**Use and Effects of Incomplete Contracts in Fostering Innovation:**

**Two Cases of Performance-Based Contracts**

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**Abstract**

Performance-based contracts (PBCs) are increasingly being adopted by organizations that partner with providers of business services. Various scholars claim that PBCs foster innovation, but how this effect occurs has not yet been explained. We present the results of an embedded case study comprising two cases of inter-organizational relationships (IORs) governed by PBCs to shed light on how this type of contract affects innovation. The two PBCs both concern sourcing IT services, but they differ with regard to innovation performance. We find that both contracts are characterized by low term specificity and rewards that are linked to performance. Low term specificity in principle provides the partners with autonomy in their daily service operations, which enables them to innovate. Moreover, paying the partners based on performance incentivizes them to engage in innovation. A pay-for-performance clause is particularly effective for non-risk-averse partners. We also find that to achieve innovation, organizations should not only create room for partner autonomy through contract design (low term specificity) but also grant this autonomy to the partner during the execution of the contract. Organizations that are closely involved with the service delivery during the contract execution limit their partners’ innovation potential.

**Keywords:**Autonomy,Innovation,Performance-based contracts,Term specificity, Pay-for-performance

# Introduction

Firms increasingly rely on externally developed knowledge in addition to internal knowledge for innovation and value creation ([Chesbrough, 2003](#_ENREF_11); [Chesbrough, Vanhaverbeke, & West, 2006](#_ENREF_12); [Huston & Sakkab, 2006](#_ENREF_38)). Therefore, inter-organizational relationships (IORs) have become important for organizations that wish to complement and supplement their internal innovation strategies. Most of these IORs are governed by legal contracts. Contracts provide “legally bound, institutional frameworks in which each party’s rights, duties, and responsibilities are codified and the goals, policies, and strategies underlying the anticipated IOR are specified” ([Luo, 2002, p. 904](#_ENREF_50)).

In spite of the common use of contracts, there is inconclusive evidence of the effect of contract type on innovation. Whereas some authors have emphasized positive effects of contracts on Innovation (Johnson & Medcof, 2007; Wang, Yeung & Zhang, 2011), others have pointed at specific contract types that do not incentivize the partners to innovate (Gopal & Koka, 2010). Despite the lack of consensus and empirical evidence, researchers have generally suggested that, in particular, performance-based contracts (PBCs) positively affect partner innovation ([Martin, 2002](#_ENREF_52); [Kim, Cohen, & Netessine, 2007](#_ENREF_43); [Ng & Nudurupati, 2010](#_ENREF_59)). PBCs underline the *outcome* of the transaction rather than prescribing how to deliver it or which resources to use ([Kim et al., 2007](#_ENREF_43)). As a result, PBCs are less prescribing than many other contracts. A PBC can be considered an incomplete contract, i.e., a contract that does not include all the relevant contractual terms ([Saussier, 2000](#_ENREF_65)). Such contracts are common because organizations are unable to foresee all future events (i.e., they have bounded rationality). Relative to complete contracts, incomplete contracts are more conducive to innovation because they allow more freedom (i.e., fewer term-specificity clauses) and flexibility (i.e., fewer contingency adaptability clauses) in specific details of the transaction ([Bernheim & Whinston, 1998](#_ENREF_6); [Luo, 2002](#_ENREF_50)). Researchers argue that allowing the partners to determine how to best accomplish the job increases creativity and innovation ([Martin, 2002](#_ENREF_52); [Ng, Maull, & Yip, 2009](#_ENREF_58); [Ng & Nudurupati, 2010](#_ENREF_59)). For this reason, PBCs are increasingly applied in both the public and private sectors. However, research into the use of PBCs and their effects has been limited ([Martin, 2002](#_ENREF_52); [Hypko, Tilebein, & Gleich, 2010](#_ENREF_39)). Studies of (incomplete) contracts in general have mostly focused on negative relationship outcomes such as opportunistic behavior ([Williamson, 1985](#_ENREF_74)) and IOR failure ([e.g., Park & Ungson, 2007](#_ENREF_60)). However, in spite of some conceptual and managerial pieces, empirical work on the relationship between PBCs and innovative performance is largely missing. In particular, incomplete contracts in general, and PBCs in particular, have rarely been related to positive relationship outcomes such as innovation from an empirical point-of-view.

 We address this gap by empirically investigating how PBCs foster innovation. Based on an extensive review of the contracting and PBC literature, we define PBCs as contracts that reward partners for the performance delivered (i.e., pay-for-performance) and do not describe the processes and inputs to be used by the partner (i.e., low term specificity). We draw on transaction cost economics (TCE) and agency theory (AT) to build arguments for how these two characteristics affect innovation. We then study two cases of performance-based IT-service contracts that differ with regard to innovation performance. Our analysis is based on extensive interviews with representatives of the two IOR partners and on the actual contracts, comprising over 1500 pages of contractual details.

Our study contributes to the existing literature in several ways. First, it adds to the currently limited number of studies on the use and effects of PBCs ([Martin, 2002](#_ENREF_52); [Hypko et al., 2010](#_ENREF_39)). Second, studying a specific type of incomplete contract (PBCs) in relation to a positive relationship outcome (i.e., innovation) enables us to advance both the formal IOR governance and the innovation literature. As Gopal and Koka ([2010](#_ENREF_32)) noted, only a few studies address how contracts affect outcomes. Third, building our analysis on the actual *content* ofcontracts and other formal documents, such as reports from review meetings, allows us to go beyond recent empirical work that is mostly based on survey data or interviews alone (the research conducted by Faems, Janssens, Madhok, and Van Looy ([2008](#_ENREF_24)) is a notable exception in this respect). Our research furthermore differs from mainstream IOR governance research in that we interview both strategic and operational representatives of the organizations involved. Collectively, these contributions extend and deepen our understanding of the research area in a novel and distinctive way.

The remainder of this paper is organized as follows. First, we review the literature on (performance-based) contracting to build a preliminary framework that outlines how the characteristics of PBCs foster innovation. After a description of our research methodology, we present extensive within- and cross-case analyses. We conclude with a discussion of our scientific contributions and their managerial implications, as well as the limitations of the study and promising avenues for future research.

# Theoretical Background

Performance-based contracts (PBCs) are increasingly being used for the effective and cost-efficient (out)sourcing of business services and integrated product-service offerings ([Kim et al., 2007](#_ENREF_43); [Datta & Rajkumar, 2011](#_ENREF_15)). A well-known example is the “Power by the Hour” business model of Rolls Royce, in which the firm is compensated for the availability of the engines it maintains rather than for the labor and spare-part costs associated with the maintenance activities ([Neely, 2008](#_ENREF_57)). Such performance-based pricing schemes are also emerging in other service sectors such as logistics: the partner compensation is tied to cost savings and/or revenue-growth targets set by the customer. This shift toward contracting performance rather than activities is a trend that can be identified in both the manufacturing and service industries and in both the private and public sectors ([Hypko et al., 2010](#_ENREF_39)).

Since PBCs are used for various services and in various settings, PBC research—although limited in comparison to the widespread use of such contracts ([Martin, 2002](#_ENREF_52))—covers a range of sectors. However, studies of PBCs mostly address various public procurement sectors and logistics. Other sectors remain relatively unexplored ([Hypko et al., 2010](#_ENREF_39)). Despite the number of sector specific studies, we do not yet have a common definition of PBCs across sectors. Sector-specific definitions do share the same underlying concept ([Martin, 2002](#_ENREF_52)): PBCs specify the desired performance, results, or outcomes rather than the processes and inputs needed to achieve these outcomes. This concept closely resembles one of the two main characteristics of incomplete contracts: they do *not* specify all the partner’s observable obligations and actions (i.e., low term specificity) ([Bernheim & Whinston, 1998](#_ENREF_6); [Luo, 2002](#_ENREF_50)). Low term specificity allows freedom in the arrangements ([Crocker & Reynolds, 1993](#_ENREF_14); [Al-Najjar, 1995](#_ENREF_2); [Bernheim & Whinston, 1998](#_ENREF_6); [Argyres, Bercovitz, & Mayer, 2007](#_ENREF_5)), which is favorable for innovation because it provides the partners with decision-making autonomy. Further, PBCs reward partners based on their performance. Thus, our definition of PBCs goes beyond individual sectors and features two key characteristics, *low term specificity* and *rewards that are linked to performance* ([Martin, 2002](#_ENREF_52); [Lamonthe, 2004](#_ENREF_45); [Hypko et al., 2010](#_ENREF_39); [Ng & Nudurupati, 2010](#_ENREF_59)).

While most studies on IOR innovation consider innovation to be a *collaborative* activity aimed at developing new products and services ([Deeds & Rothaermel, 2003](#_ENREF_16); [Van Echtelt, Wynstra, Van Weele, & Duysters, 2008](#_ENREF_70); [Lee & Johnson, 2010](#_ENREF_47)), in the contracting literature innovation is conducted *by the partner* ([Johnson & Medcof, 2007](#_ENREF_41)). Similarly, we define innovation to be partner-initiated discrete, proactive undertakings that, in the *perception of the contracting organization*, result in new or improved ways of delivering transactions. The contracting organization’s perception is important, because innovation should ultimately advance its business. Advances may also result from undertakings that are new to the contracting organization but not to the partner. The key component of our definition of innovation is that the organizations tap into the partner’s entrepreneurial ideas.

 The first PBC characteristic is low term specificity. Using a TCE lens, Wang, Yeung, and Zhang ([2011](#_ENREF_73)) argue that while well-specified contracts reduce the costs and risks associated with knowledge exchange and collaborative innovation, over-detailed contracts may hamper knowledge exchange and innovation because of the clear, contractual specification of what is and is not allowed. Johnson and Medcof ([2007](#_ENREF_41)) draw on AT to argue that specifying only the desired outcomes, as is the case in PBCs, allows the agents room for innovation. Low term specificity gives the partners the freedom to initiate innovative activities ([Abbey & Dickson, 1983](#_ENREF_1); [Arad, Hanson, & Schneider, 1997](#_ENREF_4)). They can approach problems and performance metrics in a way that makes the most of their expertise and creative thinking ([Woodman, Sawyer, & Griffin, 1993](#_ENREF_75); [Amabile, 1998](#_ENREF_3); [Liao, Liu, & Loi, 2010](#_ENREF_49)). The partners will seek to maximize their profits by leveraging existing strengths and identifying new opportunities. We therefore argue that low term specificity in PBCs increases partner autonomy, which in turn fosters innovation.

 The second PBC characteristic, the linking of rewards to performance, can also be explained by AT, a principal theory in the research on the effects of pay on relationship outcome (e.g., [Stroh, Brett, Bauman, & Reilly, 1996](#_ENREF_69); [Bloom & Milkovich, 1998](#_ENREF_8)). Governance researchers have emphasized the importance of appropriate compensation systems to curb partner opportunism ([Eisenhardt, 1989a](#_ENREF_20); [Devers, Cannella, Reilly, & Yoder, 2007](#_ENREF_17)); such systems reward partners for the extent to which the desired outcomes are achieved. This induces partner innovation since any increased net profits resulting from innovative activities (e.g., via the use of different resources or ways of delivering the service) accrue to the partner. Indeed, various researchers have shown that financial incentives are related to opportunity identification and innovation ([Abbey & Dickson, 1983](#_ENREF_1); [Bhattacherjee, 1998](#_ENREF_7); [Shepherd & DeTienne, 2005](#_ENREF_66); [Johnson & Medcof, 2007](#_ENREF_41)). We therefore argue that paying partners for performance will direct their behavior toward innovative activities. It should be noted that AT suggests that the optimal reward scheme depends on the degree of risk-averseness of the partner ([Levinthal, 1988](#_ENREF_48); [Eisenhardt, 1989a](#_ENREF_20)). Paying the partners based on performance increases their liability ([Gates, Klein, Akabas, Myers, Schwager, & Kaelin-Kee, 2004](#_ENREF_29)) because they have more responsibility and authority and bear more risk because their income stream is uncertain ( [Gruneberg, Hughes, & Ancell, 2007](#_ENREF_33); [Kim, Cohen, Netessine, & Veeraraghavan, 2010](#_ENREF_42); [Ng & Nudurupati, 2010](#_ENREF_59)). In line with AT, we argue that risk attitudes determine behavior ([Ghosh & Ray, 1997](#_ENREF_30); [Lee & Johnson, 2010](#_ENREF_47)). Risk-averse organizations will exhibit behavior associated with maintaining status, making conservative decisions, and preferring solutions with known results. Risk-averse partners are thus less likely to engage in innovative activities ([Ghosh & Ray, 1997](#_ENREF_30); [Bloom & Milkovich, 1998](#_ENREF_8)). Hence, the effect of reward schemes on innovation is stronger when the partners are not risk-averse.

In the above review, we offer a theoretical framework that outlines the relationship between PBCs and innovation may stem from the two contractual elements of a PBC, namely, term specificity and the partner’s reward schemes. In Figure 1 we show that by keeping contractual term specificity low, the partner is faced with a certain degree of autonomy which positively affects innovation. Furthermore, when the partner is paid based on the performance, the partner is incentivized to engage in improvement and innovation activities. We also maintain that the partner’s risk averseness affects the extent to which the use of reward schemes impacts innovation. Following previous research, we use this theoretical background as a benchmark, using analytic induction ([e.g., Yan & Gray, 1994](#_ENREF_76)) to compare the data from our empirical investigation of two PBCs against the relationships outlined above.

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# Methods

*3.1 Research Design*

Although it is uncommon in inter-firm governance research ([Faems et al., 2008](#_ENREF_24)), we adopt a case research strategy to empirically investigate how PBCs affect innovation. Case research is particularly suitable for research questions with an explanatory component ([Sousa & Voss, 2001](#_ENREF_68); [Yin, 2009](#_ENREF_77)). In addition, studying how innovation occurs with a PBC requires detailed insight into the interactions and relationship between the two organizations; this is best obtained from qualitative data sources ([Langley, 1999](#_ENREF_46)). Our unit of analysis is the IOR. The case selection preceded the development of a research approach and protocol ([Eisenhardt, 1989b](#_ENREF_21); [Voss, Tsikriktsis, & Frohlich, 2002](#_ENREF_71)), thereby enhancing reliability ([Gibbert, Ruigrok, & Wicki, 2008](#_ENREF_31); [Yin, 2009](#_ENREF_77)).

To study the effects of PBCs on innovation in isolation from other potentially confounding external factors, we first decided on the type of service to be investigated. We conducted five exploratory interviews with professionals who use PBCs to source different kinds of services (i.e., facilities, IT, marketing, maintenance, and human resources) to identify the domain from which to select our cases ([Sousa & Voss, 2001](#_ENREF_68)). We chose IT services for two reasons. First, the use of PBCs is fairly common in this industry. Second, the industry is characterized by rapid change and short innovation cycles ([Rai, Borah, & Ramaprasad, 1996](#_ENREF_63)), which maximizes our chances of observing innovation. We opted for a single embedded case study, i.e., we studied two IORs governed by PBCs at a single organization. Limiting the number of cases increases the opportunity for in-depth observation ([Dyer & Wilkins, 1991](#_ENREF_19); [Voss et al., 2002](#_ENREF_71)), while still providing a basis for comparison. Since applying a PBC alone is unlikely to be sufficient for innovation, we expect that there are PBC-governed IORs in which innovation does not occur. Hence, our intention is to investigate two extreme cases: one with high and one with low innovation. These two cases are insightful because they seem to be similar on many dimensions of our theoretical model (as illustrated by figure 1) but they are very different in terms of innovative performance outcomes. A comparison of these cases will therefore add to our understanding of the specific mechanisms under which PBCs foster innovation that go beyond the traditional theoretical model as derived from the existing literature.

We selected Alpha as our case company because it was willing to make the actual contracts available, thereby granting us unique research access ([Yin, 2009](#_ENREF_77)). Alpha is a large financial services firm that applies PBCs in its relationships with two IT partners, Sigma and Kappa, whose names we were asked to disguise. Sigma, a small IT services firm, is responsible for the IT infrastructure of Alpha’s Asset Management division. Kappa, a large telecommunications and IT services firm, is responsible for Alpha’s telecommunication and IT infrastructure. Alpha considered the IOR with Sigma to be characterized by high innovation and that with Kappa to have low innovation. In addition, both IORs are sufficiently long, which ensures the availability of performance and relationship-development data ([Yan & Gray, 1994](#_ENREF_76)). Table 1 presents the major characteristics of the IORs.

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*3.2 Data Collection*

The data were collected via interviews and study of the two contracts. The data collection had multiple stages ([Pettigrew, 1990](#_ENREF_62); [Pentland, 1999](#_ENREF_61); [Faems et al., 2008](#_ENREF_24)). First, we conducted unstructured interviews with two Alpha managers to obtain preliminary information about the history and characteristics of the IORs. In addition, to better understand the background of the organizations, we accessed publically available data (such as annual reports and company websites).

 We conducted semi-structured interviews of 1.5–2 hours with seven different Alpha, Sigma, and Kappa representatives. At both organizations, we interviewed managers strategically involved with the PBC (sourcing and account management) and the operational employees who interact with each other in the daily service delivery. The interviews covered the period from the signing of the contract to the present, and they were structured around the characteristics of the contract and innovative activities. We also conducted extensive analyses of the contracts and other relevant formal documents (e.g., progress reports, annual reports, and company websites). This is an important feature of this study, since traditional contract studies usually focus on the degree of contractual formalization rather than the content of the contract ([Faems et al., 2008](#_ENREF_24); [Chen & Bharadwaj, 2009](#_ENREF_10)). Information on the level of term specificity and the reward schemes was also obtained from the interviews, but studying the contract itself provided in-depth insight into these variables.

To ensure validity, we asked about concrete events rather than abstract concepts. We also tape-recorded and transcribed all the interviews; the transcripts were returned to the interviewees for verification ([Yan & Gray, 1994](#_ENREF_76); [Yin, 2009](#_ENREF_77)). We also employed both source and method triangulation ([Eisenhardt, 1989b](#_ENREF_21); [Yin, 2009](#_ENREF_77)). Data-source triangulation was achieved by asking similar questions of multiple informants on both sides of the relationships ([Cardinal, Sitkin, & Long, 2004](#_ENREF_9); [Faems et al., 2008](#_ENREF_24)). Source triangulation resulted from comparing the contractual data with the interview data and information from the other documents studied. By cross-checking our data we increased the reliability of our results ([Frynas, Mellahi, & Pigman, 2006](#_ENREF_27)). Table 2 shows a high level of consistency in the cross-source agreement for our key variables in both cases.

 Finally, we wrote a case report based on the interview and contract data in which we analyzed the two PBCs and outlined whether and how innovation had occurred. This report was presented during an in-company seminar attended by Alpha’s CPO, the Manager for Sourcing & Procurement, and Alpha’s operational representative for Sigma. The feedback received suggested that the picture we had obtained was correct.

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Insert Table 2 Here

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* 1. *Data Analysis*

We used inductive reasoning to analyze our data in terms of our four key variables: (i) term specificity; (ii) pay-for-performance; (iii) innovation, and (iv) partner risk-averseness. For these variables, we created indicators by drawing on existing scales ([Yan & Gray, 1994](#_ENREF_76)). As an example, Table 3 lists the seven indicators of the innovation variable ([Gallouj & Weinstein, 1997](#_ENREF_28); [Hertog, 2000](#_ENREF_36)) and the evaluations of these indicators for the Alpha-Sigma case. For example, an interviewee explained that Sigma had adjusted some of their IT applications to increase the reliability of the data that Alpha receives from external partners; from this we concluded that innovation occurred in the form of higher service quality. Another interviewee explained that Sigma used to inform Alpha when there was a problem with the IT infrastructure, but it has now created a tool that enables Alpha to instantly observe any problems. We concluded that Sigma has found “a new way of interacting with its client.” Together, these two examples show that innovation has taken place in this IOR. Furthermore, when an indicator was said not to be present or not mentioned by the interviewee, we would conclude that that particular type of innovation has not taken place.

To arrive at these conclusions, the principal researcher and one of the co-authors independently analyzed the contracts, the associated appendices, and the interview data to evaluate the various indicators. The inter-rater reliability was evaluated using an unweighted Cohen’s Kappa ([Cohen, 1960](#_ENREF_13)), and it was sufficiently high (0.88). The few disagreements were resolved by discussing, integrating, and comparing our individual findings.

This multistage process of independent, comparative, and collaborative analysis of the data ([Faems et al., 2008](#_ENREF_24)) resulted in in-depth multi-level insight into our research questions, enabling us to arrive at an explanatory framework that describes how PBCs relate to innovation.

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Insert Table 3 Here

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# Results

* 1. *The PBC between Alpha and Sigma*

From Sigma, Alpha sources the hosting of IT applications critical to the operations of Alpha’s Asset Management division, the user of the service. Asset Management invests cash resources on behalf of pension funds and institutional investors and gives them access to a wide range of financial products. There is one critical IT application within which it conducts its asset management activities. If this application does not function properly, the information needed to make investment decisions may be delayed or even incorrect. As a result, the clients may lose large amounts of money.

Sigma, a small privately owned company with 150 employees, hosts the critical IT application and all the supporting applications; the contract was awarded for a period of five years. Sigma guarantees 100% functional availability of mission-critical IT applications. It hosts a total of 15 IT applications, discloses them to 80/90 employees, and ensures that all the applications and information streams required by Asset Management operate correctly. To achieve this, Sigma works with dedicated customer account teams that design and manage the applications for each partner.

***Contract characteristics***

The contract consists of a single legal document supported by several appendices. It specifies the performance that Sigma must deliver: 100% functional availability of the applications hosted. The contract focuses on performance rather than on what Sigma should do or which resources it should use; we conclude that the *term specificity* of this contract is low. Failure to meet the specified performance will result in penalties.

 “The contract between Alpha and Sigma can be considered a PBC; it doesn’t matter how Sigma operates, as long as it delivers the necessary performance at the time that Asset Management needs it.” - Alpha operational manager

Although the contract focuses on performance, Sigma’s freedom has certain restrictions such as Alpha’s architecture policy:

Sigma will ensure that the service is in accordance with Alpha’s IT policy …. will ensure the current and future availability of a sufficient number of qualified employees with sufficient skills and knowledge of Alpha’s business and management to deliver the service …. will ensure that the environment, software, and other resources used to deliver the service do not contain “diseases” (e.g., time bombs, Trojan horses, and viruses). - Alpha-Sigma contract, Article 24.13, p. 21 and Article 30.1, p. 23

The low term specificity has implications for the execution of the contract. Alpha does not interfere in Sigma’s work, allowing Sigma to make its own decisions about the service delivery:

“We do not always ask Alpha for permission if we want to do something … especially if we want to do something that will make our task easier (such as automating processes), since doing such things will also benefit Alpha. However, if Alpha plays a role in the process/change, then we do discuss it because we need its involvement and consent.” - Sigma operational manager

These observations lead us to conclude that the level of term specificity enables Sigma to perform its duties in the way it thinks best. Sigma has *granted autonomy*, and this enables innovation:

“ … the contract with Alpha is good; the basics [of the contract] are well written, but it does not specify all the details, which gives us room to innovate.” - Sigma operational manager

Sigma’s payment scheme consists a monthly fee and a one-time fee for specific one-time projects. If the scope needs to be expanded, the monthly fee will increase. Alpha pays the full monthly fee only if 100% functional availability is realized:

Sigma takes the operational responsibility for 100% functional uptime, integration with the application partners and the technical and organizational interfaces, and overall 100% availability and control [of all hosted IT elements] …. If Sigma does not meet the performance goal, than Alpha is entitled to claim service credits irrespective of the cause of the downtime. - Alpha-Sigma contract, Appendix 1: Description of the Service, Article 1, p. 5 and Appendix 2: Service Level Agreements, Article 4.1, p. 13

We conclude that Sigma’s rewards are linked to its performance.

Both Sigma and Alpha acknowledge that the promise of 100% functional availability involves shifting risk to Sigma. Sigma however does not consider this to be a concern:

“Risk management is very important for us. When we make [IT related] choices, we first make a risk assessment. If the partner wants to make high-risk choices [e.g., by preferring certain brands], we warn them of possible consequences. In the end, the partner decides. Because our risk management is controlled tightly, we can handle risk because we know what we are doing. So yes, there are risks, but that does not feel wrong.” - Sigma strategic manager

Hence, we conclude that Sigma is not risk-averse.

***Innovation***

According to both Alpha interviewees, Sigma has engaged in innovative activities. Sigma tries to improve the service to surprise and satisfy the client:

“Sigma has definitely engaged in innovative activities; it surprises us every now and then with developments that make the service better for us. For example, it incorporated a dashboard for Asset Management to monitor the functionality/availability of the applications. As a result, asset managers can directly monitor the IT infrastructure. I have not seen such initiatives from other partners.” - Alpha’s strategic and operational managers

This claim is confirmed by the Sigma interviewees. However, Alpha considered the above development to be an innovation, whereas Sigma viewed it as a general service improvement:

“Though we try to satisfy our partners with new things, we do not always consider these innovations. They are continuous improvements that make our services faster, easier, more reliable, and more insightful. So yes, we have engaged in innovation if you define the term broadly. For example, before Alpha contracted us, the data from Asset Management’s external partners were not transparent and not on time. The managers could not rely on this data for decision-making. We rearranged minor things in the IT applications in such a way that these are now more reliable.” - Sigma operational manager.

In line with our definition of innovation, we conclude that Sigma has engaged in innovative activities.

* 1. *The PBC between Alpha and Kappa*

***Case background***

FromKappa, Alpha sources connectivity and workstation services for all Alpha employees. Connectivity concerns all services related to (mobile) telephony and teleconferencing and to networks (e.g., LAN & WAN). Workstation services relate to employee workstations, such as setting up hardware, installing and managing software, and providing an IT helpdesk.

 Kappa was founded in the late 19th century and is now a large public firm with over 15,000 employees, delivering telecommunication and IT services. The contract was awarded for five years with a possible opt-out after three years: this means that if Kappa does not provide the agreed performance, Alpha can terminate the contract early.

***Contract***

The contract consists of a single legal document supported by several appendices. It states that a certain level of performance must be achieved for all services delivered but does not state how services should be delivered or which resources should be used. Hence, *term specificity* is low:

Kappa will deliver the services according to the agreed performance, which is an outcome obligation. Kappa will use its available expertise and experience to provide the services … Kappa will ensure that it has a sufficient number of qualified employees allocated to the service delivery with sufficient skills and knowledge of Alpha’s business. - Alpha-Kappa contract, Article 5.1, p. 12 and Article 7.1, p. 20

The contract describes the services to be delivered and the associated boundary conditions, resulting for example from Alpha’s existing IT architecture (bracketed text added by authors):

“[Kappa decides how to deliver the services and which resources to use.] … Alpha decides the IT enterprise architecture. Alpha’s enterprise architects translate this into certain IT boundary conditions.” - Alpha operational manager

Thus, within certain boundaries, Kappa has the autonomy to operate as it chooses. However, both the Kappa and Alpha interviewees stated that Kappa’s granted autonomy is limited:

“Alpha does not tell us how we should deliver the service, but in certain areas it interferes. In my opinion, Alpha’s enterprise architects interfere too much with what we do …. If you are an enterprise architect you should be concerned with high-level IT design and have a long-term perspective, not a focus on every (minor) change Kappa incorporates.” - Kappa operational manager

“… there is a limit on the amount by which Kappa can deviate from these boundary conditions [set by Alpha’s enterprise architects], and the openness of Alpha’s enterprise architects to deviations from the IT enterprise architecture is limited” - Alpha operational manager

Hence, although the contract has low term specificity, Kappa’s granted autonomy is limited.

 Kappa’s reward scheme is as follows: price \* quantity \* service level. This means that Alpha pays Kappa for every service, user, work station, etc., depending on the service levels achieved. Hence, Kappa’s reward schemes are related to its performance. Furthermore, one of Alpha’s objectives in this contract is to reduce costs. However, assuming that service levels must be maintained and given that Alpha expects Kappa to lower its prices, Kappa’s only option for maintaining its revenue is to increase volume. At the same time, Alpha wants Kappa to renew its service package, and this may result in the termination of certain services such as landlines. To ensure that Kappa adheres to this requirement, Alpha has made the following arrangements regarding contract renewal:

“Alpha does not provide bonuses if Kappa innovates, but Kappa will receive a penalty in the form of no future business if it does not achieve the agreed cost reductions.” - Alpha operational manager

If Kappa underperforms, it will not be awarded new business. This penalty is linked to Kappa’s performance, and hence it can be viewed as a negative reward.

This also suggests that Kappa is confronted risk. First, underperformance will lead to reduced revenue. Second, if Kappa does not make a sufficient contribution to Alpha’s cost-reduction objective, Alpha may decide to seek a new partner, possibly after three years. Kappa would then lose both future business and some or all of its current business with Alpha:

If Kappa does not perform according to what was agreed in the contract, Alpha has the right to (partly) end the relationship three years after the starting date, provided that Alpha gives at least three months’ notice. Alpha will then be obliged to buy-out the remaining contract term by paying an amount that equals 10% of the “connectivity part” revenue. - Alpha-Kappa contract, Article 4.2, p. 11

Kappa has accepted this risk although it is a large, traditional, and conservative company and so is inclined to be reactive and to avoid risk:

“Kappa is protective of its investments and seeks to maintain volume rather than increase margins on new or improved service delivery. It does not want to take the risk of losing volume … This shows that we are dealing with a partner with limited innovation.” - Alpha strategic manager

Based on the above observations, we conclude that Kappa is a risk-averse organization.

***Innovation***

Kappa has not engaged in innovative activities. This was reflected in the statements from the interviewees of both parties:

“Kappa is sometimes reactive, sometimes proactive. We want them to be proactive, but that is a game that Kappa has yet to learn. [Being proactive] is not the way Kappa conducts business.” - Alpha strategic manager

“[These are the reasons that Kappa has not engaged in new initiatives.] First, we are focused on the continuity of the service rather than on innovative activities. Second, Alpha and Kappa are in the middle of a transition process involving service improvements. Because the current [IT] environment is complex and old, it is difficult to renew the environment and speed up the transition. Third, Alpha’s decision-making is slow. … there are too many parties [within Alpha] that can interfere in the way we deliver the service. This may delay the process of getting innovations through; by the time a decision has been made, the world has changed and the innovation is outdated.” - Kappa operational manager

We conclude that Kappa does not engage in innovative activities. None of the parties are satisfied with Kappa’s level of innovation.

* 1. *Cross-Case Analysis*

Before comparing our two cases to reveal similarities and differences, we first summarize the discussions in Table 4.

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Insert Table 4 Here

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 We find the following similarities between the cases. Both contracts are performance-based: they have low term specificity and include a pay-for-performance clause. This clause specifies a fixed fee that is relative to performance: lower than agreed availability/service levels results in lower rewards. Since the desired service level in the Sigma case is 100%, there can be no over-performance. Hence, there are no bonuses for Sigma. For Kappa, the service levels are set below 100%, so over-performance is possible.

 Although both contracts are performance-based, there are clear differences in the levels of innovation: Sigma is more innovative than Kappa. Kappa explains its lack of innovation by its limited freedom (i.e., limited granted autonomy). The interviewees argue that beyond the specified boundary conditions Kappa should be free to perform its tasks as it sees best, but in reality this freedom is limited. Alpha’s enterprise architects are closely involved with the tasks to be performed, and they focus on minor details rather than the big picture. Kappa considers Alpha to interfere with its operations.

 These observations suggest that although the contract with Kappa was *designed* with low term specificity, this did not result in *granted* autonomy in the service delivery. Sigma did enjoy such autonomy and was therefore able to focus on maintaining 100% functional availability. It appears that designing a contract with the intention of autonomy is not the same as actually granting this autonomy.

 Kappa’s lack of autonomy strongly affected its level of innovation. According to the interviewees, Kappa was limited in its ability to engage in new initiatives. In contrast, Sigma’s high level of granted autonomy has clearly resulted in the freedom to innovate. Sigma continuously tries to improve its services, both to make its work easier and to improve the offering to Alpha.

Furthermore, Kappa’s risk-averseness makes it less inclined to engage in innovative activities. This characteristic is partly historical: a long-time market leader, Kappa was confronted with the need for innovation only when competition was introduced in the formerly public national telecom market, some ten years ago. Furthermore, the rise of mobile communications has been a specific threat: the development of this technology will lead to the end of landline telephony, which has long been the basis of Kappa’s revenue model. In the case studied here, Alpha wanted Kappa to update its services, as a result of which some existing services would disappear. Innovation would thus have a serious impact on Kappa’s existing activities. We found that Kappa is clearly focused on maintaining volume and does not want to take risks. Kappa’s risk-averseness did not cause the lack of innovation, but it certainly played a role. Moreover, this characteristic caused the pay-for-performance clause to be ineffective. Figure 2 summarizes these findings and describes the relationships between the characteristics of PBCs and innovation.

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Insert Figure 2 Here

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We believe that the lack of innovation can be explained by the fact that Alpha did not grant Kappa real autonomy. In the Sigma case, this was not a problem. A possible explanation for the lack of autonomy could be that Alpha and Kappa have long been partners. In prior contracts however, Alpha and Kappa collaborated differently. The contracts were much more prescriptive in nature. The nature of this contract is likely reflected in the way the two partners used to collaborate. When contracts are prescriptive, organizations will carefully monitor the activities being conducted by the partner. This explains the level of involvement of Alpha employees in Kappa’s operations, and the tendency to interfere with the partner’s activities. In contrast, Sigma is a new partner for Alpha. Since there was no history of past collaborations, it was easier to adopt a performance-based approach.

# Conclusion

Although the use of contracts is common in IORs, there is inconclusive evidence one the effects of contracts on partner innovation. Despite the lack of empirical evidence on the effects of contracts on innovation, researchers have generally suggested that, in particular, PBCs positively affect partner innovation However, academic literature lacks empirical evidence on how this effect occurs.

 To address this gap, we empirically investigated how PBCs foster innovation, adding to the limited number of studies on the use and effects of PBCs ([Martin, 2002](#_ENREF_52); [Hypko et al., 2010](#_ENREF_39)). We have also advanced the literature on IOR governance and innovation by studying the positive effects (i.e., innovation) rather than the negative effects (i.e., opportunism, IOR failure) of incomplete contracts.

 Our study enabled us to explore how PBCs foster innovation. Our results show that, in line with the results of our literature review, PBCs can be characterized as being low in term specificity and having rewards that are linked to performance. Both characteristics positively affect innovation. Low term specificity results in a certain degree of partner autonomy, at least in theory. However, our evidence shows that it is the *granted autonomy* that allows partners to use their knowledge and experience to optimize the service process. With such autonomy the partners can focus on how to improve their performance rather than on the rules stipulated in the contract. This could be clearly observed in the PBC between Alpha and Sigma: Sigma used its expertise to surprise Alpha with innovations. The one important specification in the contract was the 100% functional availability of the applications. Certain boundary conditions aside, Sigma decided on how to attain this performance. This is in contrast with the PBC between Alpha and Kappa: Kappa did not have freedom in organizing its service activities because of the enterprise architects’ interference. This prevented Kappa from being innovative. Therefore, we claim that low term specificity will have a positive effect on the partner’s innovation *provided* this autonomy is actually granted.

 In both contracts, Alpha pays the partner based on performance rather than the number of hours worked or the costs involved. This arrangement creates incentives to engage in new activities that improve performance. Sigma clearly engages in such activities but the arrangement did not work for risk-averse Kappa. We conclude that paying the partner based on performance leads to innovation, but only if the partner is not risk-averse.

In summary, we have found that low term specificity increases a partner’s potential autonomy but this in itself is not sufficient for innovation. The contracting organization must also grant the autonomy that is inherent to PBCs. This research has therefore highlighted the importance of the contract-execution phase in addition to the contract design phase. It is important to draft a well-designed contract (Argyres & Mayer, 2007), but it is at least as important to ensure that the parties follow the spirit of that contract. We have also found that linking rewards to performance encourages innovation in partners that are not risk-averse.

 Our results imply that the contract affects a partner’s incentives and its perceptions of risk and subsequently its ex-post managerial decision-making ([Gopal & Koka, 2010](#_ENREF_32)). Our findings show that decision-makers that opt for PBCs will enable their partners to be innovative. It is essential for organizations to collaborate with their partners in the spirit of the contract, granting the autonomy the partners need to optimize their processes and activities. In addition, given that the risks of uncertain income streams shift to the partner and that risk-averseness affects innovation, decision-makers should carefully investigate the partner’s risk attitudes before engaging in incomplete contracts such as PBCs. Our findings advance our understanding of the impact of governance mechanisms on observed outcomes and will help to orchestrate the relationships between organizations and their partners.

*5.1 Limitations and future research*

Our study has several limitations. First, we carried out just two case studies to enable an in-depth investigation of the effects of PBCs on innovation ([Dyer & Wilkins, 1991](#_ENREF_19); [Voss et al., 2002](#_ENREF_71)). However, our research was conducted at a single company and for a specific type of service; this creates the possibility of context-specific findings. For example, IT partners may be more inclined to innovate than maintenance partners, whose activities are usually more routine-like in nature. Our research should therefore be replicated in other industries and for other services.

 Second, it would be interesting to develop our results into testable hypotheses, which could then be investigated by means of large-scale follow-up studies in the form of surveys. The hypotheses could also be tested via in-depth contractual analyses, as to respond to the need for analyses based on contractual content ([Faems et al., 2008](#_ENREF_24); [Chen & Bharadwaj, 2009](#_ENREF_10)).

Third, we restricted our study to a specific type of contract, the PBC. Future research could conduct a comparative study of the effects on innovation of various types of contracts such as fixed-price and cost-plus/time and materials contracts. Such a study would determine whether the contractual characteristics of PBCs are different from those of other contract types. Other contract types may also lead to innovation, but perhaps through different mechanisms.

Finally, our study focuses on the effects of formal control on innovation and does not address other factors that may influence innovation, such as relational governance. IORs governed by incomplete contracts require other governance instruments (Al-Najjar, 1995). By keeping the contract open, organizations demonstrate that they trust their partners to deliver the service according to the agreed performance. Relational aspects such as trust therefore become important ([Mohr & Spekman, 1994](#_ENREF_54); [Monczka, Petersen, Handfield, & Ragatz, 1998](#_ENREF_55); [Wang & Wei, 2007](#_ENREF_72)). For example, Alpha allowed Kappa to take part in relevant steering committees. The interviewees in the Alpha–Sigma case emphasized the importance of the relationship via phrases such as “we can contact each other directly at any time,” and “it feels like friendship.” These relational attributes could also affect innovation. For example, parties that interact closely share know-how, which can positively affect innovation ([Im & Rai, 2008](#_ENREF_40)). Future research could therefore explore in more detail the interaction between (performance-based) contracts and relational governance elements such as trust.

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# Tables

Table 1: Main characteristics of inter-organizational relationships

|  |  |  |
| --- | --- | --- |
| **Characteristics** | **Case: Alpha & Sigma** | **Case: Alpha & Kappa** |
| Organization: Alpha | Large financial services firm |
| Turnover 2011 | Over 20 billion (€) |
| Number of Employees | Over 15,000 |
| Partners | IT services firm | Telecommunication and IT services firm |
| Turnover 2011 | Over 45 million (€) | Over 13 billion (€) |
| Number of Employees | Over 150 | Over 30,000 |
| Contract Initiation (year) | 2010 | 2011 |
| Contract Duration (in years) | 5 | 5 |
| Service Customers/ Users | Alpha’s Asset Management division | Alpha employees |
| Collaboration Type | Non-Equity | Non-Equity |
| Purpose of Collaboration | Managing IT applications | Providing telecommunication services |

Table 2: Triangulation

|  |  |  |
| --- | --- | --- |
|  | **Case 1: Sigma** | **Case 2: Kappa** |
|  |  |
| **Construct** | **Data Source a**  | **Cross-Source Agreement b** | **Data Source a**  | **Cross-Source Agreement b** |
| Term Specificity  | Interviews 1abcd,archival 2 | High | Interviews 1efg, archival 2 | High |
| Pay-for-Performance | Interviews 1abcd, archival 2 | High | Interviews 1efg, archival 2 | High |
| Risk-Aversion | Interviews 1abcd | High | Interviews 1eg | Moderate |
| Innovation | Interviews 1abcd, archival 3 | High | Interviews 1efg | Moderate |
| a: 1a/e = strategic manager of focal firm, 1b/f = operational manager of focal firm, 1c = strategic manager of partner firm, 1d/g = operational manager of partner firm. 2 = contract analysis. 3 = other documentb: High = all sources of data are in agreement; Moderate = at least two sources of data are in agreement |
|

**Table 3:** Data analysisfor variable innovation(N=No; Y=Yes; Blank = Information not to be found in this source)

|  |  |  |
| --- | --- | --- |
|  | **Contract** | **Interviews** |
| **Alpha STR** | **Alpha OPE** | **Alpha overall** | **Sigma STR** | **Sigma OPE** | **Sigma overall** |
| **Innovation** |  | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** |
| New service within a particular market |  | N | N | N | N | N | N |
| New way of interacting with the client |  | Y | Y | Y | Y | Y | Y |
| New/changed internal organizational arrangements to allow service workers to perform their jobs properly  |  | N | N | N | N | N | N |
| New product/technology |  | N | N | N | N | N | N |
| Faster service delivery |  | N | N | N | N | N | N |
| Cheaper service delivery  |  | N | N | N | N | N | N |
| Higher service quality  |  | Y | Y | Y | Y | Y | Y |

Table 4: Cross-case results

|  |  |  |
| --- | --- | --- |
|   | **Case 1: Alpha & Sigma** | **Case 2: Alpha & Kappa** |
| **Term Specificity**  | Low | Low |
| **Pay-for-Performance** | Yes | Yes |
| **Risk Aversion**  | Low | High |
| **Innovation** | Yes | No |
| **Granted Autonomy** | High | Low |

**Figures**

**Figure 1:** Theoretical model of the relationship between PBCs and innovation

**Figure 2:** Effects of PBCs on innovation

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