

**Paper presented at the EMNet 2009-Conference**  
**School of Economics and Business, University of Sarajevo, Bosnia and**  
**Herzegovina, September 3 – 5, 2009**  
(<http://emnet.univie.ac.at/>)

## **Providing Industrial Solutions - Discussed from the Perspective of Contracting**

**Ferdinand Burianek and Ralf Reichwald**

**Abstract** Integrating products and services into customized solutions helps firms to gain competitive advantage (Tuli et al. 2007). For delivering effective solutions a close relationship and interaction between buyer and seller is needed. Therefore, organizational mechanisms, in particular formal and relational contracting, have to be implemented for controlling opportunistic behavior and coordinating the resource pooling (e.g. Klein Woolthuis et al. 2005; Macneil 1978; Poppo and Zenger 2002). Based on three in-depth case studies in the B2B-context (Yin 2008) this paper shows, what key elements formal contracts should have and which relational norms are relevant when shifting from selling pure products or services to providing solutions. Furthermore, it is illustrated how the complementary relationship between formal and relational contracting contributes to the management and success of solution selling. As empirical research on inter-firm contracts is relatively sparse (De Jong and Klein Woolthuis 2008), the findings help to provide a better understanding of the relevance and the required structure of contracts, especially when firms undergo the strategic shift to providing solutions.

**Keywords:** Solution, Inter-organizational Relationships, Formal Contract, Relational Contract, Control, Coordination

**Corresponding author:**

Dr. Ferdinand Burianek; burianek@wi.tum.de  
TUM Business School – Chair for Information, Organisation and Management  
Leopoldstr. 139; 80 804 Munich; Germany

## 1 Introduction

The current situation in industrial markets characterized by global competition and declining margins challenges enterprises. Assuring low cost as well as high product performance and quality is no longer sufficient for long-term success. Thus, suppliers in diverse industries try to differentiate themselves by offering more customized and integrated solutions (Tuli et al. 2007). This goes along with a strategic shift from merely offering physical products, spare parts, and support services to the more complex delivery of performance, optimization, and productivity (Galbraith 2002; Windahl 2007).

In practice, however, companies very often fail to implement an effective solution strategy due to lacking understanding of the success critical factors. Therefore, this paper discusses customized and integrated solutions by focusing on the capability of contracting from an economic perspective. There is evidence to suggest that it is not easy for suppliers to provide effective solutions that are also profitable without drawing up adequate contracts (Roxenhall and Ghauri 2004). Not only relevant knowledge of the legal department is required for designing contracts but even more specific knowledge from the sales and marketing department (Mayer and Argyres 2007). Therefore, an understanding of the functioning and the central elements of contracts is needed. Contracts are no longer just legal documents but help to organize inter-firm relationships by giving a structure to them. However, empirical research on contracts is relatively sparse due to their strict confidentiality. This hampers the understanding of the content and the role of inter-firm contracts (De Jong and Klein Woolthuis 2008).

In this research we will give a better understanding of contracting, especially the changing requirements when firms shift from selling pure products/services to providing customer-specific solutions. Based on three in-depth case studies we show how the content of formal contracts as well as the interplay between formal and relational contracting changes when firms undergo this strategic shift.

The outline of the paper is as follows: In the next section a definition and a short introduction to specific characteristics of solutions are given. Thereby, we derive specific implications for contracting and with it the relevance of considering contracts in the context of solution selling. After regarding contracts from a theoretical point of view we present our empirical findings. In the final section managerial implications and directions for further research are provided.

## **2 Characteristics of Industrial Solutions**

A solution can be defined as a customized and integrated combination of goods and services designed to meet customer's specific business needs (e.g. Sawhney 2006; Stremersch et al. 2001; Tuli et al. 2007). In the following, the value drivers of solutions are presented as well as two central characteristics of providing solutions. Based on that, implications of selling solutions for contracting between parties are presented.

### **2.1. Added Value of Solutions**

The definition of solutions given above highlights two key dimensions: the degree of integration and the degree of customization. Both can be considered as the main sources of superior value creation for the customer (Doster and Roegner 2000). First, the incremental customer value created by the integration of a solution arises from marketing integration as well as technical integration (Krishnamurthy et al. 2003). Marketing integration refers to advantages for the customer generated through a certain 'one face to the customer'-effect. Among other aspects customers can benefit from being able to search a single location for all elements of the solution, pay a single bundled price, have a single provider installing and deploying the solution, and maintaining a single vendor relationship (Sawhney 2006). In addition to the marketing integration, the technical integration ensures physical interoperability of the products and services that constitute the solution (Krishnamurthy et al. 2003). This means that product components are engineered to harmonize better as well as that services are built upon integrated service platforms (Sawhney 2006). That differentiates solutions from pure product-service bundles and characterizes true integration (Stremersch and Tellis 2002).

The second key dimension in designing solutions results from the fact that the integrated bundles have to be customized to the specific business environment of the clients (e.g. installed products, existing interfaces etc.). But the absolutely individual production of all solution components is not really reasonable in the economic sense. Therefore, trying to achieve an efficient level of economies of scale solution providers have to build platforms or construction kits for product and service components that span across many customer problems (Johansson et al. 2003). The actual degree of customization results from the customer's specific problem and the value the customer places on tailored products and services (Sawhney 2006). Having defined solutions the following chapter will present characteristic implications of providing them compared to offering standard products and services respectively.

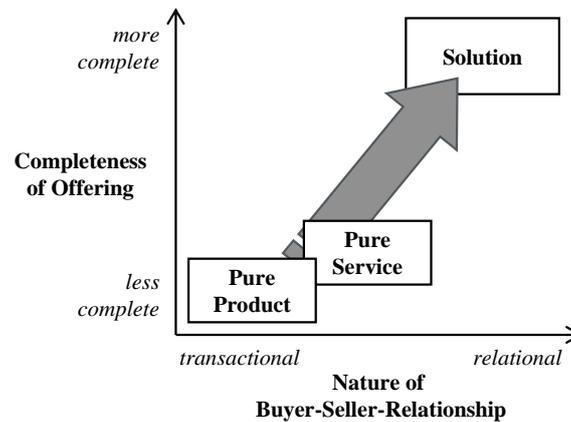
## 2.2. Providing Solutions

Both value drivers of solutions, mentioned above, result in two central characteristics of providing them: the completeness of the offering and the nature of buyer-seller-relationship (Penttinen and Palmer 2007). In both dimensions solutions differ significantly from pure product and pure service offerings respectively. On the one hand, solutions are, as discussed before, more focused on specific customer problems (Stremersch et al. 2001). For meeting individual customer needs diverse products and services are integrated into one offering in technical and operational terms (Sawhney 2006). The higher the degree to which the customer problems are solved and the lower the amount of additional work left to the customer, the higher is the degree of completeness of the offering. Thus, solutions usually comprise physical products, software, and services like basic installed services (repairs, spare parts etc.), maintenance services (preventive maintenance, condition monitoring etc.), professional services (spare parts management, training etc.), and operational services (supporting and/or operating the hardware/software or a whole business processes of the customer) (Oliva and Kallenberg 2003). Depending on the specific customer needs and the best solution of the problem the configuration of the offering varies.

On the other side, selling solutions can be described by the nature of the buyer-seller-relationship. For meeting customer specific needs a closer buyer-seller-relationship, i.e. a higher degree of interaction between both partners, is required. The relationship can for example be measured by using the following concepts: information exchange, operational linkages, legal bonds, cooperative norms, and relationship specific adaptations by the seller or the buyer (Cannon and Perreault 1999). A relational type exhibits stronger operational linkages, more extensive information exchange and legal bonds, higher cooperative norms, and more adaptations than the transactional one (Penttinen and Palmer 2007). The better the relation between the buyer and the seller is developed, the better the specific customer needs can be analyzed, discussed, and thus be met.

Depending on the particular level of completeness and the nature of buyer-seller-relationship solutions can be differentiated from pure product-service-bundles (cp. figure 1). To illustrate this strategic shift we give an example of telecommunication industry: instead of offering a telephone system with appropriate software, end devices, and services (installation, reactive maintenance, spare parts etc.) telecommunication firms nowadays offer 'telephony' which comprises all the components listed before. The provider is responsible for the availability of the telephone infrastructure and delivers further services, like proactive maintenance, in order to ensure it. Thereby, the customers derive their value by using the telephone without needing to attend to the required infrastructure (components). According to this understanding solution selling is not only about offering additional services, but also about changing business models and becoming a customer centric organization to provide integrated

combinations of products and services focusing on customer's business (Galbraith 2002; Tuli et al. 2007).



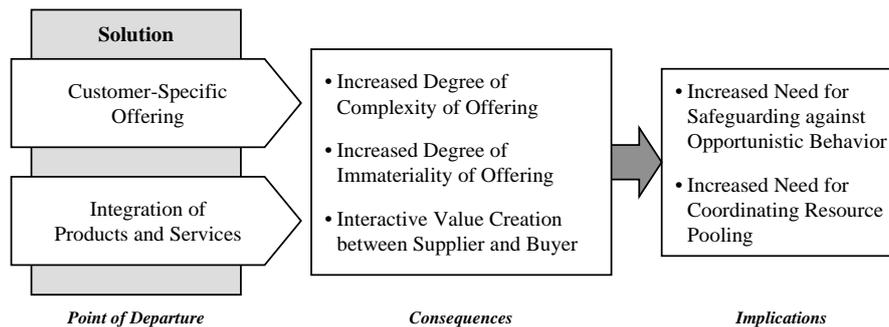
**Figure 1:** Characteristic Dimensions of Providing Solutions (according to Penttinen and Palmer, 2007)

Hence, if service offers change from being product oriented to being 'end-user's process oriented', a fundamental re-orientation of customer interaction is required (Oliva and Kallenberg 2003): customer interaction has to change from a transactional perspective to relational processes (Johansson et al. 2003; Tuli et al. 2007). For that purpose, customers must be seen as co-producers who significantly contribute to the creation of effective solutions and organizing the value creation processes becomes the critical capability of the firm (Normann 2000). As a result, the interfaces between customer and supplier become blurred and the relationship rather turns into a value creation partnership (Vargo and Lusch 2008). Thereby, focusing on relational processes supports effective inter-functional coordination and a coordinated integration of the solution provider's resources in creating superior customer value (Diller and Ivens 2006; Narver and Slater 1990). However, the predominant view of solutions among scholars and practitioners is still product-centric (Tuli et al. 2007; Windahl 2007). This may be due to the fact, that literature describes the move towards integrated solutions very often as a process that firms undergo to enhance their physical products by additional service offerings (Kumar and Kumar 2004; Oliva and Kallenberg 2003). The aim of this paper is to give a better understanding of setting up a solution-centric mind-set by illustrating contractual issues in this context.

### 2.3. Summary and Implications for Contracting

Summarizing the discussion so far we have shown that selling solutions differ from selling pure products or services or loose bundles thereof. First, solutions are characterized by integration of products and services which span

over the whole lifecycle of the customer relationship. Although that allows for new and customer-specific offers it causes also higher complexity, as more product and service components have to be considered and coordinated, as well as higher immateriality and, thus, higher degree of outcome uncertainty for the customer (Tuli et al. 2007). Second, delivering solutions needs a close buyer-seller-relationship all along in order to ensure the proposed added value (Vargo and Lusch 2008).



**Figure 2:** Organizational Challenges of Solution Selling

These consequences of selling solutions imply two main uncertainties (cp. figure 2). On the one hand, a close relationship and interaction between the parties requires trustworthiness (Mayer and Teece 2008). Both parties have to rely on each other and potential opportunistic behavior must be minimized. Therefore, appropriate controlling mechanisms have to be installed. On the other hand, there is the need for coordinating all the resources pooled together (by the supplier and the customer) in order to achieve the relationship purposes. Das and Teng (2001) call such risks behavioral and performance risk. Depending on the agreed value proposition and the specifically designed solution offer, different control and coordination requirements arise. In this context, a higher degree of completeness and a more relational buyer-supplier-relationship require more control and coordination efforts. How these needs, especially arising when selling solutions, can be addressed by contracting is topic of the following chapters.

### 3 Contracting From A Theoretical Perspective

Previous research in the field of contracting deals primarily with what characteristics contracts have and how they are used to handle the lack of trust between buyer and seller. This paper goes one step further by highlighting the contractual content structure. In the following, we give a short introduction to the status of contractual discussion from a theoretical perspective. Another mode of governance for managing inter-organizational relationships has relational nature.

This relational aspect of governance (relational contracting) is also shortly presented.

### **3.1. Formal Contracting**

Formal contracts can be defined as agreements in writing between two or more parties, which are perceived, or intended, as legally binding (Lyons and Mehta 1977, p. 241). Written, formal contracts can function as a means of communication of rights and duties each party has (Roxenhall and Ghauri 2004). There need to be a balance between protecting the proprietary interest of each party while establishing trust and openness with its partners (Little 1995). Most value is generated when all partners strive for the same goal. Therefore, contracts shall function as control and coordination mechanisms to enable cooperative value creation (Dekker 2004).

Beneath the dimensions duration and flexibility contracts particularly vary in the degree of completeness and complexity (Furlotti 2007; Arino and Reuer 2006). Although both have been seen as interchangeable for a long time, they do not go hand-in-hand (Arino and Reuer 2006). Completeness indicates the degree to which all potential contingencies are covered. The less all relevant data can be included in a contract, the less complete it is. Setting up a complete contract can be difficult because of bounded rationality of parties, their inability to observe all relevant determinants, and high transaction costs for gathering all relevant information (Saussier 2000; Williamson 1979). In contrast, contractual complexity reflects the number and stringency of the provisions employed. Thus, many and highly stringent contract clauses cause higher complexity (and vice versa). But a higher complexity does not necessarily result in higher completeness at all. Rather less complex contracts can be more complete if they cover all data that are relevant to the transaction than more complex ones which do not (Arino and Reuer 2006).

As buyers and suppliers often lack information which is relevant for complete contracts and as it is also difficult to define the relevance of information, focusing on and discussing contractual complexity seems to be more reasonable, due to higher objectivity. Recently, several studies have investigated determinants which influence the mentioned contractual characteristics (e.g. Anderson and Dekker 2005; Luo 2002; Poppo and Zenger 2002). They are mostly derived from Transaction Cost Economics and the Resource-based View: asset specificity, uncertainty (environmental and behavioral), transaction frequency, strategic importance.

Based on those dimensions three contract types are typically differentiated: classical, neoclassical, and relational (Macneil 1978; Williamson 1979). Classical contracts are set up in discrete exchange transactions in which the identity of the

parties is irrelevant. They are highly complete as mostly all exchange relevant information is available due to low complexity of the transaction. If not all potential contingencies can be determined, e.g. because of longer lasting business agreements and more complex offerings (e.g. integrating products and services) contracts usually lack completeness. Such contracts are called neoclassical. They are flexibly designed in order to allow adaptations to potential change requests. Therefore, the point of departure (the status-quo) is described in detail for giving both parties higher safety and minimizing potential disputes respectively. Both contract types, classical and neoclassical, are highly formalized and, thus, help to align expectations of the business partners. But there are also exchange situations which are dominated by high uncertainty, especially because of a long time horizon and very complex customer requirements. In that context the relational aspect becomes more important and implicit. Trust-based mechanisms are required in order to enable the important flexibility to change. Contracts which are based on formal as well as on relational aspects are called relational contracts. The underlying relational aspect is more elaborated in the next chapter.

### **3.2. Relational Contracting**

Every business exchange has relational aspects, in classical and neoclassical as well as in relational contract situations. The difference is that whereas in relational contracts they are a very important part of the relationship in order to ensure the fulfilling of the agreements, they do not play such an important role in classical and neoclassical contract situations (Macneil 1978). The lower the degree of contractual completeness, i.e. the more difficult to spell out the critical terms of a formal contract, the more important is the relational aspect. Relational contracting means that the exchange is strongly based on cooperative (relational) norms. They reflect expectations the two business partners have about working together to achieve mutual and individual goals jointly (Cannon and Perreault 1999). Thus, they highlight the relationship between supplier and buyer and help to close contractual gaps.

The most discussed norms in literature are: flexibility, harmonization of conflict, information exchange, long-term orientation, mutuality, restraint in the use of power, planning, role integrity, solidarity (cp. Ivens and Blois 2004; Kaufmann and Dant 1992). Depending on the extent of situational context factors (e.g. uncertainty, relationship history etc.) some norms are more developed than others (Heide and John 1992). Thereby, relational norms help to develop a strong buyer-supplier-relationship, in order to reduce opportunistic behavior, and to ease required adjustments of the exchange agreement (Artz and Brush 2000).

Referring to the research of Poppo and Zenger (2002) some researchers understand relational norms as substitutes for formal contracting, others as complements. Nevertheless, a balance between both mechanisms is desirable for

favorable cooperation development and reduction of distrust among parties (Arino and Reuer 2006). Further research work still remains to be done in order to get a better understanding of the interdependences (Ryall and Sampson 2009).

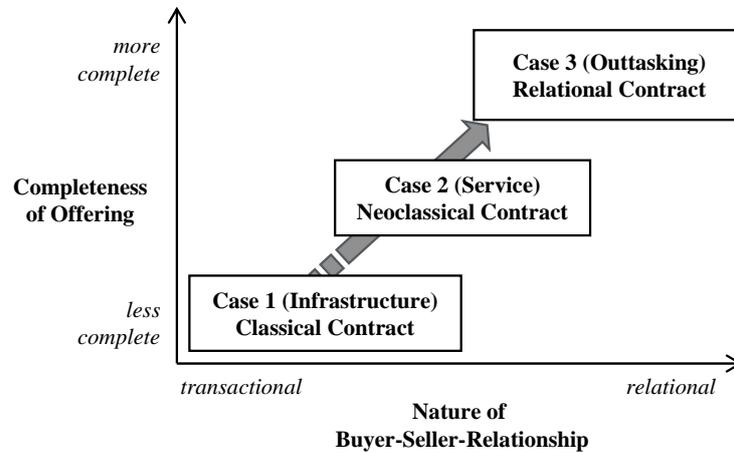
## **4 Case Studies: Method And Findings**

Having discussed formal and relational contracting from a theoretical perspective so far, we will give a better understanding by using case studies. After a short introduction to the applied method the findings of three conducted cases are summarized and finally discussed.

### **4.1. Method**

Agreements between firms are complex phenomena as they are multifaceted and multidimensional. To obtain a holistic picture of complex, real-life phenomena the case study method is used (Yin 2008). Therefore, primary (i.e. in total 12 expert interviews) and secondary data (i.e. 3 written contracts) were collected in order to get the relevant information for each case study. It was decided in advance that the three cases should differ from each other using the characteristics completeness of offering and nature of buyer-seller-relationship as a means for purposive sampling. This helps to highlight the differences between selling products, product-service-bundles and solutions. The cases were conducted in Germany. Although the cases represent different technologies and different offerings, it can be stated, that the likelihood of finding contracts with a varied content increases by such a selection (cp. Roxenhall and Ghauri 2004). Figure 3 shows a classification of the three cases and their respective contract types.

In the following, the findings of the three in-depth case studies are summarized. The formal contract is analyzed in terms of contractual complexity which, as discussed above, refers to the number of pages, number and type of clauses, and the detail in which the contract-clauses were elaborated (cp. e.g. Anderson and Dekker 2005; Arino and Reuer 2006). Relational contracting was evaluated by asking the experts to indicate the extent of relational norms like interaction, information exchange etc. (cp. e.g. Poppo and Zenger 2002).



**Figure 3:** Classification of conducted cases and appropriate contract types

#### 4.2. Findings of Case 1 – ‘Infrastructure Case’

In the first case, the ‘Infrastructure Case’, the seller supplied infrastructure for computer centers. The core offering consisted of racks and additional services (transport and installing). The monetary value of the services was far below the one of the racks. Thus, the offering was product-centric and had a strong transactional orientation as the racks were hardly customized and individualized. After installation the customer inserted and connected the servers by her own. As a result this case is defined by low completeness of offering as well as transactional nature of buyer-supplier-relationship. The customer specified the requirements of the requested system and the supplier arranged an adequate offer. As further coordination was not required, the needed interaction (information flow) was rather low in total.

The contract in this case spanned eight pages and was mainly driven by product focus as the product features were extensively described. In that, the contract was equal to the bid proposal. The service agreements were added to the product specification in the same document without any further special clauses. In total, the offering could be fully specified in detail without leaving any uncertainties. Standard contract terms (product specifications) were used therefore. After delivering the racks the operability could be controlled and no further changes were required. Both parties were satisfied by specifying the related product and service components. Further clauses were not needed due to the low information asymmetry between the parties. As a consequence of this the degree of contractual complexity was rather low.

Because of the discussed case characteristics the designed contract illustrates a classical contract, as described above. It is discrete and nearly complete and has a low degree of complexity. The relational linkages between the parties are not very extensive although they exist.

### **4.3. Findings of Case 2 – ‘Service Case’**

In the second case, the ‘Service Case’, the seller delivered consulting services based on CAD-software. As customers did not want to buy the software but rather the outcome based on it, the supplier changed the offering from just distributing the software to delivering specific services using the software. At the beginning of the case-based business relationship the supplier and the customer exchanged relevant data in order to get a comprehensive understanding of the task. The supplier required not only technical and methodological but also customer-specific knowledge. Especially the question in what context the generated service outcome would be used was absolutely critical for defining the service delivery process in a suitable manner. The service outcome was used to test, but also to improve features of a product. So far it can be stated that the offering was not complete as additional work was still left to the customer (interpretation of outcome and deducing implications for further activities). Furthermore, the exact outcome of the service was not clear at all. Due to this supplier and buyer interacted intensively at the beginning of the relationship in order to minimize misunderstandings. As both parties had to rely on each other and showed a high willingness to cooperation there was a more relational nature of buyer-seller-relationship than in the first case.

The contract between both parties included 13 pages in total. As the service outcome was linked to uncertainty the main part of the contract (5 pages) focused on a detailed description of the task as well as the customer-specific requirements (process). Beyond that, required activities of both parties, limitations of the service outcome, and assumptions were pointed out. Therefore, the contract was mainly individualized in order to meet the specific requirements of the business relationship. Furthermore, quality levels for the service outcome were defined for facilitating better control. For the same reason as well as for coordination benefits potential change requests concerning the service outcome were considered and fixed in the contract.

By setting up the detailed contract in this case several goals were achieved. On the one hand, ambiguity on both sides could be reduced: the supplier got information about the desired outcome, the customer about the work process. In addition, mutual understanding of technical terms could be established. On the other hand, the detailed contract insured for both parties as they could rely on it in case of goal variances. Beneath the controlling function, setting up a detailed contract demonstrates the supplier’s competencies in analyzing, structuring, and

solving customer problems. Furthermore, the supplier could use the document as an internal coordination (e.g. sales or production) tool due to its accuracy.

The designed contract was more complex than in the first case as not only a detailed task description but also further clauses concerning the management of change requests and monitoring of the outcome quality were included. The higher degree of uncertainty causes higher contractual complexity and, thus, a higher relevance of relational behavior. Hence, the discussed contract corresponds to the concept of neoclassical contracts as presented above.

#### **4.4. Findings of Case 3 – ‘Outtasking Case’**

The third case, the ‘Outtasking Case’, involved a long-term contract between the seller and the buyer. The business relation focused on guaranteeing the availability of the customer’s data storage-system (read and write access). Several product (e.g. storage management software) and service (especially maintenance, updates, trouble shooting etc.) components had to be integrated in order to ensure the performance of the system. Most of the services could be delivered remote. Although the server system was owned by the customer the offering was relatively complete as the customer could use it ready-to-operate. In order to ensure the operability of the system over the agreed period of three years continuous and intensive interaction between customer and operator were required. On the one hand, changes on the running system, e.g. due to new business models of the customer, as well as failure notices had to be promptly communicated. On the other hand, repair and maintenance times had to be coordinated with the customer in order to allow smooth working flow of the customer. Both parties recognized that they have to cooperate in order to achieve the pursued goals. Thereby, the time to get familiar with the customer’s system and to implement new processes (e.g. organizing telephone hotline, trouble shooting etc.) took about one year (transition time).

Whereas in case 2 the service outcome was unclear but the delivery process quite clear, it was reverse in case 3. The service levels could be exactly defined but there were uncertainties to the process due to the complexity of the offering as well as the long time period and the consequential change requirements over time. So the parties spent more effort in defining the outcome specifications than the process. This can be seen in the contract structure, which is subsequently described.

The final contract consisted of 22 clauses which were summarized on 35 pages (framework of contract). As there was a detailed appendix for each clause the whole contract had about five hundred pages in total. The contractual framework helped to structure the business agreement and allowed to adjust only the relevant clauses if changes were required. Beneath clauses describing the basic

agreements (i.e. service levels, service delivery processes, cooperation obligations, price etc.) the contract also included governance clauses (i.e. procedure of reporting system status, nondisclosure agreement etc.) as well as change management clauses (i.e. incident management, adjustment of system components etc.). Furthermore, in order to get a common understanding of the business relationship the contract had an introduction part (preamble) in which mutual goals and benefits of the business deal as well as future outlook of customer's business development were detailed. Although most of the clauses were standard terms the individual, business-specific clauses were, as measured by pages, the most. Especially the description of the specific service components to be delivered were very extensive (e.g. because of explaining the network architecture).

Because of the contract structure and the situational context the contract in the third case fits with the concept of relational contracts. As the exchange situation is characterized by high uncertainty as well as changes over time the contract is highly elaborated and extended (and hence complex). Relational norms highlighting the cooperative behavior between the parties complement the formal document in order to guarantee enough control and coordination for both. Without such a strong combination and establishment of both governance mechanisms a business relationship in such a business context would have not been realized.

#### **4.5. Discussion**

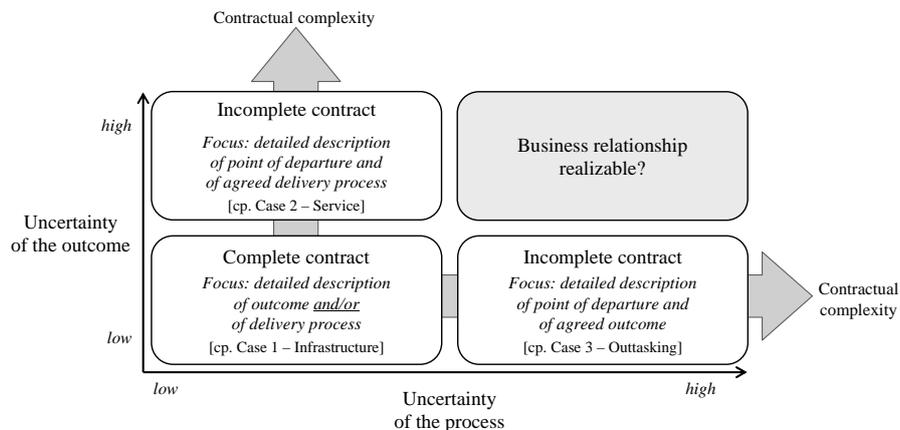
The conducted case studies have illustrated that selling pure products or services differ strongly from selling solutions, especially regarding contracting issues. Thus, we have seen in case 1 that contracts for discrete, transactional exchanges are not very complex due to high information completeness. In contrast, in case 2 and 3 more contractual safeguards and coordination elements had to be implemented due to higher uncertainty of the exchange situation. As a result, the degree of contractual complexity within case 2 and 3 increased.

We identified two uncertainties which can particularly arise when firms transform to a provider of integrated solutions: uncertainty in describing the outcome and the delivery process respectively (cp. also Nidumolu 1995; Turner and Simister 2001). Outcome uncertainty indicates the difficulty of translating customer needs in concrete service specifications, e.g. due to insufficient analysis of customer needs or high variability of them. In contrast, uncertainty of the process implies lacking knowledge of the supplier in how to deliver the specified and agreed service requirements or lacking ability to deliver the service. Poor process standardization, low information basis or often and rapidly changing customer needs may be the cause of it and, thus, be responsible for this ambiguity.

Within the conducted cases it can be seen that both uncertainties cause a higher need for control and coordination and result in higher contractual

complexity (cp. Figure 4). A high degree of contractual completeness can be reached in cases of high certainty of the outcome as well as the process (Case 1). As a result, the contractual complexity is rather low in such a situation because describing the outcome and/or the process (basic elements) is sufficient. In other words, the description of the foundation of the exchange, in particular the specific components to be exchanged, is enough for executing the deal. In cases of (high) uncertainty of either the process or the outcome more effort for describing the underlying situation and the agreed aspects (outcome or activities) is needed. Furthermore, contractual clauses have to be agreed which focus for example on governance (e.g. control responsibilities of outcome quality, period of quality reviews etc.) or change management issues (e.g. communication duties, decision rights etc.). Those shall enable an effective as well as efficient delivery process (i.e. business relationship) without greater disturbances. But in consequence, this results in higher contractual complexity due to increased need for safeguarding and coordination.

Besides the discussed uncertainty situations there are also situations in which both uncertainty dimensions (process and outcome) are in high gear. For those it has to be thought about starting the business relationship. A very high degree of uncertainty raises the costs of setting up an adequate contract. So the question arises whether in this case an internal solution is preferred over an external.



**Figure 4:** Formal contracting under uncertainty

So far we have argued that one possibility to reduce contractual incompleteness is by describing more aspects of the relationship and, thus, increasing complexity of formal contracts. This shall reduce potential conflicts between the parties. Another possibility is in emphasizing the relational aspect of the buyer-seller-relationship. In order to allow effective and efficient provision of solutions the interaction between the business partners has to be of relational nature. For example, the case studies have shown that the parties should be aware

of the fact that during the delivery of a solution circumstances might occur which requires changes of the business agreement (e.g. adjusted business model of customer). Therefore, it is necessary that all relevant information is exchanged not just in advance, but also over the whole relationship in order to allow an adequate contractual consideration, response, and change management. Thus, unreserved exchange of relevant data/information is one key success factor for delivering integrated, customer-specific solutions: it starts with getting to know the business goals of the partner at the beginning and ends with a feedback about the quality of the delivered service. The more complex the offering is the more important is mutual information flow (cp. case 2 and 3).

All involved parties have to realize and agree respectively that joint cooperation is a prerequisite for achieving higher benefits. Formal in combination with relational contracting is the basis for providing solutions in an effective as well as efficient manner. According to this, a high degree of exchange-specific complexity requires a complementary relationship between both governance mechanisms (cp. also Mayer 2006).

## 5 Conclusion

Our purpose in this paper was to illustrate the relevance and implementation of contracting, formal as well as relational, in the context of solution selling. Thus, we wanted to give a better understanding of contracting, especially for firms shifting to a solution provider. Due to strict confidentiality of contracts empirical research lacks detailed discussions of contracts in different contexts.

Summarizing the findings of the paper we can state that implementing offerings which are more customer-focused and designed for their individual needs induces a higher degree of contractual complexity. For clarifying and managing unsafe situations not only clauses which define the foundation of the business agreement (transactional elements) are sufficient but also clauses which cover governance and change management issues (cp. Furlotti 2007). The higher the degree in completeness of offering, the higher is the need for additional clauses which cover the process of delivery (procedural elements). That implies a higher degree of contractual complexity. Furthermore, as not all contingencies can be written down in such a context, both parties are dependent on each other. Both have to work cooperatively together in order to generate an effective customer solution. Thus, formal as well as relational aspects of contracting are necessary in order to ensure an effective and efficient provision of solutions.

By describing the findings of the three cases our study provides exploratory insights into the phenomenon of contracting. However, much work remains to be done. For example, further case studies (within Germany and multinational

respectively) might be conducted, even longitudinal, in order to get a more holistic picture of the phenomenon contracting. In addition, by linking the contractual design with the performance of business exchanges a structure might be identified which can help firms to set up effective contracts. Beyond the governance-focused discussion of solutions further research may discuss outcome-based pricing models. Not only communicating the added value to customers but also claiming part of it is still an unsolved issue for firms.

## 6 References

- Anderson, S. W. and Dekker, H. C. (2005), "Management Control for Market Transactions: The Relation between Transaction Characteristics, Incomplete Contract Design, and Subsequent Performance", *Management Science*, Vol. 51 No. 12, pp. 1734-1752.
- Argyres, N. S. and Mayer, K. J. (2007), "Contract Design as a Firm Capability: An Integration of Learning and Transaction Cost Perspectives", *Academy of Management Review*, Vol. 32 No. 4, pp. 1060-1077.
- Arino, A. and Reuer, J. J. (2006), "Alliance Contractual Design", in Shenkar, O. and Reuer, J. J. (Eds.), *Handbook of Strategic Alliances*, Sage Publications, Thousand Oaks, pp. 149-167.
- Artz, K. W. and Brush, T. H. (2000), "Asset Specificity, Uncertainty and Relational Norms: An Examination of Coordination Costs in Collaborative Strategic Alliances", *Journal of Economic Behavior and Organization*, Vol. 41 No. 4, pp. 337-362.
- Cannon, J. P. and Perreault, W. D. (1999), "Buyer-Seller Relationships in Business Markets", *Journal of Marketing Research*, Vol. 36 No. 4, pp. 439-460.
- Das, T. K. and Teng, B. (2001), "Trust, Control, and Risk in Strategic Alliances: An Integrated Framework", *Organization Studies*, Vol. 22 No. 2, pp. 251-283.
- De Jong, G. and Klein Woolthuis, R. J. A. (2008), "Contract Research and High-Tech Alliances: Vistas for Future Studies", *Scandinavian Journal of Management*, Vol. 24 No. 3, pp. 284-289.
- Dekker, H. C. (2004), "Control of Inter-Organizational Relationships: Evidence on Appropriation Concerns and Coordination Requirements", *Accounting, Organizations and Society*, Vol. 29 No. 1, pp. 27-49.
- Diller, H. and Ivens, B. S. (2006), "Process Oriented Marketing", *Marketing – Journal of Research and Management*, No. 1, pp. 14-29.
- Doster, D. and Roegner, E. V. (2000), "Marketing Strategies – Setting the Pace with Solutions", *Marketing Management*, Vol. 9 No. 1, pp. 51-54.
- Furlotti, M. (2007), "There is More to Contracts than Incompleteness: A Review and Assessment of Empirical Research on Inter-Firm Contract Design", *Journal of Management and Governance*, Vol. 11 No. 1, pp. 61-99.

- Galbraith, J. R. (2002), "Organizing to Deliver Solutions", *Organizational Dynamics*, Vol. 31 No. 2, pp. 194-207.
- Heide, J. B. and John, G. (1992), "Do Norms Matter in Marketing Relationships?", *Journal of Marketing*, Vol. 56 No. 2, pp. 32-44.
- Ivens, B. S. and Blois, K. J. (2004), "Relational Exchange Norms in Marketing: A Critical Review of Macneil's Contribution", *Marketing Theory*, Vol. 4 No. 3, pp. 239-263.
- Kaufmann, P. J. and Dant, R. P. (1992), "The Dimensions of Commercial Exchange", *Marketing Letters*, Vol. 3 No. 2, pp. 171-185.
- Klein Woolthuis, R., Hillebrand, B. and Nooteboom, B. (2005), "Trust, Contract and Relationship Development", *Organization Studies*, Vol. 26 No. 6, pp. 813-840.
- Krishnamurthy, C., Johansson, J. E. and Schliessberg, H. (2003), "Solutions Selling: Is the Pain worth the Gain?", available at: [http://www.mckinsey.com/practices/marketing/ourknowledge/pdf/Solutions\\_SolutionsSelling.pdf](http://www.mckinsey.com/practices/marketing/ourknowledge/pdf/Solutions_SolutionsSelling.pdf) (accessed 24 January 2008).
- Kumar, R. and Kumar, U. (2004), "A Conceptual Framework for the Development of a Service Delivery Strategy for Industrial Systems and Products", *Journal of Business and Industrial Marketing*, Vol. 19 No. 5, pp. 310-319.
- Littler, D., Leverick, F. and Bruce, M. (1995), "Factors Affecting the Process of Collaborative Product Development: A Study of UK Manufacturers of Information and Communications Technology Products", *Journal of Product Innovation Management*, Vol. 12 No. 1, pp. 16-32.
- Luo, Y. (2002), "Contract, Cooperation, and Performance in International Joint Ventures", *Strategic Management Journal*, Vol. 23 No. 10, pp. 903-919.
- Lyons, B. and Mehta, J. (1997), "Contracts, Opportunism and Trust: Self-Interest and Social Orientation", *Cambridge Journal of Economics*, Vol. 21 No. 2, pp. 239-257.
- Macneil, I. R. (1978), "Contracts: Adjustment of Long-Term Economic Relations under Classical, Neoclassical and Relational Contract Law", *Northwestern University Law Review*, Vol. 72 No. 6, pp. 854-905.
- Mayer, K. J. (2006), "Designing Interorganizational Contracts: the Role of Detailed Task Descriptions", in Arino, A. and Reuer, J. J. (Eds.), *Strategic Alliances: Governance and Contracts*, Palgrave Macmillan, Houndmills, pp. 184-195.
- Mayer, K. J. and Teece, D. J. (2008), "Unpacking Strategic Alliances: The Structure and Purpose of Alliance versus Supplier Relationships", *Journal of Economic Behavior and Organization*, Vol. 66 No. 1, pp. 106-127.
- Narver, J. C. and Slater, S. F. (1990), "The Effect of a Market Orientation on Business Profitability", *Journal of Marketing*, Vol. 54 No. 4, pp. 20-35.
- Nidumolu, S. (1995), "The Effect of Coordination and Uncertainty on Software Project Performance: Residual Performance Risk as an Intervening Variable", *Information Systems Research*, Vol. 6 No. 3, pp. 191-219.
- Normann, R. (2000), *Service Management: Strategy and Leadership in Service Business*, Wiley & Sons, Chichester.
- Oliva, R. and Kallenberg, R. (2003), "Managing the Transition from Products to Services", *International Journal of Service Industry Management*, Vol. 14 No. 2, pp. 160-172.

- Penttinen, E. and Palmer, J. (2007), "Improving Firm Positioning through Enhanced Offerings and Buyer-Seller Relationships", *Industrial Marketing Management*, Vol. 36 No. 5, pp. 552-564.
- Poppo, L. and Zenger, T. (2002), "Do Formal Contracts and Relational Governance Function as Substitutes or Complements?", *Strategic Management Journal*, Vol. 23 No. 8, pp. 707-725.
- Roxenhall, T. and Ghauri, P. (2004), "Use of the Written Contract in Long-Lasting Business Relationships", *Industrial Marketing Management*, Vol. 33 No. 3, pp. 261-268.
- Ryall, M. D. and Sampson, R. C. (2009), "Formal Contracts in the Presence of Relational Enforcement Mechanisms: Evidence from Technology Development Project", *Management Science*, Article in Advance, pp. 1-39.
- Saussier, S. (2000), "Transaction Costs and Contractual Incompleteness: The Case of Électricité de France", *Journal of Economic Behavior and Organization*, Vol. 42 No. 2, pp. 189-206.
- Sawhney, M. (2006), "Going beyond the Product: Defining, Designing, and Delivering Customer Solutions", in Lusch, R. and Vargo, S. (Eds.), *The Service-dominant Logic of Marketing. Dialog, Debate, and Directions*, M. E. Sharpe, Armonk, NY, pp. 365-380.
- Stremersch, S. and Tellis, G. J. (2002), "Strategic Bundling of Products and Prices: A New Synthesis for Marketing", *Journal of Marketing*, Vol. 66 No. 1, pp. 55-72.
- Stremersch, S., Wuyts, S. and Frambach, R. T. (2001), "The Purchasing of Full-Service Contracts: An Exploratory Study within the Industrial Maintenance Market", *Industrial Marketing Management*, Vol. 30 No. 1, pp. 1-12.
- Tuli, K., Kohli, A. and Bharadwaj, S. (2007), "Rethinking Customer Solutions: From Product Bundles to Relational Processes", *Journal of Marketing*, Vol. 71 No. 3, pp. 1-17.
- Turner, R. and Simister, S. J. (2001), "Project Contract Management and a Theory of Organization", *International Journal of Project Management*, Vol. 9 No. 8, pp. 457-464.
- Vargo, S. L. and Lusch, R. F. (2008), "From Goods to Service(s): Divergences and Convergences of Logics", *Industrial Marketing Management*, Vol. 37 No. 3, pp. 254-259.
- Williamson, O. E. (1979), "Transaction Cost Economics: The Governance of Contractual Relations", *Journal of Law and Economics*, Vol. 22 No. 2, pp. 233-261.
- Windahl, C. (2007), "Integrated Solutions in the Capital Goods Sector: Exploring Innovation, Service and Network Perspectives", Doctoral Dissertation, Linköping University, Sweden.
- Yin, R. K. (2008), *Case Study Research*, Sage Publications, fourth edition, Thousand Oaks.