business model. We argue that service innovations based on new business models are vital to long-term competitiveness of firms by enriching and ‘hybridizing’ the product portfolio. This holds in particular true in the context of industrial services (Foote et al. 2001; Johansson et al. 2003).

Therefore, we raise the research question: What kind of buying obstacles occur related to TCO offerings and hinder industrial service firms in implementing hybrid solutions? We shed light on the issue how these firms are in a position to overcome these barriers. We refer to mechanical engineering for in this industry many of the newly introduced TCO concepts can be found and the underlying buying processes are not too complex.

The paper proceeds as follows: First, we scrutinize the organizational buying process of innovative TCO solutions. The follow-up section introduces basics of TCO-based service offerings and the theoretical background of our paper. The complexity of our research topic motivated us to employ a combined theoretical approach: We basically rely on the competence-based theory of the firm (e.g. Prahalad & Hamel 1994; Sanchez et al. 1996; Freiling 2004; Foss & Ishikawa 2007; Freiling et al. 2008) but also consider insights from prospect theory, for cognitive biases (Tversky & Kahneman 1974) explain a centerpiece of the core problem.

The main aim of our paper is to shed light on the TCO influence on buying decisions from a demand-side perspective. Although we present first insights from business practice to support our assumptions, our paper is a predominantly a conceptual one.

2. The Adoption Challenge in Case of New Business Models in the Industrial Service Sector

New business models (Timmers 1998) are part of an innovation process. Every innovation, be it a breakthrough or an incremental innovation, intends to replace the old by something new. This simple fact causes resistance and changes the power constellation – sometimes more, sometimes less. In case of new TCO solutions there are different reasons for resistance that may hinder the successful implementation of the novel concept.

First, internal resistance occurs. Promoters and opponents of change stand face to face and it is uncertain which party will be stronger in the end. It is an entrepreneurial endeavor to overcome this resistance by convincing the staff that the chosen way is the right one. Second, as for external resistance competitors are challenged by the entrepreneurial move of the focused firm. They observe and evaluate what exactly has happened before they decide on potential counter-attacks. Third, customer-driven resistance to adopt new solutions exists. For customers, the adoption of innovative concepts such as TCO goes along with considerable organizational changes. For the
adoption process, this kind of resistance is often crucial and causes organizational inertia (Hannan & Freeman 1984). We will address this issue in more detail below.

Organizational buyers in mechanical engineering are no single decision-makers but teams. In literature, marketing researchers use the term ‘buying center’ (Robinson et al. 1967; Webster & Wind 1972; Hutt & Speh 2004) to address this topic. A buying center is an “informal, cross-sectional decision-unit in which the primary objective is the acquisition, importation and processing of relevant purchasing-related information” (Spekman & Stern 1979, p. 56). Buying centers are a very well research phenomenon. Still, the dynamic decision processes in buying center structures deserve more attention (Johnston & Bonoma 1981).

Research on business-to-business marketing suggests to carefully analyze (1) the structure of the buying center, (2) the number of people involved, (3) their hierarchical position in the firm, (4) their impact on the buying process, and (5) their disciplinary background (technical, business, legal etc.) (Hutt & Speh 2004). For delimitation purposes, we focus only on the most striking peculiarities that have an influence on buying decisions related to industrial services.

Buying centers typically consist of persons in the roles of buyers, users (including internal maintenance teams), formal deciders, influencers, gatekeepers, and initiators (e.g. Webster & Wind 1972). Not all of them are intensively involved in the process but all of them play a role when a final decision is to be made. Moreover, in many instances it is vital to identify the role of buying center members with higher hierarchical ranks to better understand their position, their motives, and their impact on the purchasing decision.

In many cases, the role of the maintenance teams changes with a potential adoption of innovative solutions with the result that these teams may lose importance. The reason for that is that in connection with the new business model the way of the division of labour between customer and supplier changes – sometimes more, sometimes less. Insofar many members of the buying center are prone to become opponents.

Another aspect refers to the way how decisions are made and how people in organizations evaluate situations. In this context, we can observe bias effects of the decision-makers involved. They typically concentrate on the point in time when the buying decision is made. As for this point in time, decision makers perceive to be in a transparent situation where they can easily compare offers of the suppliers. However, this transparency is oftentimes an illusion since buyers compare apples with oranges for quality items cannot be assessed ex ante due to experience qualities of the items (Darby & Karni 1973).

This, however, does not stand at the forefront of our reasoning. Another effect is much more obvious and relevant to the overall situation and, finally, the adoption: it is the simple fact that due to cognitive biases people tend to decide based on heuristics, in particular the representativeness heuristic, the availability heuristic, and the anchoring heuristic (Tversky & Kahneman 1974). Based on employing these heuristics in decision processes, people seem to rank present
payments higher than future cash flows. TCO concepts are typically focused on advantages as for the running costs. Suppliers most frequently argue that savings in the future by very low running costs dramatically exceed higher prices when the initial purchase decision is to be made. However, compared to the rather certain amount to be paid after buying the machine, the future savings often seem to be quite uncertain.

In this context, Oliva & Kallenberg (2003) point out that very often decision makers do not consider a service contract for maintaining a machine as important as the (high value) machine itself. So decisions on both the demand and supply side are often influenced by cognitive biases, which negatively affect the decision process.

The biases do not seem to be rational at first glance since TCO concepts are often superior in terms of cost and/or benefit. At second glance, it turns out that different logics are in use. The more focused logic centers on the initial buying decision, the wider logic on the whole usage of the technical infrastructure. We know from management theory that deeply employed mental models and routines (Pentland & Rueter 1994) are hard to replace. In case of TCO adoption this exactly is one of the core problems of suppliers. So customers as teams with many opponents have to change their dominant logic before a TCO purchasing decision is possible. In our research, we focus on this issue and analyze the influence of demand-sided, ‘non-rational’ decision processes on the success of launching innovative service offerings.

3. Basics on Services and TCO Business Models

So far, we touched on the term ‘service’ already several times. But what is the nature of services? Put briefly, services are characterized by process, performance, and organizational items.

As a performance, services primarily consist of an intangible outcome that is difficult to evaluate by customers in terms of quality (Grönroos 1990; Bruhn & Georgi 2006; Lovelock & Wirtz 2011). Moreover, when the sale takes place, in case of services there is not already finished performance. Oppositely, customer and supplier negotiate and agree on a contract that promises future performance according to the specifications. The case of TCO is a good example for selling promises instead of finished goods. Accordingly, Alchian and Woodward (1988) differ among contracts and exchanges with services belonging to the ‘contract goods’. Although frequently mentioned in literature (e.g. Van Looy et al. 2003), heterogeneity of service performance is not a pervasive feature of services since standardizing the outcomes is possible to a large extent. However, a certain degree of customization is a typical feature of services, in fact. This, however, depends on process items which are mirrored in the performance.
As for the process items, in case of service transactions a single customer interacts with a single supplier insofar as both parties form (at least) a temporary value-added unit (Vargo & Lusch 2004). In this relationship the customer acts as a co-producer and oftentimes also as a co-developer. The typical roles of customer and supplier vanish to some extent for the customer is asked for input in terms of information, production factors or manpower. Customer’s input in the value-added process is a mandatory part of service production. In case of TCO all kinds of customer input occur. In connection with this kind of customer integration (or: customer participation) service processes are characterized by their interaction between customer and supplier. Both customer integration and interaction help to explain why a temporary value-added unit might emerge: informal and formal couplings between the two parties evolve and go along with partner-specific adaptations of resources as well as activities. The fact that the customer becomes an integral part of the value-added activities is another service feature that motivates researchers to point to the process nature of services (Grönroos 1990; Van Looy et al. 2003). The process itself is a source of the customer’s benefit and, thus, of the performance. In case of mechanical engineering with often close relationships, this holds particularly true.

As already briefly introduced, service transactions go along with some organizational consequences as well. The most striking feature is that services are typically sold in a governance structure apart from the market. It was up to Vargo and Lusch (2004) to outline that service transactions take place in a ‘hybrid’ constellation between market and hierarchy in the sense of Williamson (1985). We share this rather novel feature of services for a semantic reason. The term ‘service’ originates from a relationship between a principal and a ‘servant’. We should not misinterpret this role in a too hierarchical sense. However, we should be aware of the fact that service providers work on order principles that cannot be perfectly separated from hierarchical constellations. Thus we consider the blend of market and hierarchical modes of governance a centerpiece of the service nature. Viewing service transactions in such a manner is useful to overcome the typical focus of transactions, i.e. the focus on value-added activities while simultaneously neglecting the utilization process. Vargo and Lusch actually consider how customer and supplier collaborate in terms of customer value and benefit.

So far, we already referred to the debate on the service-dominant logic, Vargo and Lusch (2004, 2007) proposed. For the purpose of clarification we need to stress that we relate fragments of the debate to service transactions. Vargo and Lusch, instead, argue against a somewhat different background. They have in mind value-added activities and performances of all kinds. They design a view of value-added activities in modern economies that are pervaded by service principles independent from the nature of the goods. This view is highly relevant to our topic since in case of TCO businesses in mechanical engineering the transactions rest on a blend of ‘hardware’ (machines, accessory equipment) and
services of the different kind. In this sense, TCO business models make former product businesses turn into service businesses – despite the fact that hardware elements still might be a core of the offering. This is exactly the reason for us to employ thinking in terms of the service-dominant logic in our paper.

In the meantime, we touched on the TCO concept already several times. What is still open, is the question what TCO is about and what TCO implies. TCO is a rather novel service concept based on a particular type of business model that is introduced in more detail below.

Basically, total cost of ownership means the estimation of all direct and indirect costs associated with an asset or acquisition over its entire life cycle (Dahut 2008). Heilala et al. (2006) specify that TCO considers all life-cycle costs, including acquisition and procurement, operations and maintenance, and end-of-life management. This, however, does not perfectly reflect the meaning of TCO in B-to-B transactions in general and in mechanical engineering in particular. Customers are confronted by the TCO concept with a rather ‘objective’, cost-focused concept which can – depending on the risk preference of the decision maker – support different purchasing decisions (Roodhooft et al. 2003; Degraeve et al. 2005). According to Ellram (1994), TCO is a purchasing concept that aims at understanding the costs of buying a particular good or service from a special supplier. Furthermore, TCO intends to bring to the attention of a customer that a higher acquisition price is compensated by lower costs in later life-cycle phases (in particular maintenance, employees, services, energy) (Ellram & Siferd 1998).

Apart from thinking in TCO terms in many instances TCO concepts are developed in business practice. They are devoted to decrease customer’s costs over the life-cycle of using the technical infrastructure (machine). According to the SDL of Vargo and Lusch (2004, 2007) we should keep this aspect in mind. Insofar, TCO concepts often imply a certain kind of customer/supplier cooperation. This collaboration is framed by a hybrid governance concept – be it formal or be it informal. In particular in the first case TCO might go along with a distribution of risks in a manner that suppliers make promises or grant guarantees to ensure an effective decrease of some ownership-related costs. Thus, we should regard the design of TCO-based business models as well. To address TCO in the light of the debate on business models is useful for it allows for a more systematic view on potential (dis-)advantages that go along with TCO.

A business model consists of three frame-giving elements: (1) value proposition, (2) value-added architecture, and (3) sales model (Legge & Hindle 2004).

**Value Proposition.** TCO provides customers with a clear perspective on decreasing costs in the realm of the utilization of the machine over time. Moreover, TCO allows for a more transparent and precise calculation of the costs of purchasing and driving this technical equipment. In connection with the sales model TCO might reduce the uncertainty of the customer when buying a machine.
Value-added Architecture. TCO business models are novel in the way how the value-added process is organized. Typically, TCO implies more intensive couplings between customer and supplier and, thus, often a higher degree of customization. Different from the debate on customer integration, TCO goes along with a considerable integration of the supplier in utilization activities of the industrial customer. This is fully in line with thinking in terms of SDL.

Sales Concept. The TCO concept is a time-related full-service offering inseparably linked to the product itself which implies that the customer only has to pay one price for product and service and cannot buy product and service separately. Such a linkage between product and service is indispensable because the supplier ex ante guarantees a time-related durability of components or even of the whole product and therefore has to be allowed to fulfil necessary services to be able to ensure a professional usage of the machine and therefore to be in a position to keep his promise.

All in all, the three pillars of business models allow for clarifying the innovative facets of TCO models. We now pass over to employ theories to better understand TCO business models.

4. Theoretical Background

We already referred to the fact that TCO concepts imply a temporary value-adding unit of (parts of) the customer and the supplier firm. Consequently, we need to take both the customer side and the supply side into account. The question arises how to model this organizational hybrid in the TCO context.

To this end, we employ the competence-based theory of the firm (Foss & Ishikawa 2007; Freiling et al. 2008), for this part of management and organization theory allows addressing resource, process, and performance issues at the same time. It rests on the ambition to explain the nature of the firm (and the hybrid) in terms of resources and organizational competences. The competence-based theory of the firm (CbTF) is useful to this paper, as it allows identifying critical resources and capabilities and considering problems of adopting new solutions caused by organizational inertia.

In this context, Sanchez and Heene (1996) developed the open system view of the firm. They demonstrate that firms, be it customers or suppliers in our case, are permanently in touch with external parties (customers, suppliers, collaboration partners, consultancies, etc.) (Sanchez & Heene 1996). While Sanchez and Heene focus on one firm, we need to extend their view to consider the hybrid made of customer and supplier. Moreover, we add with the utilization process of a co-produced and/or co-developed performance another system element. For the purpose of simplification, we merge other elements of Sanchez and Heene (1996)
to more aggregate units. Neither we distinguish among different assets, nor do we separate between strategic logic and related management processes. Figure 1 portrays the modified open system view and emphasizes the interfaces of the firms with the business environment and the transaction partners as cornerstones of the hybrid.

Figure 1: Modified Open System View of the Firm

Figure 1 highlights the interconnectedness of governance principles, resources, processes, and structures of the customer and the supplier. We argue that without these couplings TCO concepts are hardly able to keep their performance-related promises. Besides that, both firms need to fill resource gaps (Coviello & McAuley 1999; Knight 2000; Hollenstein 2005; Perrini et al. 2007) by accessing so-called ‘firm-addressable assets’. In this sense, we propose that both customer and supplier need ‘absorptive capacity’ (Cohen & Levinthal 1990) to identify external knowledge and assets, to assimilate, and to integrate them for the purpose of application to commercial ends. Evidence from literature (Zahra & George 2002) suggests, that absorptive capacity fuels the internal run of activities (both at the firm and hybrid level) and increases competitiveness. Thus, we conclude that a bilateral absorptive capacity fosters the adoption of TCO concept in the market.

Figure 1 also shows the interface between the firm and the product market. In this context, firms constantly learn by participating in the market process.
Simply speaking, the more they are involved in transactions, the more they are able to learn and to reconfigure their capabilities – an aspect that is relevant to the TCO context. The more suppliers are able to identify customer’s resistance to change, the better they are positioned to tailor their TCO concepts to the problems perceived by members of the buying team. Oppositely, the more customers are aware of the entire facets of TCO solutions, the better they are able to recognize advantages and to negotiate particular problems with the supplier. Thus, we propose that the extent of learning and the chosen learning circles (single-loop, double-loop, and deutero learning in the sense of Argyris & Schön 1978) positively influence the adoption of TCO concepts in the market.

The different outcome of learning processes is strongly related to individual restrictions which influence the ability to act in a more or less rational manner. This holds true for supply-side and demand-side decision makers as well. According to v. Mises (1949) decision makers act based on available knowledge and own expectations according to the homo agens (acting man) notion. However, in order to explain the decision-making process in a more specific and realistic manner, it is useful to address the heuristics employed. To this end, Tversky and Kahneman (1974) introduce within their prospect theory three common heuristics that are said to have an influence on individual decision behaviour: the representativeness heuristic, the availability heuristic, and the anchoring heuristic.

The **representativeness heuristic** describes the phenomenon that people in general evaluate probability by representativeness what causes a neglect of prior probabilities. As people are more likely to remember subjectively important events independent from the probability of the event they tend to believe that such individually crucial events appear with higher probability and base their decisions on this conviction. Thereby, this may be dangerous as it could lead to systematic decision biases.

The **availability heuristic** is characterized by the fact that people evaluate the relevance of an event by the simplicity with which such a type of event can be recognized. Thereby, they equalize similarity with probability and ground decisions on this equalization which normally increases the change of taking insufficient decisions.

The **anchoring heuristic** originates from the fact that due to complex information people try to approximate the real decision situation by use of an imprecise estimation, the so-called ‘anchor’, which they plan to specify in the future when more information is available. People tend to rely on their basic estimation even if it is proven wrong. This often entails the fact that decision-makers make their decisions on an inadequate basis.

As buying decisions in the context of TCO are normally very complex, acting in a somewhat rational manner seems to be difficult for decision makers due to the fact that they have to face a severe problem in collecting preferably complete information on the buying situation. This entails that decision makers are somewhat forced to resort to heuristics to ease decision processes, a fact that
shows the relevance of the heuristics described above. Related to our research topic it brings us to discuss this aspect in detail in the next part of our paper.

5. Influence of the Decision-making Process on the Diffusion of TCO

By now, there is no clear evidence that TCO improves competitiveness or has a positive impact on business operations (Salavou & Liouka 2003). Related to our previously built argument, the reasons for this might be at least and primarily resource constraints (Jones et al. 2001), misbelieves, organizational inertia and shortcomings of entrepreneurial orientation, surrounded by limited market experience (Salavou & Lioukas 2003).

To draw a picture of the decision situation, we analyze reactions on two different decision scenarios embedded in the field of mechanical engineering: purchasing a machine without any (external) service and buying a machine in connection with a full-service offering according to the TCO concept. So doing, we focus on two extreme positions and present a comparison to highlight the benefits and shortcomings of TCO from supply-side as well as especially demand-side. The first case is about stand-alone purchases of machines in a product dominated business. In the second case we refer to a transaction that is converted from a product to an entire service oriented one. In this case, from the customer’s point of view acquisition and service costs can be determined ex ante (Carr & Ittner 1992). Surprisingly, this case cannot be classified as new (Tibben-Lembke 1998) since decision makers typically are aware of the fact that the purchase price of a machine does not cover all future costs related to running the machine and may not even be the largest cost aspect (Borsodi 1927; Stewart et al. 1939). Next, we shed light on TCO concepts from a customer’s and supplier’s viewpoint.

The Customer’s Perspective

As highlighted above, industrial buying decisions are normally group decisions (Lilien & Wong 1984). This entails that social behavior plays a major role in the decision process (Johnston & Bonoma 1981). Literature agrees that certain people carry out specific functional roles in buying center purchasing processes (Webster & Wind 1972; Grashof & Thomas 1976; Fortin & Ritchie 1980) as already mentioned above (buyers, users, deciders, influencers, and gatekeepers). Here we need to keep in mind that all these members of the decision-making unit can act as promoter or as opponent. In the face of the innovative facets of TCO solutions and the degree of organizational change in case of TCO adoption we can expect considerable internal resistance. This holds particularly true in the face of available internal maintenance teams. They might fear to get fired in case of full-service contracts. Thus, it is not surprising that these people act skeptical confronted with any idea like that. Moreover, their social embeddedness in the firm enables them to
share their skepticism with others in order to prevent full-service solutions.

Next, we try to specify promoters and opponents in the TCO buying process based on the five roles outlined above. We thereby focus on the two situations ‘buying a machine without any service’ and ‘buying a machine with full service’ and assume that service is not free of cost.

Against this background, solely buying a machine without any service seems to be the best choice from the point of view of buyers due to financial constraints and the rather limited expenses when choosing this alternative. The same may hold true in case of financially driven deciders. Also deciders who are aware of the situation of the own maintenance crew often try to avoid the more radical change option to prevent the firm from severe internal conflicts. In general, the ‘social costs’ of these change processes should not be under-estimated. In typical calculations, however, they oftentimes do not show up. Another point is that deciders are often far away from the operating units so that they cannot fully realize the benefit of services. Accordingly, their willingness to pay might be restricted. In contrast to that, users are strongly interested in services that ensure a smooth and effective run of the machines. Availability and reliability are often very good reasons to take TCO solutions into closer account. Nevertheless, users are often closely related to internal maintenance teams. If so, they might think twice in order to avoid internal conflicts. Influencers and gatekeepers typically belong to the roles without a clear ambition to act as promoter or opponent. However, once they made their own choice they have considerable impact on decision-making. Influencers very often prepare calculations for the formal deciders. Gatekeepers have the opportunity to control the flow of information and to steer social contacts among the people of the buying center and the relations to suppliers. This is relevant to the marketing activities of the supplier.

In this context, we need to consider the decision heuristics once again. The buying decision in the case described is a very complex one because in general it is very difficult to compare both possible buying alternatives in detail. This is triggered by the fact that downtimes of the machine are normally uncertain. Thus, the offerings (stand-alone purchase versus full-service contract) are often not comparable in terms of numbers. A more or less ‘rational’ choice between both alternatives is impossible since in case of the full-service solution the service costs are often known whereas in case of the product transaction the service level is simply not comparable and the costs cannot be estimated on a reliable basis.

This entails that buying center members need to simplify the decision situation considerably for otherwise they are not able to deal with the extensive complexity of this situation. Employing the anchoring heuristic means that buying center members try to support missing knowledge on the downtime of the machine by their own – optimistic or pessimistic – estimation which is mainly guided by prior experience or so-called ‘expert information’ that may be out of date or of little significance in this special case. Furthermore, the general perspective of the buying center members on service influences the decision. If a member considers services
for not that useful, it is most likely that (s)he prefers the stand alone solution even if the full-service solution option would be reasonable from a meta-perspective.

Employing the representativeness heuristic and the availability heuristic may lead to an opposed buying decision as normally ‘bad’ events like a severe machine failure and its consequences are much more easily to remember than a preferable long-term smooth run of a machine.

Buying centers are normally established to pool internal expertise. In case of TCO solutions this is not easy. Spekman (1978) shows, based on examining the decision-making potential of 20 industrial buying centers in 20 manufacturing firms, that an increase in (externally driven) uncertainty leads to a decrease of the division of labor within the buying center. Surprisingly, very complex buying decisions are very often made by only one person because persons who consider themselves not to be an expert retreat from participating in the decision process. This goes along with the so-called ‘social loafing’-phenomenon that describes that due to a reduced competition between group members very often certain members tend to retreat from group (decision-making) processes (Högl & Gemünden 2001).

Another reason for the relevance of individual cognitive biases in group decision processes may be that buying centers are in their basic structure more or less very cohesive buying groups and therefore are prone to groupthink (Janis 1995). Groupthink is characterized by the fact that groups only strive for achieving a consensus and thereby lose their ability to judge existing alternatives critically. This is applicable in case of TCO adoption as well for such a behavior comprises focusing on a specific person and his/her decision attitude which is tacitly accepted and copied by the whole buying center.

The Supplier’s Perspective

For the supplier the difference between the two alternatives (stand alone versus full-service business) is considerable. Selling a machine is a product transaction with limited commitment. A full-service contract shifts the attention from a single transaction to a long-term business relationship (Jackson 1985). In terms of the Vargo and Lusch (2004) discussion the differences are even more striking. Selling machines belongs to the goods-dominant logic; for TCO solutions SDL plays a much more important role.

Employing CbTF thinking and relying on the open system view of the firm, we believe that the sluggish diffusion of TCO concepts is a multi-level phenomenon. First, we pointed out above that a sales strategy adapted to the members, functions, roles, and hierarchical ranks of the members of the buying center facilitates adoption. Second, a fine-tuning of the service offerings deserves attention. Obviously, uncertainty prevents many customers from buying TCO models. Accordingly, suppliers need to take a proportion of the buyers’ risks if they want to market the concept effectively. Insofar, performance guarantees might be one means, support of the organizational change process another. It is important to identify the final
reasons why customers do not adopt TCO. If for instance the customer is scared about the future role of the maintenance crew or fears losing important expertise in this area by outsourcing etc., it is vital to mitigate the consequences. Third, suppliers need to be aware of the strategic role of innovative service solutions or hybridized offerings (blends of tangible and intangible goods). This implies to reinforce internal service units and to upgrade them by granting more managerial discretion.

The Hybrid Perspective

We pointed out earlier that TCO creates temporary organizational units beyond the boundaries of supplier and customer. Thus, if TCO concepts should unfold their entire power it is necessary to equip the relationship with an organizational frame that nurtures inter-organizational exchange of knowledge and competence building. Figure 1 portrayed the magnitude of possible inter-organizational ties. Obviously, it is mandatory that the customer and supplier pool resources and develop formal and informal means for an open and reliable collaboration. This leads us back to the governance frame of the business relationship that cannot be separated from a certain network culture and common goals. In case of implementation, this frame allows not only for cost reduction but also for gains in terms of service quality and effectiveness. However, as long as those relationships are not in place, no real synergies will occur. As a consequence, the exchange partners need to have some kind of inspiration, trust and commitment to make first steps and mutual experiences. Oftentimes, this takes investments of the supplier to make the customer join in the relationship – in hope of later pay-offs.

First Empirical Evidence

In December 2010 and January 2011, we carried out an in-depth case study to gain deeper insights into the practical aspect of offering full service solutions. The researched company offers hot melt adhesives and application technology on a B-to-B-level. We conducted five in-depth interviews with two company internals from the sales department, one field staff person and two customers. We guided the semi-structured interviews following an interview guideline developed out of literature. We chose this procedure to regard scientific principles and to ensure comparability of the answers. Each of the interviews lasted more than one hour.

The customer interviews revealed that buying teams structures depend largely on the value of the transaction. A growing purchase price entails that more persons are involved in the buying process. Comparably ‘small’ buying decisions (up to a purchasing prize of approx. EUR 10,000) are normally carried out by only one person. So we believe that the relevance of demand-side cognitive biases is comparably high related to these decisions. But also buying decisions that comprise a higher financial involvement seem to be influenced by use of decision heuristics. One of the interviewed persons described the hot melt application technology market
as ‘complex’ and told us that they nearly always buy the application technology needed taking into account the long-term relationship with the supplier and not really looking for costs. He said: ‘Well, normally we have to make group decisions in such a case but this way is too difficult and time consuming. We think that our group leader has a lot of experience a therefore trust him when he decides such things.’ We believe that this is one indicator that individual cognitive biases can play a role in group decision processes. Furthermore, both customer representatives highlighted the importance of services and claimed a lack of supply-side service orientation. One of them said that ‘service is something we explicitly have to ask for’. So it is not surprising that the SME under research does by now not offer full service solutions.

The demand-side claim for service was acknowledged by the field staff person we asked. But his interpretation was slightly surprising. He remarked that: ‘Customers always want everything. If we would offer full service for free, many customers will accept this offer. But I believe that this would be completely different if the customer would have to pay for service…!’

This was his reasoning for the fact that the firm, up to now, does not offer full service.

Members of the staff told us that they sometimes feel not well-informed regarding new product developments. This seems to influence the service quality as one of the interviewed persons told us that it is ‘sometimes difficult to satisfy customer needs’. As for services-related competence, this statement is an interesting one. Furthermore, both company internals seemed on the one hand to be well aware of the relevance of the services. On the other hand, both of them denied a personal responsibility for improving the service offering and mentioned that ‘this task is related to the management’. They also said that ‘(…) we cannot offer service for each of our customers as many of them only buy our products once every few years more or less by chance.’

This statement gives evidence for the relevance of the coordination aspect. Another topic mentioned seems to proof that personal decision attitudes as well as trust play an important role in such buying decisions. One of the company internals described that ‘(…) we know a lot of our customers for years so we trust them and they trust us. If we promise that a problem will be fixed as soon as possible, our customers do not need a contract to believe this.’

This can be interpreted in two ways: First, it can be concluded that service is more an implicit factor fostered by trust and therefore offering TCO is sometimes a too aggressive mode to promote service solutions the market is not entirely ready for. Second, a certain undervaluation of service and of market needs seems to speak out of this statement.

The case study results provide a first support for our perspective on the relevance and impact of full service solutions. However, more empirical work is required to better understand the processes of the customer, the service provider and the interaction center made of both parties.
6. Résumé

We show that an implementation of innovative service concepts like TCO is influenced by certain demand-side as well as supply-side constraints. Regarding the demand-side, especially non-rational decision making and a use of decision heuristics seems to be crucial. This holds true despite of the fact that decisions in the context of TCO are mostly made by groups as this does not provide a higher rationality of decisions due to the fact that the involvement of individual group members in the decision process alternates. On supply side, an overall lack of service orientation combined with a misinterpretation of market developments (that is to a certain extent triggered by an application of decision heuristics) mainly seems to prevent suppliers from offering full service concepts. Missing service competence and resource constraints may considerably foster this supplier attitude.

Our paper gives first insights into this complex research topic. Nevertheless, we believe that future – conceptual as well as empirical – research on this topic is necessary to understand the mechanisms that play a role here in detail.

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