

Customer perceived value in software business relationships

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Abstract

This paper addresses perceived customer value in the context of software business. Customer perception of value is a complex phenomenon not only theoretically, but even so in practice. We have chosen to examine this phenomenon in the specific context of software business, as we believe that software as object of exchange gives to the analysis fresh viewpoints due to its abstract nature. Our study is exploratory in nature, with an empirical insight gained through two qualitative case studies from the software business. As a conclusion, we present elements of customer perceived value within both software project and product business. Based on this, we suggest a framework for examining the way business logic has an influence on the customer's value perception, especially in terms of the complexity of the perception of both benefits and sacrifices.

Keywords: Value perception, customer, business relationship, business logic, software business

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Introduction

Value creation in business relationships has gained a lot of attention in the marketing literature in the last decade (Lapierre, 2000; Flint, Woodruff, & Gardial, 2002; Eggert, Ulaga, & Schultz, 2006). It has been emphasised, that customer perceived value is always the customer's subjective evaluation of the sacrifices and benefits involved into to the exchange. Value has also been approached as including various elements, both monetary and non-monetary (Ravaland & Grönroos 1996, Eggert & Ulaga, 2002, Ulaga, 2003; Komulainen et al 2007). Thus, the customer perception of the value is a complex phenomenon not only theoretically, but even so from the managerial perspective. Furthermore, the context-dependent nature of value has also been emphasised in the literature and therefore value has been studied in different types of industry contexts. Our study continues this line of research, being an exploration of customer perceived value within a specific industry context.

We have chosen the software business as the industry context for our study as we believe that the abstract nature of software causes even more challenges in understanding the customer perceived value than is the case in more traditional industries. Software business is a blurred business, but very important business sector for our everyday life in the form of increasing intelligence in all kinds of devices that we use. Cusumano (2004) suggest that to capture the blurred nature of software business we can consider two basic business logics in the software industry: software products and software projects (see also Tähtinen 2001, Alajoutsijärvi et al. 1999, Hoch et al. 1999). Between these two different business types there are also different kinds of "hybrid" software businesses, i.e. businesses that include both product and project oriented strategies (Cusumano 2004). Even though the number of software companies that are following the hybrid business logic is continuously increasing, there still are a great number of companies that either represents a rather pure product company or a rather pure project company. These two types of business logic can be seen as very different from each other when it comes to such important management and marketing issues as central capabilities, object of exchange, production, customer base, nature of markets, branding, nature of exchange, and type of organization (Alajoutsijärvi et al. 1999). Thus, software, being a complex combination of product and service elements and including technological complexities is a challenging object of exchange for both software buyers and sellers. The pace of technological development in these industries is also causing complexities for the market participants.

In this study the objective is to increase empirical understanding of the customer perceived value in software business. We aim to find out, *how can the customer perceived value be understood in software business and how is the business logic intertwined on the customer's perception of value?* Our study is more of an exploratory in nature and with empirical emphasis. To gain preliminary understanding we will use the existing literature on value creation in industrial marketing and software business. In the empirical part, we have conducted an interpretive qualitative study in order to explore the nature of customer perceived value in the chosen industry context and to find out how the business logic is connected to it. Our research strategy includes a multiple case study of two customers, one focusing on project business and another in product business.

Perspectives on customer perceived value

One of the most topical themes in marketing is the discussion on value creation in business relationships (Eggert et al., 2006; Flint et al., 2002). In the existing literature, value is typically conceptualized as the subjective perception of the trade-off between benefits and sacrifices – both monetary and non-monetary (Walter et al. 2001, Lapierre 2000, Parolini 1999, Slater 1997, Berry & Yadav 1996, Ravald & Grönroos 1996). The benefits and sacrifices can be understood in monetary terms, but they can also be seen as including non-monetary rewards, such as competence, market position, and social rewards (Walter et al. 2001). The non-monetary aspects of value have received particular attention in studies aiming to classify these different value aspects (e.g. Ravald and Grönroos, 1996; Eggert and Ulaga, 2002; Fiol et al., 2011). Such benefits might include product quality, delivery, personal interaction and service support (Ulaga, 2003). Non-monetary costs can include time, effort, and energy spent, including that spent on conflict resolution, by the customer to obtain the product or service. In this study, value is understood in both monetary and non-monetary terms.

An essential element in the current understanding of value is also subjectivity and the idea of *perceived* value. These refer to the basic nature of value for the customer – the value created by the supplier is in the end measured in the mind of the customer, it further leads to the fact that the value created is in most cases very hard to measure. In terms of software, the complexities related to the multifaceted nature of benefits and sacrifices often create challenges in the buying decision as the non-monetary aspects, such as e.g. training needs, technological uncertainties and liability issues may be difficult to determine.

The value that the customer perceives is also relative to competition – meaning the alternative solutions that the customer is considering or has available in relation to the particular need (Ulaga, 2003; Komulainen et al., 2007). The supplier should be able to create more value than the customer could achieve by choosing some other solution created by another, competitive supplier. This kind of differential value is very hard to define and measure, because the expectations of the customers are based on the alternatives available on the market; that is, the impact of a similar or substitute product is remarkable Parolini (1999). Thus, measuring differential value always requires a mapping of other potential solutions and comparison of those with the one under consideration. However, it is not usually an easy task to identify which options are seen as potential and comparable solutions in the eyes of the customer. For the supplier, it is thus essential to understand the alternatives to the supplier's offerings that customers consider. In general, a false perception of value is more likely when there are intangible elements and services present, or systemic and complex goods, or benefits that are not immediate, or post-purchase costs and costs of consumables, products and services that are new to the customer; and lastly, in the case of infrequently purchased goods (Parolini, 1999). From the viewpoint of software business, the above mentioned list is interesting: software is indeed an intangible and in many cases a rather complex good, with benefits that are not usually immediate, as software is valued by what it *does*, not by what it *is*.

Value is, however, not merely tied to the actual object of exchange, such as a software component; instead it is dependent on the success of the whole relationship between the customer and the supplier (see e.g. Lindgreen & Wynstra 2005). This view underlines the importance of understanding value creation as a process during which the customer and supplier interact and therefore, not only the product but also to the overall process through

which the product is developed, marketed, and delivered to the customer should be considered (Kothandaraman and Wilson, 2001). The process view is especially relevant in terms of the service aspects as the value a customer perceives may be different during the exchange process and after it when the customer is able to evaluate the outcome of the process more thoroughly (Lapierre, 1997). In the software business context, during the interaction, the software and related services are exchanged between the parties and thus the benefits and sacrifices are realized. However, there is also a great amount of interaction between the parties in the relationship that is not directly related to the object of exchange. This interaction does, however, usually influence how the customer perceives the total value obtained. Naturally, it is hard to draw clear distinctions between the value perception related to the object of exchange and that related to the relationship, and usually this distinction is not even necessary. However, sometimes it is important to bring out the role of relationship-related value, in order to remind the actors in the field that the value perceived by the customer is the sum of many things. These elements are sometimes only indirectly related to the object of exchange, but nevertheless their weight in the customer's perception of value can be essential.

Software business characteristics

Software plays nowadays an important role in our modern society because of two interrelated reasons. Firstly, the remarkable growth of software business and its influence on the world economy is huge (Messerschmitt & Szyperski 2003). Secondly, software is strongly present in our every-day life: when we use our mobile phone, travel by airplane or use modern home devices, we are dealing with software. The software business is typically characterized by distinction of software product and software project business (see Cusumano 2004, Hoch et al. 1999). Software project business is a professional software service or to tailored software business (see, e.g., Alajoutsijärvi et al. 1999) in which the customer organization is usually charged an hourly rate, not a fixed price for the software products or components provided. Software product business refers to software products that are provided standardized to several customers. However, also companies that use a hybrid business logic employing both two logics operating thus partly in both of these different business areas exist (Sallinen 2002, Cusumano 2004). In their purest forms, the two logics represent rather different types of businesses in many respects. Differences can be identified at least in central capabilities, object of exchange, production, customer base, nature of markets, branding, nature of exchange, and type of organization (Alajoutsijärvi et. al., 1999).

The software product business has same types of characteristics as typical firms operating in the consumer goods industries. The software is highly standardized and productized and sold to a mass of customers in the market. Within software industry, one example of highly productized business, is the software component business which is based on the idea of off-the-shelf software which is sold and bought as any standard item (see e.g. Morisio et al. 2000). In software product business the relevant managerial areas include productisation, channel management, alliance building and branding (Alajoutsijärvi et. al, 1999).

In software project business the key managerial issues include project management, management of few close customer relationships and importance of key individuals (Alajoutsijärvi et. al, 1999). The role of services is central in project business firms. Tailoring software typically means that work is done together with the customer within service

relationship which means that in terms of management and marketing especially, issues such as customer service and key customer management become crucial and the importance of personal communication with the customer is in the focus.

Empirical research methods

In the empirical part, we have adopted qualitative approach which enabled us to examine the research phenomenon in a holistic way. This is needed as the phenomenon under study the customer perceived value in the software business is closely intertwined with its context. The purpose here is to explore empirically how the customer perceived value can be understood in software business and how does the business logic influence on the customer's perception of value. Our intention is to find out, what are the elements of customer perceived value in this empirical setting though looking at both customer perceived benefits and sacrifices and also the way these elements interplay.

Our research strategy includes a multiple case study of two firms buying software. As was discussed earlier, the two business logics of project and product business describe the software business notably. To encompass all the aspects of customer perceived value in business relationships in software business, a case from both product business and project business is needed. Our empirical research setting thus includes two cases; a case of customer perceived value from the project business and another from the product business. In the analysis, we focused on identifying especially those value elements that were related to the particular business logic. Thus, the specific functionalities and characteristics of the actual software in the cases were not in the focus of our analysis, although of course, these were intertwined in the identified value elements as well.

Our empirical data includes interviews of the two software buyer companies and suppliers from both cases in order to enlighten both the relationship's counterparts' views. Concerning the case in project business, three interviews of representatives of the buyer company were conducted and six interviews of supplier firm representatives. The data in the case of product business includes 13 interviews of the representatives of the particular buyer organization and two interviews of supplier firm's representatives. The interviews lasted about 1-2 hours and they were recorded and transcribed afterwards. The empirical data was analysed through classifying the data according to the theoretical pre-understanding. This included the categorising of the data according to the customer perceived benefits and customer perceived sacrifices. A second round of categorising was conducted in order to identify the different types of benefits and sacrifices. Thus the second round of categorising was more data driven where as the first was a theoretical categorising. After identifying the different types of customer perceived benefits and sacrifices, we conducted a cross-case analysis in order to find out, how the different value elements interplay within the two different business logics. Next we will present the analysis of the two cases and describe the customer perceived value in them based on the sacrifices and benefits. After this, we will present a synthesising discussion of the both cases and suggest a framework for understanding the way business logics and value perception are interconnected.

Case studies of customer perceived value in software business

In next, we will discuss both of our cases, the project business and the product business case. In both of the cases, the customer is named as the Buyer company and the seller is referred as the supplier.

Case analysis of customer perceived value in project business

The first case represents project business logic. The object of exchange in the case is large automated production system that is based on integration of software and hardware as a total service solution. Through the automated production system, there is an aim of creating value for the customer by providing more efficient and effective production capabilities.

The Buyer company represents telecommunications sector and as it is engaged in tough competition for customers, production capabilities play a fairly important role in the company's business processes as a whole. In fact, the Buyer company places a greater value on production capabilities that enable flexible production processes by providing the possibility of using a single production line for both mass production and production of customised products. Thus, no separate production lines for different product variations are necessary and the customer is able to achieve savings in line investments and in floor space, and to attain shorter production times.

Based on the interviews, the Supplier company of the system solution has been able to provide general information on its value creation potential; thus, a general-level value proposition has been developed and communicated among the customer, i.e. the Buyer company. However, there were also some special things that the Buyer company valued a lot, and, furthermore, these things could in fact be provided by the supplier and the then-current version of its system solution. Yet these special wishes weren't communicated between the supplier and the Buyer company well enough. The problem was two-sided: the Buyer company wasn't stating what kind of special value they expected from the system solution, and the supplier had not informed the customer well enough of the new developments of the system solution that could indeed offer the extra features the customer desired. One such special feature was component-level tracking, which was valued by all the interviewees. For some reason, however, the value placed on this feature was not recognized by the supplier. We can argue that such problems identifying the things that customers really value are of course related to the nature of the relationship, its closeness, and also sharing of information between the parties in the relationship. In this case relationship, there were problems in the closeness of the relationship even though close relationships are usually preferred in project business.

In order to stay competitive in the project business, the supplier should also be able to provide solutions that the Buyer company itself is not even aware of yet. However, to enable such solution provisioning, the supplier should be so close to the customer that it has a thorough understanding of the customer's value creation processes. By contrast, in the case relationship there were lots of changes inside the supplier company in terms of the people who had contact with the customers. The changes did cause a decrease in understanding of customers' value creation processes within the supplier company. Additionally, the many personnel changes at the supplier led to decreased customer satisfaction.

In realizing the perceived value as a trade-off between benefits and sacrifices in both monetary and non-monetary terms, the system solution can benefit the Buyer company in the form of more efficient and effective production of its own products. This benefit could be measured in monetary terms, but it also includes value elements that are non-monetary in nature or at least whose benefits are not so easily measured in monetary terms. The main difficulty in measuring 'more effective production' in strictly monetary terms is that the benefits are not always immediate and/or easy to predict. For example, if the customer acquires the system solution mainly because it can provide the ability for component-level tracking, the benefits of the investment become real only if there occurs a real need for component-level tracking. In other words, the benefit of the feature provided by the system solution becomes real in the event of problems during production, in particular involving defective components.

In practice, however, the Buyer company expected that the supplier could provide fairly exact monetary calculations concerning the savings achieved by an automated production line compared to manual production. This is especially true of the 'core package' of the system solution, representing the basic functionalities offered by an automated production line. By contrast, in the case of the more advanced, additional features and functionalities, the role of exact monetary calculations as bases for value proposition and sales arguments diminishes.

It was also identified, from the empirical data, that besides expecting direct value in the form of more effective and efficient production, the Buyer company was also expecting indirect value from the supplier in the form of reduced activity requirements, as interaction with several suppliers decreases when the whole system solution is acquired from a single actor. However, this was unfortunately something in which the supplier had not been very successful.

The Buyer company's interviewees discussed the value created for their company by the supplier through identifying different activities. In particular, they brought up activities, or lack of activities, taken by the supplier in their shared relationship history with which they weren't pleased. These were activities that could have been identified and taken into account by the supplier if it had more precisely identified the value creation processes of its customer. One of these was indeed the sharing of information. Customer felt that, although it wanted to interact only with the supplier as the system solution provider, they were several times forced to contact the supplier's subcontractors, too, in order to get problems solved. Thus, customer would have valued the possibility of decreasing the amount of interaction with several actors during the project, but this could not be provided by the supplier in practice.

In the following Table 1 we will present the summary of the analysis of the value benefits and sacrifices perceived by the customer in the case of product business logic.

In the case project business the biggest benefit that the customer was expected to achieve from the relationship with the single automation system supplier was savings in time when everything was got from single supplier and through wide project delivery. However, this benefit seemed not to be realized, as there were a lot of complexities related to this. First of all, a broad project delivery is not usually possible to be created and implemented only by one actor and thus there is nevertheless a need for a broad network of subcontractors. In our

project business case the supplier was not able to handle this wide network by its own, and thus the buyer company as the customer was nevertheless forced to be in contact with other suppliers and subcontractors e.g. in case something went wrong in the project. Secondly, even though a potential benefit from the project relationship could be born from the close relationship between the customer and the supplier in form of overall supporting of the other party's value creation process, this did not happen in the studied case. Thus it seems that we cannot automatically assume that project business means close relationship with lots of benefits in a project business environment. It can be even vice versa, if the project does not success for some reason, the relationship counterparts may even end up to have an arm's length relationship without no kind of real understanding of the other's business aims and value creation processes.

Concerning the sacrifices, the main elements identified included schedule problems and challenges in committing to the supplier even in cases where the supplier was in fact not able to offer a complete solution.

Table 1. Identified value elements from the project business case

	Value elements	Complexity of the customer's perception
Benefits	Total system solution from single supplier	Very high – reduced number of activities was aimed, but not achieved. Too complex and inexactly defined objective and thus led to ambiguity.
	Deeper understanding and support of the customer's overall value creation process	High – relationship was labeled as close one, but did not realize to deep interaction, trust and support of the other party's value creation process.
Sacrifices	Schedule problems	Low – the schedule problems were caused by the project based delivery, but they were rather expected and did not cause severe problems.
	Committing to the supplier	Rather low – customer perceived as the biggest sacrifice the commitment to a single supplier that wasn't always ready to offer a turn-to-key solution that was the ultimate aim of the customer. Still they wanted to continue co-operation due to long shared history.

Case analysis of customer perceived value in product business

The second case represents the product business logic and involves a large buyer organization from the Finnish ICT sector. The company produced telecommunications equipment for industrial customers and its products included both software and hardware. The buyer had a long experience on buying software from sub-contractors and other types of industrial suppliers. Operating as a buyer in software product business logic, however, was a rather new way of buying software for the organization. The relationship with the supplier was developed

around an operating system software product, which was included into the buyer's product as a software component. The most distinctive feature of software component was that the source code was not available to the customer organization, and further development of the component was not under the control of the buyer. The supplier company was a middle-sized company and had adopted strongly the product business logic by diversifying the organization into software product division and professional services division. The relationship between the supplier and the buyer company had existed for a rather long time and it included a several purchases of different versions of the software products as well as different types of products.

With respect to the value benefits perceived by the buyer organization, based on the data, one of the most important benefits that the interviewees raised up was the minimizing the overall development and maintenance costs of software through the purchase of the particular software product in question. Another important benefit was related to the lack of software developers; by using external solutions the buyer company was able to focus on more central areas of development in their software engineering. Thus, the alternative was to do the particular piece of software by themselves which illustrates the differential value experienced. The buyer company also saw that by using external solution they were able to reduce some risks associated with software development as the software was developed by a firm whose core competencies lay in this particular field of software engineering. Furthermore, as other customers also use the component, possibly even competitors, quality of the component is regarded as being higher. An important benefit in using software component was also the possibility of attaining shorter time-to-market for the actual products as they did not need to make everything by themselves. The case company had also recently adopted component based software engineering principle, meaning that it was in their strategy to increase the use of components in their software systems. The increasing opening and standardization of interfaces in telecommunications equipment was essential factor in this.

The customer's perception of the value sacrifices was one of the most important challenges from the purchasing perspective. The Buyer company found it very difficult to understand all the costs that were related to buying and using the software products. In terms of buying process, Buyer company had difficulties in evaluating the components and potential suppliers. The contracting issues were very difficult mostly because both technical and purchasing related expertise were needed but the Buying company, however, was not able to smoothly integrate technical and legal people and intertwine their expertise. For example, it was very difficult to define the responsibilities between the parties of the relationship. As the software component became a part of the product of the customer, sold forward to customer's business-to-business customers, complex chains of responsibilities resulted. The possibilities of the buying customer to test and understand the component were limited due to their 'black-box' nature. From the supplier's perspective, it was very risky to accept a broad responsibility like this, since the supplier was not a very large company. In the case of failure these suppliers with large customer companies with big markets could easily be forced to bankruptcy due to massive claims for compensation. Pricing issues were also one of the most important issues that the interviewees were concerned about. All in all, the pricing of the software components was a difficult issue. There was a lack of understanding of how the costs and benefits of the components could be estimated. Suppliers had different means of pricing their components and related services, and the Buying company had severe difficulties in handling the different pricing strategies used by the alternative suppliers.

A lot of sacrifices were also related to the management of the maintenance and support of the component. For example, the Buyer company felt it was difficult to ensure the willingness of the supplier to fix the identified bugs in the software component as soon as possible is ensured through contract paragraphs. As the component was incorporated into the product in the software development phase, it was important that the component operated as it was supposed to operate, or otherwise the whole product development project could be delayed. The suppliers needed to be made committed to the processes of the customer e.g. through using royalties as a pricing strategy, so that it was in their interest to support the customer. Thus, the Buyer company felt that one of the challenges in using software components was to manage the component and the supplier relationship throughout the component's life cycle, even though the product development project originally needing it was finished.

Another important perspective besides the interface with the supplier that needed to be managed well in relation to after-purchase issues was to organize the management of the component internally. As the Buyer company also had other divisions in other locations that were using the same component provided by the same supplier, some kind of co-ordination needed to be organized inside the company. Also, the fact that the purchased components could possibly be used in subsequent product development projects was an important factor emphasizing the importance of internal management of the component. Also, in relation to the new versions of the component, managing the new releases so that the needs of every project using the component are taken into account was considered to be important.

In the following Table 2 we will present the summary of the analysis of the value benefits perceived by the customer in the case of product business logic. We identified three main cost benefits compared to alternative solutions, ensured technological quality and the way the purchase was in accordance with the strategy of the company, meaning that they had decided to pursue an increase in the component use. From the customer's perspective, all of these were rather easy to perceive and their complexity to the customer was not particularly high. The sacrifices in the product business case, on the other hand, were rather numerous and complex. Firstly, the evaluation and comparison of alternative solutions and components was seen as difficult, contracting as well as pricing procedures were not established in the market and they have severe difficulties in making the supplier committed to the co-operation due to the product business logic. Finally, this resulted in huge difficulties in managing the lifecycle of the component internally but also externally in terms of new versions and future development.

Table 2. Identified value elements from the product business case

	Value elements	Complexity of the customer's perception
Benefits	Cost benefits compared to alternative solutions	Low – it was easy to estimate the needed workforce for alternative own development.
	Technological quality ensured	Rather low – the other customers using the same component were easily identifiable on the basis of supplier's reference marketing.
	Accordance with strategy	Low – increasing the use of component was a clear strategic aim.
Sacrifices	Evaluation & comparison difficulties	Rather high – technical evaluation typically manageable but comparison between very different types of solutions was difficult.
	Complexities in contracting	High – no standard procedures for contracting internally (unclear roles between engineering and legal staff) nor standard contract templates available.
	Pricing mechanisms not established	High – suppliers used various different pricing strategies and customer had difficulties in evaluating their impacts (e.g. fixed sum, licensing, royalties etc.).
	Committing the supplier	High – business logic based on idea of simple interfaces and even arms-length relationships but in practice long-term cooperation needed.
	Management of the component life-cycle	Rather High – no procedures for managing the lifecycle of the component internally but also externally in terms of new versions and future development.

Business logic and value perception

Next we will synthesize the findings from the two case studies in order to find out how the business logic influences on the customer's perception of value. To begin, it is clear that the two business logics relevant in software business have an impact on the customer's value perception as illustrated in the two case analyses above. The identified value benefits from the cases emerged from the data and thus they are strongly empirically driven. Also, similarities of the elements between the two cases are difficult to identify. All in all, in the project business case, it seems that the approach to the co-operation with the supplier is a very holistic one in the sense that a lot of reliance is given to the supplier. Where as in the product business case the relationship with the supplier seemed to be a lot more difficult. The relationship fluctuates between the arms-length and cooperative forms and the parties' perception of the cooperation seem to be differing.

In the project business case it seems that the identified sacrifices were manageable to the customer. Even though there were some central sacrifices like the ambiguities in scheduling the project and controlling the overall supplier and subcontractor network, these sacrifices were still rather straightforward and in the end, easy to accept and adjust. However, in the project business case the complexity of perceiving the benefits related to the project and the relationship with the supplier was visible. The customer was waiting to have an easy solution

from the supplier in the form of a total system solution, but this aim did not realize in the end. In fact, the customer had difficulties to identify any kind of benefits after the project and also, from the overall relationship with the specific supplier. Furthermore, there were issues in the relationship that the customer would have liked to have from the supplier and from the total project delivery, but they were not able to articulate these wishes to the supplier. What is even more surprising, the supplier and the system solution already included these kinds of benefits, e.g. like a component level tracking ability, but they did not consider it as an important one and thus did not market and offer the benefit for the customer. Thus, even though the relationship between the customer and the supplier was characterized generally as “close” relationship, it did not possess such features as trust and effective knowledge sharing, which generally can be seen as essential parts of a close business relationship.

In the case of the product business there were a lot of even surprising sacrifices and problems that the customer company faced. Concerning the benefits, however, these were rather easy for the customer to perceive and they had a lot of importance in the overall value for the customer. They had a clear idea that this form of cooperation with the software suppliers was beneficial and had a huge amount of potential in the future. The perceived sacrifices, on the other hand were clearly more challenging for the customer, although, as mentioned, the importance of these did not overcome the perceived benefits. In fact, the list of problems faced by the case company was very long as also illustrated in the number of identified sacrifices in the product business case. In addition to being numerous, the sacrifices were also of high complexity for the customer and required a lot of managerial attention to be solved. For example, the committing the supplier to the cooperation was indeed a very tricky one, since it originated from the underlying idea of the business logic: software exchanged as a standard products thus minimizing the efforts needed in managing the relationship with the supplier. Yet this did not realize oneself as various needs for closer cooperation emerged, e.g. in terms of future development of the software. Other complex sacrifices related to contracting and pricing for example, required intensive interaction between the counterparts. On the basis of our analysis of the value elements and the comparison of the two cases, we propose a following framework for understanding the way business logic influences on the customer’s value perception in the software business (see Figure 1.). This framework examines the complexities of the customers’ perceptions of the value elements in the two different logics. The framework has two dimensions, one illustrating the complexity of customers’ perception of the complexity of the benefits and another illustrating the perception of the complexity of sacrifices. Here we define the complexity as being high in cases where the customer experienced severe challenges in managing the issues involved in to the value element. Low complexity refers here to perceptions of the elements that did not include major development areas for the buyer company.

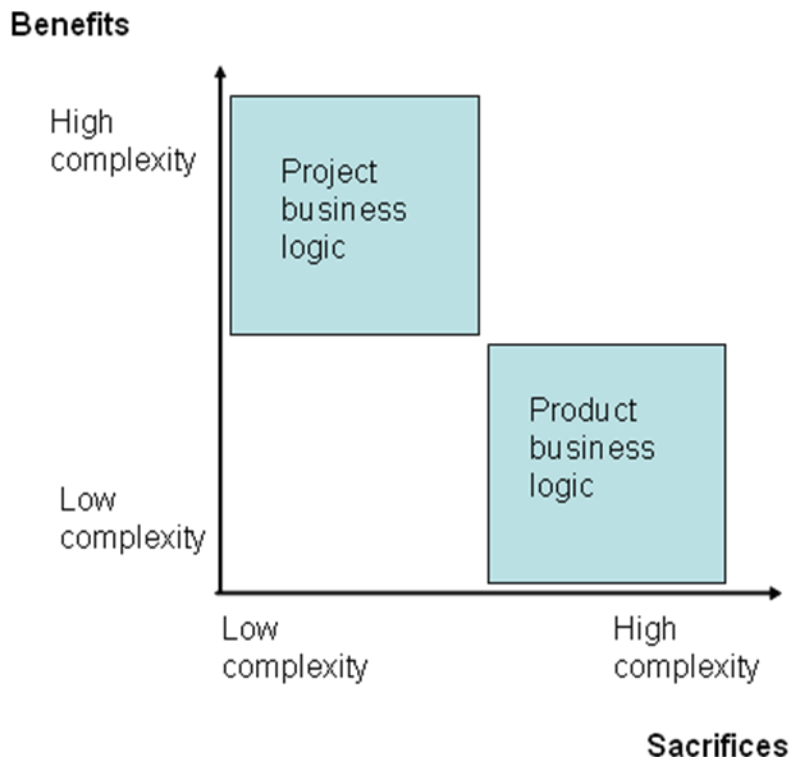


Figure 1. Software business logic and the complexity of customer’s value perception.

If we take a look at the perception of value benefits in **project business** case, we argue, that these included a considerable level of complexity for the customer. The underlying idea of the business logic was based on close and broad cooperation between the supplier and the customer which in turn created difficulties in terms of perceiving the totality of it all. Typically in these kinds of business relationships, a variety of different kinds of bonds, e.g. social, economic or technical are created between the counterpart and these create complexities if we consider how to perceive it all. Thus, we argue, that in software project business, high complexity exists in terms of customer’s perception of value benefits. On the other hand, concerning the value sacrifices in software project business, the identified elements represented important yet not that troublesome issues for the company. In our case, e.g. the schedule problems emerged as essential value sacrifices but it was clear to the customer, that with a more careful planning these kinds of challenges could have been overcome. Thus, we located the project business logic in the low end of the dimension of complexity of the customer’s perception of value sacrifices.

In the **product business case**, the value benefits were rather easy to identify and not considered any major managerial challenges for the case company. Therefore, we can place the product business at the low end of the complexity of the value sacrifice continuum. On the other hand, the value sacrifices presented major managerial problems for the customer company and solving these required intensive interaction with the supplier (e.g. in terms of pricing and contracting) but also internally between different units of the company (e.g. in terms of legal department in pricing and contracting and globally different units in terms of

managing the component life-cycle). Therefore, we can place the software product business logic to the high end of the second dimension concerning the complexity of the perception of the sacrifices.

Conclusions

This paper has addressed the concept of perceived customer value in a specific empirical context, the software business. We aimed to find out how customer perceived value can be understood in the software business and how the business logic is intertwined with the customer's perception of value. With respect to the first part of the question, concerning the understanding of the customer perceived value in the software business; we identified the different value elements from the two cases. We argue those elements within these particular cases enable us to examine the value perceived by the customer and that a supplier's efforts in developing marketing and relationship strategies could benefit from this understanding. Thus, we argue, that in the software project business, customer perceived value includes benefits related to acquiring a total system solution from a single supplier and that supplier having a deeper understanding of and ability to support the customer's overall value creation process. Sacrifices include issues such as schedule problems and increasing the commitment to the supplier.

The current study establishes that different value elements are highly context-dependent. Thus, our results are in line with the existing research on customer perceived value in different contexts, as it indeed seems that the industry context and the business logic does have an impact on the value perception and the types of value benefits and sacrifices the customers perceive. Our strategy in identifying the elements was empirically driven as we did not use any theoretically predetermined classification but let the elements emerge rather freely from the data. This of course further emphasized the context-dependency of multifaceted values. However, the way our study involved one industry context (the software industry) but two independent cases representing different business logics within the same industry brings forth the importance of the context: value perceptions in these two cases clearly differed despite the industry context being the same. This enabled us to draw the conclusion that business logic does indeed have an impact on the value perception of the customer.

The second part of our research question dealt with the connection between the business logic and the value perception and in that context we presented a two-dimensional framework illustrating the level of complexity of the customer's perception of sacrifices and benefits in the two business logics studied. This leads to our conclusion that software business logics are intertwined with the customer's value perception through complexity of perception of the value of benefits and sacrifices.

The framework does not of course fully explain the interconnection between the business logic and value perception, but it illustrates in a simple way the way these two business logics result in different types of value perceptions. The contribution of the framework in terms of managerial relevance is connected to the management of multiple business logics or those hybrid ones combining elements from project and product businesses. In terms of understanding the customer and striving towards creating value for that customer the framework illustrates the need to carefully consider the role and nature of the elements in the

two logics. A company aiming to move from the project business towards the product business needs to understand the complexities of the value perception and alter its marketing strategies and customer communication accordingly.

One of our key findings concerned the way business logic influences the value perception of the customer in the software business. This suggests that in business logics combining the two logics, the value perception of the customer has its distinct complexities. One of the avenues of future research within this theme really should involve an examination of the hybrid modes of software business logics and the value perceived by the customers within those contexts.

To evaluate the present study, we used the criteria for trustworthiness developed by Lincoln and Guba (1985). To increase the dependability of our study, we have carefully conducted our research in a logical way and made our analysis process as traceable as possible. Transferability has been generated through explaining the theoretical approaches we have used. The presented results can be transferred to other high-technology industry contexts where similar types of business logics exist. To enable transferability, we have also carefully described the empirical context of the study and the two studied case companies. With respect to ensuring the credibility, the present study employs our previously-acquired knowledge of customer perceived value in business relationships. Moreover, we have collected the data so that it acceptably represents the research phenomena of the value perceived by the buyer companies. Finally, with respect to conformability, we have put effort into making the chain of evidence visible in the analysis of the empirical data. The confirmability of the interpretations was also improved by creating a study database. The database includes the interview transcripts and research notes that retrace the development of the analysis over time.

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