How to deliver value to customers with latent needs in a business-to-business project delivery context: empirical illustration from the construction industry

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Abstract

Providing value for the customer organization through the realization of its needs is often difficult in bespoke B2B project deliveries. Delivering value becomes even more challenging in situations, where the customer organization is unable to clearly explicate its needs or possesses latent needs that it is not even aware of. The latter may often be the case when the customer organization is not experienced in buying projects, or does not have clearly defined processes for this activity. To be able to overcome these difficulties, the supplying organization and the other actors in the network that jointly delivers the project need novel approaches for systematically identifying the requirements of the customer and translating these requirements as the scope of the project delivery. This paper discusses the difficulties and obstacles that are related to identifying and fulfilling customer needs in the context of B2B project deliveries. Empirical evidence from the construction industry is used to illustrate the existence and potential implications of these problems. Finally, theoretical implications are drawn and managerial recommendations are presented to overcome some of these difficulties through closer co-operation with customers and improved coordination and communication within the supplying network of organizations.

Introduction

In order to provide a customer organization superior value[1] through the delivery of a project and to promote repeated purchases, it is often not sufficient that the project delivered by the supplier organization (or a wider network of organizations) successfully meets the scope, time, and cost objectives that are jointly determined by the supplier and customer. A successful project needs to benefit the customer in such a way that generates value and if the scope and other objectives set for the project do not accurately match the needs of the customer, some of the value generation potential for the customer cannot be realized. This may be the case when the customer has latent needs, i.e. needs that the customer cannot explicate to the supplier or needs that the customer is not even aware of (Slater and Narver 2000; Wagner and Hansen 2004).

The needs of any customer can be conceptually categorized as *explicit* and *latent* needs. Explicit needs are defined here as "*needs that the customer is aware of and can relatively easily communicate to the supplier*". In this paper, latent needs are defined as "*needs that the customer is not aware of and needs that the customer cannot communicate to the supplier with relative ease."* Thus, latent needs of the customer are effectively not visible to the supplier and in some cases not even visible to

[1] The concept of value can be (and is) understood in many different ways (see. e.g. Möller and Törrönen, 2003). In this paper the concept of customer value is considered a synonym to *direct economic benefit created for the customer*, and for example, many indirect value-functions, such as innovation, or access functions are omitted.

the customer. Fortunately, with effort latent needs can often be transformed into explicit needs as will be discussed in later sections if this paper. The sum of explicit and latent needs can considered as the aggregate (entire) needs of the customer. The relative appearance and importance of explicit and latent needs is likely to vary significantly in different empirical settings. For example, if the customer is buying a rather simple product or service as, for example, cleaning services, it is likely that relatively few latent needs are present. When complex combinations of products and services, such as enterprise resource planning systems, are procured, it can often be expected latent needs are present to a significant degree. It also needs to be noted that it may not be feasible for a supplier to cover all of the customer's needs as fulfilling some of them may cost more than the amount of value created for the customer. The focus of any delivery project should *not* be on the fulfillment of customer needs, but on creating customer value through fulfillment of the identified, correct needs.

The question of fulfilling latent needs becomes even more difficult, when the project that is delivered is eventually a means to fulfill the needs of the customer's customers (Kärkkäinen et al. 2003). This may be the case, for example, in the construction industry, where the project that is delivered to the real estate owner is often a finished building that the owner then rents out to its own user-customers (which may also possess latent needs). Anderson and Narus (2004) also stress the importance of the willingness and ability of the supplier to tailor offerings that match the needs of the customer exactly and refer to this strategy of close cooperation with the customer as *customer intimacy*.

Discovering the latent needs of the customer can clearly be considered important, but it is not a sufficient condition to ensure the delivery of superior customer value. The needs of the customer have to be translated into the scope, cost and time objectives of the project. This translation, that is typically accomplished during the design phase of the project (PMBOK 1996), is often problematic as the supplier may fail to document some of the requirements of the customer or may intentionally or unintentionally exclude some of them (Huovila & Serén 1998). Finally, in order to be able to provider the customer superior value, the supplier, or a network of supplying organizations, needs to be able to convert the documented needs of the customer into a concrete deliverable. This may or may not be accomplished during the implementation phase of the project (PMBOK 1996). As projects tend to include several interdependent actors with interdependent tasks, the coordination of work is often highly difficult (Håkansson and Jahre 2004) and problems related to coordination may severely limit the ability of the supplier to provide the customer value. To summarize the previous discussion, the successful execution of the following phases is required to provide the customer superior value:

- The customer's needs (explicit and latent) have to be identified successfully (assessment of needs)
- The customer's needs have to be successfully translated as the scope, time, and cost objectives of the project (planning and design phases)
- The project has to be delivered in accordance to set objectives (delivery or project implementation phase)

As previously discussed, there exists inherent difficulty in all of the previous three phases and thus it can be concluded that delivering superior value to customers is often extremely challenging. To improve the current situation from both a theoretical and managerial perspective, this paper seeks answers to the following two research questions:

- What are the factors that hinder value delivery to customers that possess latent needs in the need assessment, design and implementation phases of a project?
- How can these factors be reduced or removed?

In order to find answers to the above mentioned questions, the paper proceeds as follows. Firstly, the salient characteristics of projects are reviewed. Secondly, the marketing and purchasing of projects is discussed to further clarify the interfaces between the customer and supplier organizations. Thirdly, the delivery of projects is reviewed. Key challenges for value creation are identified from all of these streams of research. After the literature review, an empirical case from the construction industry is presented. Construction industry arguably provides a fruitful context for empirical observation since it is essentially a project-based industry, where the value delivered to customers is highly dependent upon the ability of the supplier or supplying network to identify the needs of the customer and respond to these needs through the delivery of a construction project, e.g. a finished building. After the empirical illustration, the managerial implications of the paper are presented in the form of a model of value

creation for customers with latent needs that is derived from the literature and empirical findings. Finally, theoretical implications of the paper are presented, limitations of the paper discussed and further avenues for research are opened up. A concluding section sums up the essentials of this paper.

Characteristics of projects

Projects are complex and unique endeavors that typically require the collaboration of several heterogeneous organizations (actors). The capabilities and resources possessed by the individual actors are combined to deliver the customer a concrete project.

Many projects delivered in B2B markets can be rather accurately characterized with the Discontinuity, Uniqueness, Complexity framework (Mandják and Vares 1998) that was created to highlight the distinguishing features of project marketing and systems selling. In the framework *discontinuity* refers to the discontinuity in demand. After a project is delivered it is typical that the same customer will not buy another for several years and the relationship can become a "sleeping relationship" (Hadjikhani 1996). This poses challenges for managing the relationship towards the customer and it may reduce the supplier's motivation to invest resources in thoroughly assessing the needs of the customer. *Uniqueness* characterizes projects as no two projects are exactly alike. The technical specifications of the projects are often tailored to each customer's individual needs and the specifications that are created for one customer can often not be used in a project delivered to another customer. This poses significant challenges for inter-project learning (Barlow and Jashapara 1998; Barlow 2000; Disterer 2002). Further, the financial and socio-economical conditions tend to differ highly between projects and for example, financial terms negotiated for one project cannot be "re-used" in another project. *Complexity* also characterizes projects accurately, since they tend to require the contribution of several organizations and often contain several interrelated parts or systems (Hobday 1997, 2000).

The work of Mike Hobday (1997, 2000) focusing on complex industrial products and systems (CoPS) contributes significantly to our understanding of projects as the organizations that deliver CoPS are typically project-based organizations and the examples of CoPS deliveries (e.g. chemical plants, missile systems, offshore production platforms) are very alike the examples given in the project management literature (e.g. Morris 1994). Hobday emphasizes the importance of managing the interconnections between components of the delivered system or project. These interconnections require knowledge that is related to how different components are integrated and linked to each other. Further, the delivery of CoPS often contains feedback loops as modifications in one production stage may require alterations to overall system architectures. Feedback loops are typical, for example, in the construction industry, where design changes in one element of the building (e.g. dimensions) often affect several other elements (HVAC, electrical design). In addition to the fact that there are interdependencies between subsystems, there may also be considerable overlaps between stages of a project (Dubois and Gadde 2001), further complicating the delivery of value for the customer.

The marketing and purchasing of projects

The marketing and purchasing of projects in B2B markets differs substantially form marketing and purchasing raw materials or relatively simple products, i.e. products that enable the fulfillment of the customers needs via a relatively standardized item such as a laptop computer, whose performance is relatively easily demonstrated by the supplier and known to the customer. The project marketing discourse (see e.g. Cova and Salle, 2004, Cova et al. 2002; Cova and Salle 2005) is primarily concerned with how projects are marketed to potential customers, and thus focuses attention on the interfaces between the buyer and the seller and the consequences of the project for the buyer. When contrasting project management with project marketing, project management focuses primarily on the successful execution of the project as project marketing addresses the question of how to deliver value to the customer over a long period of time through the delivery of projects.

Two approaches rather central to project marketing are the deterministic and constructivist approach to marketing projects (Cova and Hoskins 1997). In short, the deterministic approach emphasizes the anticipation of the customer's needs and then responding to them through the delivery of projects as the constructivist approach emphasizes the importance of setting the goals of the project in tight cooperation between the customer and the supplier. In the constructivist approach, the supplier attempts to define the scope of the project and "rules of the game" together with the customer in a tightly cooperative process of joint construction of the project (Cova et al. 2002). These two alternative approaches may have very significant implications when supplying projects in a situation where the customer has latent needs. It could be expected that the deterministic approach is less effective in dis-

covering latent needs that the constructivist approach, since in the former, the supplier takes the project more or less as given and does not attempt to discover the unexpressed or latent needs of the customer. The constructivist approach, on the other hand, could potentially facilitate the identification of latent needs as it is essentially based on tight cooperation and joint project definition between the customer and the supplier.

The concept of *milieu* introduced by Cova et al. (2002) views B2B markets as networks of actors affect or may potentially affect project marketing and stresses the importance of the relationships between these actors rather than the actors themselves (Cova and Salle 2005). Milieu consists of:

- A geographically limited territory
- A network of heterogeneous actors, related to each other within this territory
- A model constructed and shared by these actors
- A set of rules and norms regulating the interaction between these actors

The concept of milieu is used to view the project that is delivered to the customer from a viewpoint that in addition to the main supplier or main contractor includes also other relevant actors, such as subcontractors, government actors, external consultants, etc. Milieu may be especially relevant in a situation where the customer has latent needs, as it enables a holistic view of the relevant actors that may have some bearing on how the customers' needs are fulfilled. For example, the subcontractors may have expertise in identifying some components of the customer's aggregate needs that the main contractor cannot identify. By taking into consideration all the relevant actors of the entire network of actors that affects the value creation for the customer, the concept of milieu may help to improve the identification and fulfillment of the customer's explicit as well as latent needs.

Organizational buying tends to be a lot more complex than consumer buying as more individuals from different departments of the organization are involved in the buying process (Morris et al. 1999). Individuals may possess one or more of the following roles: chooser, payer, user, influencer, decider, gatekeeper, approver, and initiator (Kotler 1997). Together the individuals affecting the purchasing decision form a *buying center* that is often characterized by coalitions with differing interests, views, and power (Robinson et al. 1967; Webster 1984; Morris et al. 1999, Ghingold and Wilson 1998; Dadzie et al. 1999). Further, organizations may choose to include external individuals (e.g. consultants) to their buying centers (Dawes et al. 1996). As the composition of the buying center and the techniques used to assess suppliers and to determine the needs of the buying organization vary among organizations, it is likely that the ability of organizations to make accurate purchasing related decisions varies as well. Some organizations have effective and well structured practices for identifying the latent needs of the organization, transforming them into explicit form and selecting the most suitable supplier to fulfill them and some organizations have no structured processes in place and identify their needs and select the supplier on a more or less ad-hoc basis.

From the supplier's perspective, buying centers are both important and difficult as suppliers need to be able to identify the key decision makers and then to successfully convince them to purchase from the supplier (Ghingold and Wilson 1998). Based on the previous discussion, if the customer has latent needs, there are two ways that potential customer value may be destroyed in the purchasing process. Firstly, the buying center of the customer may not be able to identify the needs of its parent organization in a detailed and accurate manner. This may often be the case, if the customer organization has no planned processes for buying projects or is buying something that it is not familiar with e.g. a corporation that is buying a new headquarters building for the first time. Secondly, the supplying organization may fail to identify the key decision makers of the customer's buying center and thus fail to obtain important needs related information that is related to the project that will be delivered or even fail in marketing the project to the customer at all.

Campbell (1985) classified potential purchasing and selling strategies in industrial markets as *competitive*, *cooperative*, and *command* strategies and pointed out that in some cases the strategies of the supplier and customer may be in conflict. For example, if the marketing strategy of the supplier is cooperative and the purchasing strategy of the buyer is command, this results in a mismatch. In the context of project marketing, the supplier with a cooperative strategy is likely to strive towards joint construction of the project (Cova et al. 2002) as the buyer's approach is likely to be based on highly competitive tendering. As tendering is essentially based on explicating the needs of the buyer and then selecting the most suitable offer to fulfill them, it clearly is a mismatch with the concept of joint con-

struction of the project. If the marketing and purchasing strategies are in conflict, it can he hypothesized that some of the value creation potential for the customer is lost.

The delivery/realization of projects

The execution of the project that has been marketed to the customer is a complex process, typically involving several heterogeneous and complementary actors (e.g. main contractor, subcontractors/suppliers, consultants, experts, etc.). For the duration of the project delivery the actors form a temporary project network (Hellgren and Stjernberg 1995; Dubois and Gadde 2000; Ahola 2005) that is closely related to the more stable interorganizational network of actors that could be potentially selected for the project at hand (Hellgren and Stjernberg 1995). It is often the case that some of the organizations participating have also participated to previous, partly similar projects (Eccles 1981, Håkansson et al. 1999; Bengtson et al. 2001; Dubois and Gadde 2001) and may have formed close interorganizational relationships between the actors. These relationships may facilitate joint-problem solving and the flow of fine-grained information between the organizations that take part in the project delivery (Uzzi, 1997). Kerzner (1995) argues that project success is highly dependent on the existence of tight cooperation between the supplier and the customer. Joint-problem solving and fine-grained information transfer may potentially facilitate the identification of the customer's latent needs and enable the network to function more efficiently and thus create more value for the customer of the project. In addition to improving the probability of project success through cooperation between members of the network that delivers the project, Kerzner (1995) also emphasizes the importance of tight cooperation between the supplier and the customer throughout the project. If the project that is to be delivered includes a significant design phase, that is, the design is not entirely provided by the customer, these two mechanisms may have a significant effect on the quality of the created design as many alternative and not necessarily equally effective design routes typically exist.

Project deliveries typically involve all three types of interdependency discussed by Thompson (1967), pooled, sequential, and reciprocal (Håkansson and Jahre 2004). The reciprocal interdependencies pose the most difficult problems for project delivery, since they require the simultaneous participation of several actors in the given task. For example, in construction projects, and in many other CoPS projects, the design phase involves a high degree of reciprocal interdependency, as the different subsystems are linked together and a change in one subsystem may result in modifications to several or all other subsystems (Hobday 1997). The management of complex interdependencies pose challenges for creating superior value for the customer in the design and execution phases of the project.

Summary of the implications of the literature review

The following table (Table 1) summarizes the previous literature and presents the issues that were identified as potentially highly relevant from the viewpoint of delivering value to customers with latent needs in B2B project deliveries. From the table, it can be observed that some of the issues that were identified may also be highly relevant in the context of such projects where the customer has only few latent needs.

TABLE 1 – Issues that may affect value delivery potential for customers in B2B project deliveries

Issue	Potential implications for value delivery
Characteristics of projects	
Discontinuity-Uniqueness-Complexity framework (Mandják and Vares 1998)	-The discontinuity related to customer relationships may reduce suppliers' interest in committing resources to assessing customer needs. -Uniqueness may hinder inter-project learning
Interdependent subsystems (Hobday 1997, 2000)	-Complexities related to interdependent subsystems may negatively effect customer needs assessment and design phases of the project
The marketing and purchasing of projects	
Deterministic vs. constructivist approach to project marketing (Cova and Hoskins 1997)	-A seller utilizing the constructivist approach to project marketing may be more likely to successfully identify the latent needs of the customer
Concept of milieu (Cova et al. 2000)	-If the concept of milieu is understood and utilized by the selling organization, it may be more likely to con-

	sider relevant network actors (e.g. subcontractors, government agencies, etc.) in the marketing phase, improving the assessment of the customers needs
Buying Centers (Robinson et al. 1967; Webster 1984; Morris et al. 1999, Ghingold and Wilson 1998; Dadzie et al. 1999)	-If the customer organization does not have a well organized buying center, its ability to identify latent needs of the organization may be reduced -If the supplying organization is unable to identify the key decision makers in the buying organization's buying center, it may fail to identify the customer's needs or even fail to market the project at all
Match between marketing and purchasing strategies (Campbell, 1985)	-If marketing and purchasing strategies of the customer and supplier are in conflict, some of the value creation potential for the customer may be lost
The delivery of projects	
Long term interorganizational relationships between the project network actors (Hellgren and Stjernberg 1995; Dubois and Gadde 2000; Ahola 2005)	-Long term interorganizational relationships that have formed during previous projects delivered by the project network actors may facilitate coordination of work and joint problem solving between the actors, potentially improving the identification of the customer's latent needs
Interdependencies in project task coordination (Thompson 1967, Håkansson and Jahre 2004)	-The ability of the project network actors to coordinate work may affect the value creation potential for the customer in the design and execution phases of the project.

Empirical illustration

Construction industry context

The construction industry arguably provides a fruitful context for empirical observation for two reasons. Firstly, the industry has been criticized heavily for the constant inability of not being able to respond to the needs of its customers (Dulami et al. 1996). Secondly, the economic significance of the industry is enormous as it typically employs, directly or indirectly, over 10 per cent of the workforce of most developed nations and a significant amount of wealth is tied into its products (buildings, structures, etc.). For example, in excess of 50 per cent of Finnish national wealth is tied into products of the construction industry.

The construction industry can be characterized as a project-based, fragmented industry. Construction projects are planned and implemented in order to fulfill the needs of the customer organizations, which either buy or rent the finished buildings (and other structures), by combining the resources and capabilities of several organizations that are specialized in one distinct trade, e.g. architect, electrical design, contractor (Eccles 1981; Dubois and Gadde 2001). These organizations are very typically SMEs employing only a "handful" of people and thus the industry is not dominated by large actors[2]. Temporary project networks are formed to complete unique projects (Hellgren and Stjernberg 1995; Dubois and Gadde 2001), and several of the actors participating one project tend to participate also to the ensuing project (Eccles 1981; Håkansson et al. 1999; Bengtson et al. 2001; Dubois and Gadde 2001). This tendency by the main contractor to prefer proven subcontractors is likely to motivate the subcontractors to improve their inter-organizational working practices and may potentially facilitate customer-oriented behavior. However, the construction industry has been criticized extensively for its inefficiency and inability to respond to the needs of its customers (Cox and Thompson 1997; Dulami et al. 1996). Cox and Thompson (1997, p. 132) further characterize the industry as an industry with a "deep-rooted, traditionally adversarial culture" of opportunism and lack of trust. Thompson et al. (1998) characterize the relations between companies in the construction industry as dominantly arm's length with very limited attention to planning beyond the immediate project and Gann (1996) argues that the short-term orientation characterizing the industry leads to sub-optimization. These problems are likely to limit the value potential of the customers of the industry and need to be addressed.

[2] For example, over 70 per cent of the workforce of the Finnish construction industry is employed by SMEs.

Data gathering
Interviews were conducted at six organizations operating in the construction industry. The interviews were conducted as a part of a research and development effort with the broad goal of improving the success of construction projects by focusing on the problems that hinder their planning and implementation. One significant problem area under close scrutiny was that of integrating the needs of the customers (explicit and latent) into construction projects.

Three of the participating organizations were real estate owners, one organization provided architect services, one was a electrical design consultancy, and one was a consultancy providing HPAC (heating, plumbing, air-conditioning) design services. The participating organizations had been involved in several construction projects, and this had resulted in the development of rather close interorganizational relationships between the organizations. All of the participating organizations were SMEs and the relationships between the organizations can be characterized as highly interpersonal, typically represented as a social tie between the managing directors of two organizations.

During years 2004 and 2005 a total of seventeen interviews, each lasting between 45 minutes and three hours were conducted with these organizations. Written notes were taken during all interviews. Fifteen interviews from the total of seventeen were recorded and the written notes taken during the interviews were refined while listening through the recordings at a later point of time. The interviews were semi-structured (Eisenhardt and Bourgeois 1988), and focused primarily on the following topics (interviews were also supported by other questions that seemed fruitful to pursue at the time):

- What are the key actors, resources, and activities included in construction projects? -following the ARA model (Håkansson 1987; Håkansson and Johansson 1982; Håkansson and Snehota 1995)
- How are the explicit and latent needs of the customers integrated into the construction project?
- What are the relevant problems related to gathering the needs of the customer and integrating them into the project?
- How is the work coordinated among the project network actors (scheduling, change orders, etc.)?
- What are the key problems related to coordinating work among the actors?
- What is the contribution of each actor towards fulfilling the needs of the client?
- What are the long-term strategies of each individual project network actors? Do they contain joint-problem solving, joint process development, shared goals, or other partnering-related elements?

Analysis and results
The notes that were taken during the interviews and later refined by listening through the recordings formed the empirical material of this study. No company records or documents were used as they were either too general to support the interview data or were too confidential to be used in this study. The total amount of written notes generated from the interview data was in excess of 50 pages and to acquire a rich and holistic view of how customer needs are integrated into actual construction projects, the author decided to organize the data into three rather distinct phases (needs assessment, design and implementation) of the construction project. The contents of each of these phases were further clarified by creating tables of, for example, identified problems in each phase to improve the clarity and quality of analysis.

Phase one – customer needs assessment
The needs assessment phase aims to identify and document the needs of the customer organization (or organizations) of the construction project. The interviews revealed several difficulties that are related to assessing the customers' needs. Firstly, the methods that are typically used for identifying and documenting the needs of customers are at least partly outdated. For example, customers may be handed out cards describing the various rooms of a building and asked to fill in how many chairs, tables, electrical outlets, etc. they require. This is may be rather functional in a situation where the customer organization knows exactly what it wants, but according to the interviews this is, unfortunately, often not the case. Secondly, the interviews confirmed that many organizations do not have elaborate buying processes or buying centers in place. This often results to the problem that the views and opinions of only one or two persons' may represent the aggregate needs of the entire customer organization. In many organizations, the tasks and the requirements of these tasks vary significantly (e.g. the

requirements of a traveling salesman are often significantly different from those of person working in R&D). Thirdly, as construction projects are typically still marketed while the needs of the potential customers of the projects are assessed and the final go/no-go decision is made at a later point, the main contractor is often reluctant to invest anything beyond the acceptable minimum in assessing the needs of the potential, but not yet confirmed customers. This is a problem as the initial needs assessment phase to a great extent determines the scope of the project (as changes to the project scope are typically far more expensive at the later stages of the project). Fourthly, as the main contractor is often reluctant to spend resources on the initial phase of a yet unconfirmed project, external expertise in assessing customer needs, that would be available, is often not used. In the industry context where the interviewed actors operate, several companies are offering services for the detailed analysis of the space-related needs of an organization. These services tend to be far more elaborate than those typically used in construction projects and would, if utilized, provide a more thorough assessment of the customers' needs, especially if the customer has latent needs.

To conclude, during the customer needs assessment phase, the explicit and latent needs of the customer organization as a whole should be identified and clearly documented. In reality, even the explicit needs are not always completely documented and the latent needs are typically not even considered in a systematic manner.

Phase two – design

In the design phase the documented customer needs are converted into design specifications that are later realized in the implementation phase. From the perspective of creating value to the customers of the building project, the interviews pointed out several problem areas. Firstly, the documents that are generated in the needs assessment phase are rarely complete and need to be amended in the design phase. To accomplish this, the various designers (e.g. electrical design) often have to gather additional needs related information from the customers. Depending on how the project is organized, the designers either contact the customer directly or deal through the main contractor. If the communication goes through the main contractor, the additional delay that follows may create problems for coordinating the design work. On the other hand, if the designers are allowed to communicate directly with the customers, the main contractor is not always up-to-date on the design specifications. Secondly, if customer needs that were not successfully documented in the needs assessment phase, and are now discovered, this may lead to significant delays and additional costs in the design phase as some subsystems of the building may need to be re-designed. In construction projects involving several customers, as for example, in a business hotel, it is often the case that the main contractor manages to secure some of the "missing" customers in the design phase. These late-entry customers have needs that now need to be included into the design process parallel to the needs of the customers that were participating to the project already in the needs assessment phase. Thirdly, as the design phase is characterized by reciprocal interdependencies as several designers work simultaneously on different subsystems of the project, the interviews pointed out that coordinating design is a tremendous challenge. If changes made by one designer are not communicated clearly to other designers, which is often the case, this may lead to omitting some of the customers' requirements or even to defects in the implementation phase. To summarize, the interviews pointed out that there are several problem areas related to the design phase that can destroy customer value if not managed properly.

Phase three – implementation

In the implementation phase the designs that were created during the design phase are implemented into the form of a finished building. This phase typically involves several subcontractors and is coordinated by either the main contractor or an external consultancy hired for this purpose. The interviews revealed several problems that may hinder value creation for the customer or customers of the building. Firstly, the interviewees stressed the existence of problems related to work supervision and quality control. Secondly, as contractors are often paid on a lump-sum basis, they sometimes strive to reduce costs by substituting elements that were originally designed with solutions that are more suitable for them cost-wise. For example, the subcontractor may suggest that the air conditioning blower units should be substituted with cheaper alternatives. This may lead to the reduction of costs in the short term, but it often also leads to the increase in operating costs, as the new solutions are more costly to operate or maintain. If these costs are paid by the building users (customers), their share of the value generated in the building project is reduced. Thirdly, the interviewees pointed out problems related to taking the finished building into use. It is often the case that the customers are not instructed how to operate the building in an efficient manner. For example, the customer may remain unaware how to set the lighting to optimally support the work that is done in the building. It may even be the case that

the customer is unaware that how the lighting, air conditioning, heating, etc. settings affect the productivity of work that is done within the building. If the customer is unaware of these effects, they need to be considered as latent needs, as fulfilling them could create the customer value.

Managerial implications - Derived value model of superior value delivery

The empirical evidence clearly suggests that the delivery of value can fail in all of the three phases of the project (needs assessment, design, and implementation). In the empirical part, many potential obstacles to value delivery were detected that may severely reduce the creation of value to customers with *clearly specified, explicit needs*. However, the interview data also clearly illustrated that when the customer or customers have *latent needs,* superior value creation is even more challenging.

The following model (Figure 1) for superior value creation was derived based on the literature review and the analysis of the empirical case data. The primary goals of the model are twofold. Firstly, it attempts to illustrate projects and the actors that participate to them as an interorganizational project network, suggesting that the outcome of the project, and value that is delivered to the customer (or customers) is highly dependent upon the ability of these actors to work together and to overcome the difficulties that are related to the project. Secondly, the model aims to direct focus on those issues that appear most crucial from the viewpoint of delivering value to a customer with latent needs. A model that would emphasize superior (short term) value for the main contractor instead of the customer would definitely look somewhat different[3]. However, the ability of the network of actors to execute the project in such a manner that it provides value for the customer is arguably crucial and it can be expected that delivering superior value to customers often translates to future project opportunities, and profits also to the parties that are involved in the value delivery. The model does not include all relevant actors that are included in a typical project milieu (Cova et al. 2000). For example, government actors, pressure groups, etc. are left out for the sake of simplicity. The derived model focuses on projects that involve customers with latent (inexplicit) needs. In cases, where the customers' needs can be completely and explicitly documented in the initial stage of the project, the model may still prove partly useful. It may provide some benefits, because as discussed in the literature review, the documentation of the customers needs is not sufficient to guarantee that they will be met successfully in the design and implementation phases of the project.

[3] For example, if the main contractor would not see any future sales potential with its current customer, it would be much less inclined to direct efforts towards activities that aim to create superior value for the customer. Most organizations are not altruistic.

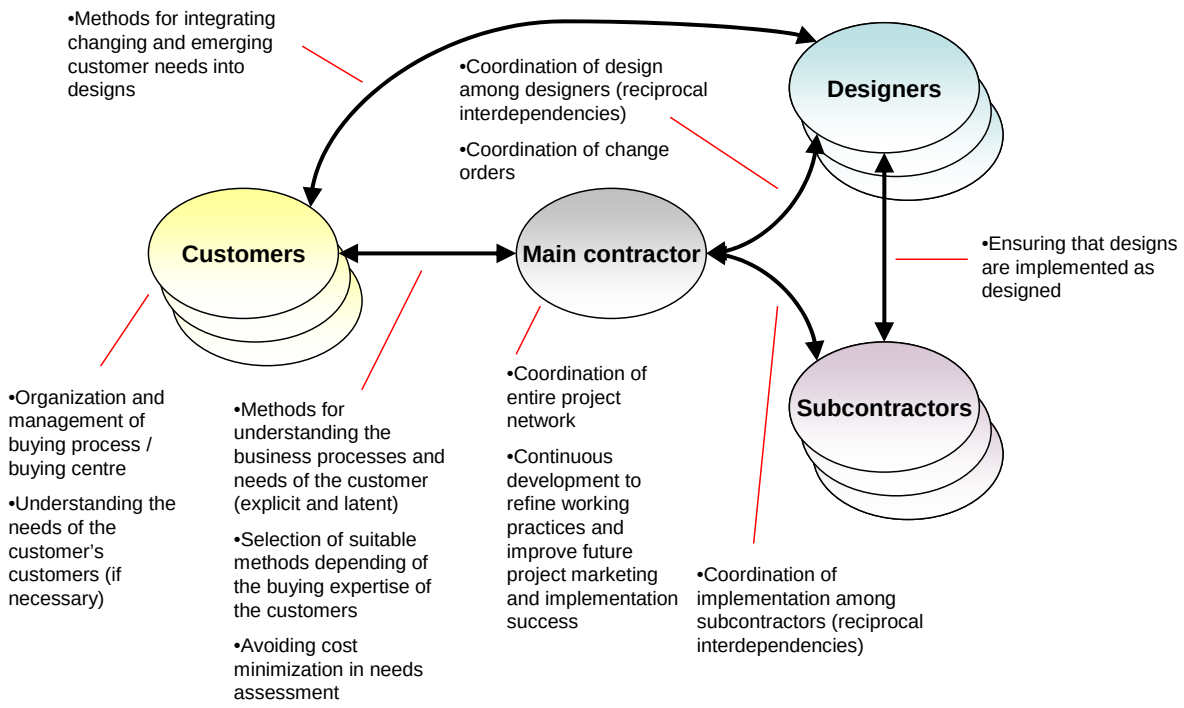

Figure 1 – Model for superior value delivery for customers with latent needs

In the needs assessment phase of the project it especially crucial that the main contractor understands the capabilities of the customers to explicate their needs and then selects the methods for customer needs assessment based on the expertise of the customer. In cases where the customer is well aware of its needs, traditional "tick box" methods may be adequate, but in cases where the existence of latent needs is probable, more elaborate methods, such as the use of an external consultancy to document the business processes of the customer and needs that are related to them, are advised. Further, if the project is eventually a means to fulfill the needs of the customer's customers, it needs to be ensured that also these needs are understood and documented. If it is likely that the customer has latent needs, costs should not be minimized in the needs assessment phase, as this is likely to result in omissions in the project scope. From the customer's point of view, in order to be able to buy projects that create value, emphasis needs to be put on improving the buying practices of the organization, especially if the project that is purchased is new to the buyer.

During the design phase, it is common that customers discover "new" needs (i.e. manage to transform some latent needs into explicit needs) that now need to be included in the project scope. In addition, if the project has several customers, it is often the case that new customers join the project and their needs now need to be included in the designs as well. To ensure that these changing and emerging needs are successfully integrated into the designs, the management of the interfaces between the designers and the customers is crucial. The interaction needs to be consistent and the emerging needs have to be documented and shared among the various designers in a systematic manner. Optionally the main contractor may act as the sole interface, between the customers, but in this case the interfaces between the main contractor and the designers become more complex. As the design phase tends to constantly involve systemic changes to existing designs that affect the work of other designers, the coordination of the design work becomes essential.

In the implementation phase, the most important interfaces are those between the various subcontractors. Interdependent work needs to be coordinated in an effective and error-free manner. In addition, the interfaces between the subcontractors and the main contractor and the interfaces between the subcontractors and the designers become important as adherence to design needs to be constantly monitored.

In order to be able to constantly deliver value to customers the (often main contractor led) network of supplying organizations needs to consider their processes also from a longitudinal point of view. As the ability to deliver value is most likely more dependent on the ability of the network actors to work

together than the capabilities of any single actor, honing inter-organizational practices and setting joint long-term goals becomes a crucial issue. This continuous relational development between the actors is likely to provide opportunities to strengthen trust and reduce optimism and thus facilitate the sharing of fine-grained information and joint problem solving. Long term relational development should however, not be "automatic" with all actors. Actors that are not willing are able to contribute to the long term success of the network as a whole should be substituted with such actors that can or will, when possible.

Theoretical implications

The empirical evidence supports earlier research that has pointed out that in order to succeed in B2B project deliveries, the need to identify and integrate the needs of the customer is crucial (Huovila & Serén 1998; Slater and Narver 2000; Kärkkäinen et al 2003; Wagner and Hansen 2004; Anderson and Narus 2004) and that delivering superior value to customers is more difficult when the customer has latent needs than it is when the customer can clearly explicate its needs to the seller. The discontinuity in supplier-customer relationships (Mandják and Vares 1998) was also emphasized in the study as it was very evident that the suppliers were reluctant to invest resources in thoroughly assessing the needs of the customers that were not likely to purchase again in the near future. Consistently with Hobday (1997, 2000) the study revealed significant difficulties in coordinating the reciprocally interdependent tasks in design and implementation phases of the project.

The highly competitive and tendering-based culture of the construction industry was found to limit organizations from utilizing the "joint construction of the project" (Cova et al. 2002) approach that, according to the interviews would be likely to facilitate the assessment of latent customer needs. Interviewed actors rarely considered connections between other actors in the project network, which is a likely cause for problems that were found in these interfaces (for example, the interface between the customer and the designers was typically more or less ignored by the main contractor). The empirical example also revealed that when the customer organization is purchasing something it is not familiar with from the past, the buying center of the customer is often incapable of delivering the exact needs of the client to the supplier. Further, the empirical evidence supported previous research on buying centers (Ghingold and Wilson 1998; Dadzie et al. 1999) as it indicated that the buying center may fail to represent the aggregate needs of the organization even if the needs are not latent as, for example, one person's opinion may represent the views of all his or hers subordinates that may have very different tasks. When viewing the empirical study from the viewpoint of Campbell's (1985) buyer and seller strategies the utilization of competitive tendering was evident. Cooperative strategies that would be likely to improve the identification and realization of the customers' need were identified as extremely rare.

From a long-term relational development viewpoint, the prevailing culture was observed to hinder the transfer of fine-grained information and joint problem solving (Uzzi 1997). In the empirical case, the more stable interorganizational network that consists of the actors that may participate to a given project (Hellgren and Stjernberg 1995; Dubois and Gadde 2000; Ahola 2005) was characterized by "positive" inter-organizational relationships (often manifested in the form of a social tie between the senior executives of two companies), but concrete efforts of jointly improving practices between two companies, or at the wider network level were rare. Table 2 summarizes how the empirical analysis connects to previously identified literature.

TABLE 2 – Contribution of empirical analysis to identified literature

Issue	Empirical observations in the case study
Characteristics of projects	
Discontinuity-Uniqueness-Complexity (DUC) framework (Mandják and Vares 1998)	-Main contractors reluctant to invest in thorough assessment of customer needs, because it is time consuming, expensive, and there repurchases are not evident -Inter project learning difficult because of culture that is based on competitive tendering discourages inter-organizational development efforts
Interdependent subsystems (Hobday 1997, 2000)	-Creates difficulties in coordinating design work and difficulties in integrating "new" customer needs identified in the design phase to the needs identified in the needs assessment phase
The marketing and purchasing of projects	
Deterministic vs. constructivist approach to project marketing (Cova and Hoskins 1997)	-Constructivist approach is not commonly used, but would be likely to support the identification of latent customer needs
Concept of milieu (Cova et al. 2000)	-Project network actors rarely considered the links between other actors or the milieu as-a-whole. For example, the main contactors were not highly concerned of the links between the designers and the client.
Buying Centers (Robinson et al. 1967; Webster 1984; Morris et al. 1999, Ghingold and Wilson 1998; Dadzie et al. 1999)	-Buying centers of customer organizations often poorly structured, especially if the project is new to the buyer -Customer organizations typically have problems with gathering the needs of various internal stakeholders
Match between marketing and purchasing strategies (Campbell, 1985)	-Competitive strategies common in the construction industry adversarial to close co-operation and identification of latent needs. Cooperative strategies not identified.
The delivery of projects	
Long term interorganizational relationships between the project network actors (Hellgren and Stjernberg 1995; Dubois and Gadde 2000; Ahola 2005)	-Construction industry culture limits the interest of actors to consider joint long-term oriented development activities with other actors. This is likely to limit the innovativeness and value creating potential of the industry.
Interdependencies in project task coordination (Thompson 1967, Håkansson and Jahre 2004)	-Complex reciprocal interdependencies, especially during design and implementation phases of the project. Problems related to interdependencies destroy customer value.

Limitations of the study

The empirical section of this paper focused on one specific industry context, the construction industry. It is not clear what is the extent of generalizability of the theoretical implications or the value delivery model that was derived to other project-based industries (e.g. shipbuilding) or to industries where the buyers have generally developed more elaborate buying practices (as may be the case for example, in the paper industry, where buying paper factories is a rather standardized process with clearly explicated needs). Further, as the participants of the study were all SMEs, the results can not be directly generalized to large enterprises that often have departments set up especially for buying and presumably more elaborate needs identification and buying practices in place. A significant limitation of the empirical study is the fact that no customer organizations were interviewed. It is likely that the involvement of customer organizations would have provided detailed information on the buying practices related to B2B projects and enriched the empirical material even further.

Further avenues for research

It is not clear how significant is the existence of latent needs in the context of project-based industries. The empirical evidence gathered for this paper suggests that it is common enough, at least in the construction industry to warrant further inquiries. The evident problem with studying latent needs is the inherent difficulty in it as the focus of the research is on finding out if organizations require something that they are not aware of. Presumably the only way to answer this question is to acquire a deep understanding of the business processes and individual tasks carried in organizations and then identify if the requirements of these are included in the purchasing decisions made in the organizations. Further, it would be interesting to discover how common and significant are latent needs in different B2B industry contexts and where would the potential differences among industries lie.

The practical validity of the model for delivering superior value presented in this paper still needs to be tested. The model was created by combining theory and empirical observation, but so far it unclear to what extent it can facilitate the identification and fulfillment of latent customer needs in real life organizations. The model can only be tested and consequently refined in the context of actual projects.

Conclusion

This paper identified the potential obstacles to delivering superior value to customers with latent needs in the context of B2B projects through a literature review and reflected these findings in an empirical case in the construction industry. Both the literature review and the empirical case highlighted several issues that may lead to the destruction of customer value in the three phases of a project (needs assessment, design, and implementation). A model for superior value delivery that is based on previous research and current empirical findings was derived. The primary aim of the model is to support organizations that are involved in delivery projects in their aspirations to provide value for their customers by highlighting the areas where the most significant problems appear to lie. The practical validity of the model remains to be tested in different B2B project-based industries.

Latent customer needs is not yet a fully understood phenomenon in the context of B2B project deliveries (probably not in many other contexts, as well). It is obvious that latent needs have some relevance, but it is far from clear to what extent. It can also be argued that latent needs create additional difficulties for providing customer value through project deliveries and these difficulties need to be understood better than they currently are to be able to overcome them. There is, however something positive to say about latent customer needs as well. They may contain very significant opportunities for creating superior value for the customer through closer co-operation between the customer and the seller and its partners. Companies may be able, for example, through the joint construction of the project or by utilizing non-conventional methods or external experts for understanding the customers business and specific needs, to create superior value and strengthen supplier-customer relationships, which often leads to increased revenues for the supplier as well. The author presumes that discovering and fulfilling latent needs may later be proven as a key determinant of being able to build long-lasting and mutually profitable customer relationships in many B2B markets.

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