

# Performance-based contracting as an enabler of innovation

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## Abstract

Organizations need to incorporate innovation into their businesses as the dynamic business environment is faced with globalization and large fluctuations in the economy. One of the ways to engage in innovation is through inter-organizational relationships. Unfortunately, inter-organizational relationships frequently do not result in the expected performance and innovation. The primary way to govern inter-organizational relationships (IOR) is by means of a contract; yet, the majority of contracts are not conducive for innovation. A relatively new contracting type which is suggested to foster innovation is the performance-based contract. PBCs underline the outcome of the service rather than stating *how* to deliver it. As a consequence, PBCs leave more room for innovation. However, academic literature provides no guidance on how PBCs lead to innovation. By means of a literature review we develop a framework that outline how PBCs lead to innovation. We develop the statement that innovation hinges upon the collaboration between the partners, innovation incentives, and the provider's autonomy, creativity, and risk. These factors are enabled by the contract duration (long-term) of a PBC, its (low) specificity level, and reward schemes. Finally, relationship orientation and providers' risk averseness positively moderate the effects of contract duration on collaboration and providers' risk on innovation respectively.

**Keywords:** Innovation, performance-based contract, business services

## 1. Introduction

Highly dynamic business environments, large fluctuations in the economy and increased globalization force organizations to find new ways of gaining and sustaining competitive advantage. As a result, organizations need to incorporate innovation into their businesses (Ireland and Webb, 2007; Phan et al., 2009; Tether and Tajar, 2008). As services account for over 70% of employment in developed countries (De Vries, 2006), service innovation (innovation in the service concept, the client interface, the service delivery system/organization and/ or technological options (Hertog, 2000)) is increasingly being acknowledged as a strong contributor to economic growth (Hertog et al., 2010) and a sustainable source of competitive advantage (Olivia and Kallenberg, 2003).

There are wide ranging opportunities for organizations to engage in innovation (e.g. partnerships, joint venturing, strategic alliances, outsourcing and licensing). At the same time, many inter-organizational relationships suffer from lack of performance, opportunistic behavior, distrust and misunderstanding, and are prematurely terminated (Blomqvist, 2008; Logan, 2000; Mellewigt et al., 2007; Ryall & Sampson, 2003; Sampson, 2004). One possible explanation for these problems lies in the appropriateness of the contractual arrangements made, as the contract is one of the primary ways to govern inter-organizational relationships.

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However, the majority of contracts inhibits rather than facilitates innovation. As an exception, the Performance-Based Contract (PBC) is suggested to foster innovation. As a PBC underlines the outcome of the service rather than stating *how* to deliver it, this type of contract leaves more room for innovation. By allowing contractors to determine how to best accomplish the work, PBCs have been demonstrated to increase creativity and innovation in service delivery (Martin, 2002). Many researchers support Martin's (2002) claim (e.g. Kim et al., 2007; Ng and Nudurupati, 2010; Rhee et al., n.d.). Nevertheless, to our knowledge, scholars have not yet addressed the question of how a PBC leads to innovation. We therefore study the effects of PBCs on innovation and the mechanisms that take place for these effects to occur. This paper presents the results of an extensive literature review aimed at developing a conceptual model that describes how PBCs may lead to service innovation. In line with existing literature, we posit that service innovation hinges upon the degree of inter-organizational collaboration, innovation incentives, the partner's autonomy, creativity and the extent to which the partner bears risk. These aspects in turn are influenced by the characteristics of the contract, which in our research is performance-based. The contract characteristics selected as independent variables are contract specificity, innovation incentives and contract duration.

The outline of this paper is as follows: first, we provide a brief overview of the literature on performance-based contracts. We also explain our selection of contract characteristics to be included as independent variables in our research. The second part of the article consists of three sections each explaining how the three contractual characteristics of a PBC influence innovation. In these three sections we present the key findings of our literature review in a framework with related hypotheses. Finally, based on the conclusions and discussion about the limitations and further development of our framework in section 6, we end the article by proposing promising avenues for future research.

## **2. Performance-based contracting**

Contracts, in the sense of legally enforceable agreements, are fundamental institutions of economic and social life that have gained empirical attention by economic and business researchers only around four decades ago (Furlotti, 2007). Partners mostly draw up formal contracts for control and coordination (Mellewigt et al., 2007). Contracts have different characteristics; the variety of possible contract designs is virtually unlimited (Ryall and Sampson, 2003). They differ in, amongst others, their level of flexibility, transactional elements (e.g. remuneration and risk allocation), duration, complexity, and procedural elements (e.g. decision making, enforcement, rules and monitoring) (Furlotti, 2007; Lyons, 1996; Suchman, 2003).

A Performance-Based Contract (PBC) is a specific type of contract that can be argued to focus on the results that are to be achieved rather than the efforts to be put in. Academic literature on PBCs is focused on the logistics sector and various public procurement sectors. The amount of research that has been conducted on PBCs in these sectors however is limited compared to its use in practice. As stated by Martin (2002; 2007), in public procurement, the PBC in practice is outpacing theory. This is even more profound in the private sector in which PBCs, although gaining in importance, remain underexplored (Hypko et al., 2010). The literature that is available is primarily of a descriptive (cases-based) nature. As a result, there is no common agreement on the definition of a PBC, particularly in the context of the private sector. Hypko et al., (2010) conducted an extensive literature review to clarify the concept of PBCs. They propose that the basic idea of a PBC is that organizations contract for outcomes or performance goals rather than the inputs and processes to achieve this goal. Martin (2002) states that -despite the existence of sector-specific definitions- the underlying concepts are the

same. Martin (1999b, p. 8) proposes a consensus definition and defines a performance based contract as one that “focuses on the outputs, quality and outcomes of service provision and may tie at least a portion of contractor’s payment as well as any contract extensions to their accomplishment”. Hence, we define a PBC as a contract that ties payments to the outcomes, and hence the performance, of the service. Since we are interested in whether and how PBCs lead to innovation we focus on those contractual characteristics that can influence innovation. Contract specificity, contract duration, and reward schemes are emphasized in established theories of contracts (Furlotti, 2007) and are said to influence innovation (Panesar & Marquesat, 2008). Thus, in light of the definition of PBC and our focus on innovation, we expect that the contractual characteristics that could have an influence on innovation are its duration, specificity level, and innovation incentives.

### **3. Effects of the long-term nature of a PBC on innovation**

Due to the long-term nature of a PBC (Gruneberg, Hughes, and Ancell, 2007) and the commitment it requires from the partners involved (Rhee et al., 2009), both parties have to invest in the relationship. Successful implementation of PBCs largely depends on the extent to which the partners emphasize collaboration since a PBC entails a long-term contract (Rhee et al., 2009). Long-term relationships foster openness and increase commitment between the partners. The relational aspect is emphasized in the collaboration. Hence, the relationship is intimate and leans toward a partnership (Paneras & Marqueset, 2008). Therefore, PBCs explicitly underline the importance of a collaborative relationship with the provider. Whereas shorter relational exchanges that exclude relational elements rely on the efficiencies of market exchanges to maximize profits in a transaction, long-term relational exchanges rely on relational elements (Dwyer, Schurr, and Oh, 1987; Ganesan, 1994) like collaboration. As such, longer contract duration influences the behaviors of the partners during the relationship as it creates e.g. commitment (Seshadria and Mishrab, 2004) that might result in collaborative behavior among the partners. In addition, long-term exchanges are more likely to share similar norms and values and be more cooperative (Morgan and Hunt, 1994). Thus:

*H1A: The more a long-term orientation is present in a PBC, the higher the degree of collaboration between the partners*

#### *3.1 Moderation effect of relationship orientation*

However, given that collaborations entail human interactions behavioral aspects of IORs need to be considered. Researchers have posited that inter-firm exchanges take place in the context of continuity where relational attributes are key (Sarkaret al., 2001). Thus, in order to have a tight collaboration in place, we expect relationship orientation to play a significant role in the collaboration since it can built or destroy an inter-firm collaboration. This is especially the case in the service industry in which organizational employees directly interact with each other (Sin et al., 2005). Three key dimensions of relationship orientation have been highlighted in previous research as dimensions that differentiate relationship-based exchanges from transactional exchanges (Morgan and Hunt, 1994). These include trust, communication, and reciprocal commitment.

Trust is defined as the willingness of a party to be vulnerable to the actions of another party based on positive expectations regarding the other party’s motivation and behavior (Malhotra and Lumineau, 2011). It is the level to which each party feels he can rely on the integrity of the promise offered by the other party (Sin et al., 2005). Exchange relationships

featuring trust will be able to manage greater stress and will exert greater adaptability (Mohr and Spekman, 1994). Hence, trust encourages a close and successful collaboration.

Communication is described as the process by which informal and formal exchanging and sharing of information takes place (Anderson and Narus, 1990). It involves close interaction between individuals across the collaboration interface that might result in the sharing of information and know-how (Kale, Singh, and Perlmutter, 2000). A better communication and a higher level of information sharing leads to a better collaboration as it allows for e.g. better understanding, inter-firm learning, joint problem solving, and better coordination (Mohr and Spekman, 1994).

Commitment, also known as an 'exchange partner believing that an ongoing relationship with another is so important as to warrant maximum effort at maintaining it' is a critical element for relationship orientation (Morgan and Hunt, 1994: P. 23). It is the enduring desire to maintain the relationship, thus involving a long-term orientation such that partners abandon other short-term options in favor of strengthening this ongoing relationship (Dwyer et al., 1987). Reciprocal commitment acts as a powerful signal of relationship quality. Hence, commitment from both parties promotes a tight and successful collaboration.

These socio-psychological attributes embodied in relationship orientation are drivers for a strong collaborative relationship since they act as coordinating mechanisms and determine the quality of the relationship in the collaboration (Sarkar et al., 2001). It involves the pattern of interaction among partner firms that facilitates and allows for effective functioning of the IOR on a daily basis (Cullen, Johnson, and Sakano, 2000). Hence:

*H1B: The effect of a long-term orientation on the degree of collaboration is stronger if relationship orientation is present*

### *3.2 Collaboration effects on innovation*

From present literature on the influence of inter-organizational links on innovation it is clear that collaboration is an important source of innovation (Faems, Looy, and Debackere, 2005; Goes and Park, 1997). Different collaborative partnerships exist both vertically and horizontally with suppliers, customers, competitors, lead users, consultants, and universities and research centers (Chesbrough, Vanhaverbeke, and West, 2006; Dooley and O'Sullivan, 2007; Faems et al., 2005; Tether, 2002). As the importance of collaborative partnerships gained momentum, organizations have implemented various legal, governance and organizational structures like, among others, alliances, joint ventures, sourcing agreements, R&D consortia, subcontractor networks, coordinated contracting, long-term supply contracts and licensing (Argyres and Mayer, 2007; Goes and Park, 1997). The reasons for collaborative relationships having a positive effect on innovation are diverse. First, through collaboration, partners have access to complementary resources, which are unavailable or difficult to develop in-house, and which might lead to innovation and non-resident expertise (Dooley and O'Sullivan, 2007; Goes and Park, 1997; Sampson, 2004). Thus, when partners collaborate under a PBC contract they have access to complementary resources which has a positive impact on innovation. Hence:

*H2a: Collaboration between the provider and the organization positively affects access to complementary resources.*

*H2b: Access to the partners' complementary resources positively affects innovation.*

Second, collaborations lead to the transfer of knowledge (Dooley and O'Sullivan, 2007; Dyer and Singh, 1998; Goes and Park, 1997) which can be used to exploit existing knowledge

and explore new opportunities (Im and Rai, 2008). Collaborations can function as channels for transferring and creating new knowledge and they create mutual incentives to reveal information and share technology (Goes and Park, 1997). They provide organizations the ability for mutual learning, which stimulates the creation of new knowledge and contributes to the ability to innovate (Tsai, 2001). Explorative knowledge contributes to the innovation of products, services and of processes to coordinate the exchange, whereas exploitative knowledge sharing improves recognition of bottlenecks and new opportunities, enhances the ability to perform routine tasks, and reduces coordination costs (Im and Rai, 2008). Hence, collaborating positively affects innovation as each partner will bring in their own distinct knowledge and expertise that the other does not own, hence there is a higher probability that a novel ‘thing’ is created (Nooteboom, 1999). When the provider and the organization are actively collaborating, it is likely that knowledge sharing will occur. Thus:

*H3a: Collaboration among partners positively affects knowledge sharing.*

*H3b: Knowledge sharing among partners positively affects innovation.*

We can therefore argue that PBC, which necessitates increased need for collaboration due to its long term nature, might lead to innovation through complementary resources and knowledge sharing.

#### **4. Effects of low specificity of a PBC on innovation**

In real life, some contracts are very precise and have high levels of specificity whereas some contracts are ‘light-weight’ and face low levels of specificity (Saussier, 2000). Under high levels of specificity the exact actions to be taken are precisely described (Furlotti, 2007), thereby lowering the provider’s freedom in delivering the service. The central purpose of high contract specificity is to define the subject matter of the exchange in sufficient detail to create a shared set of rules, procedures, responsibilities, and expectations (Gilson as in Mooi and Gosh, 2010). On the other hand, under low levels of specificity the provider is flexible and unrestricted to specific actions. The contract is more flexible as it does not state how to fulfill the performance. When contracts entail low levels of specificity providers enjoy a certain degree of freedom in how to deliver the service and they are more likely to engage in a creative process towards achieving the performance metrics as they are not constrained by rigid rules (Amabile, 1998).

The main idea behind the PBC is to specify outcome (e.g. results and accomplishments) specifications. Therefore, an important element in PBCs is the clear separation between the organization’s expectations (i.e. performance goal) and the partner’s implementation (i.e. how it is achieved) (Kim et al., 2007). The contract specifies what is required, but the provider determines how to fulfill the requirement thereby maximizing provider autonomy in reaching the performance (Macfarlan and Mansir as in Kim et al., 2007). Under a highly specified PBC the partner is inhibited to take initiative, whereas a less specified contract is expected to increase initiative and creativity and leaves a certain degree of freedom in allowing the partner to determine how to achieve the performance. Thus:

*H4a: Low levels of specificity in PBCs positively affect the provider’s autonomy*

*H5a: Low levels of specificity in PBCs positively affect the provider’s creativity*

By granting autonomy, the provider can shape and influence the way the service is delivered. The provider can make changes to and innovate in the service. Hence, autonomy relates to innovation (Morris, Kuratko, and Covin, 2007). Allowing a certain degree of

freedom allows the provider to approach problems and performance metrics in a way which makes the most of their expertise and creative thinking (Amabile, 1998). Creativity, which is the creation of novel ideas, is crucial to innovation as it has been regarded as the building block for innovation (Liao, Liu, and Loi, 2010). Thus:

*H4b: The provider's autonomy positively affects innovation*

*H5b: The provider's creativity positively affects innovation*

As mentioned above, the provider is responsible for delivering the performance without being specified how to deliver it. Hence, due to low levels of specificity providers are faced with higher degrees of freedom. However, with an emphasis on outcome, rather than the process to achieve a certain result, the provider's liability increases under a PBC; they have more responsibilities and authorities and they bear more risk (Gruneberg et al., 2007). Risks borne by providers include among others defects, completion deadlines and quality issues. PBCs include these risks for providers as the responsibility of the performance delivery shifts to providers. However, higher levels of risk do not always positively impact innovation. By being paid for the delivered performance, hence facing the risk of not being paid if performance is not met, providers might be reluctant to engage in innovation. They will therefore favor solutions that have proved to work well in the past to meet performance goals (Florian and Gustavo, 2009). Thus:

*H6a: Low levels of specificity negatively affect provider risk*

*H6b: Provider risk negatively affects innovation*

#### *4.1 Moderation effect of Risk Aversion*

When engaging in innovation providers are faced with the risk that innovations might not result in the anticipated performance. However, attitudes toward risk differ among organizations. Risk averse organizations prefer relatively low risk and are willing to sacrifice some expected return in order to reduce the risk in outcomes, whereas less risk averse organizations prefer a relatively higher risk (March and Shapira, 1987). A risk averse provider will opt for status-maintaining decisions rather than high risk decisions. Hence, risk averse providers will not favor innovation since they do not want to take the risk that the innovation is not sufficient in delivering the performance for which they are being paid. We therefore expect that provider risk has a stronger negative effect on innovation when the provider is risk averse. Hence:

*H6C: The effect of provider risk on innovation is stronger the more risk averse the provider is*

## **5. Effects of innovation incentives of a PBC on innovation**

It is said that when efforts of one party influence the costs or benefits of the other party, contracts should have explicit incentives (Furlotti, 2007). One of the incentives to elicit desired behavior is through remuneration. Reward schemes are a contractual mechanism through which many goals are pursued (Furlotti, 2007). They provide incentives to adopt efficient behavior, promote efficient adaption, and balance different types of hazards (Furlotti, 2007). To grasp the notion of how financial incentives might elicit motivation to innovate, we turn to motivation theorists Campbell and Pritchard (as in Shepherd and DeTienne, 2005).

They argue that motivation is the decision of how much effort to put in, whether to initiate effort on a certain task, and how long to persist. Initiating effort and the level of effort are greatest when high levels of effort result in high levels of performance (Shepherd and DeTienne, 2005). The performance is in turn tied to e.g. being paid for the delivered performance. Having a system in place to reward new ways of achieving performance and targets encourages innovation and creates an environment conducive for continuous improvement (Panesar and Markesat, 2008). Researchers agree on this and have shown that there is a positive relationship between financial incentives and opportunity identification and innovation (Shepherd and DeTienne, 2005). We can therefore argue that engagement in innovation can be stimulated by incorporating financial incentives.

In long-term contracts usually there is little incentive for the partner to innovate, unless this is compensated for. This is the case because e.g. if the provider improves the service delivery effectiveness without being compensated for, it will result in higher expectations by including the new way of delivery as a contractual condition in a next contract (Panesar and Markesat, 2008). Hence, including motivational incentives in the contract is key in creating an environment conducive for continuous improvements (Panesar and Markesat, 2008). In PBCs rewards are linked to lowering costs and improving performance (Rhee et al., 2009). Hence, paying an incentive for higher levels of performance should be reflected in a higher quality or value of the service (Heinrich and Choi, 2007). Put differently, the provider invests in the improvement of the service, anticipating that the incentive payment will offset the costs associated with incurring these investments (Heinrich and Choi, 2007). Thus:

*H7: Financial incentives tied to innovation positively affect innovation*

Appendix A shows the conceptual model in which we posit that innovation is influenced by the degree of inter-organizational collaboration, the partner's autonomy, creativity and the extent to which the partner bears risk, and innovation incentives. These aspects in turn are influenced by the characteristics of the PBC.

## **6. Conclusion and discussion**

This paper was motivated with the observation that the majority of contracts inhibits rather than facilitates innovation in an inter-organizational relationship. A relatively new contracting type which is suggested to foster innovation is the PBC. A PBC underlines the outcome of the service rather than stating *how* to deliver it. Because academic literature provides no guidance on how PBCs induce innovation, a comprehensive literature review was conducted to show how PBCs lead to innovation. We analyzed which characteristics of a PBC influence the mechanisms that have an impact on innovation, after which we integrated it into a framework with related hypotheses. This paper suggests that innovation is influenced by the degree of inter-organizational collaboration, the partner's autonomy, creativity, and the extent to which the partner bears risk, and the incentives provided for innovation. These aspects in turn, are influenced by the characteristics of the contract, which in our research is performance-based. The contractual characteristics selected as independent variables are contract specificity, reward schemes, and contract duration. Finally, we theorized that relationship orientation and providers' risk averseness positively moderate the effects of contract duration on collaboration and providers' risk on innovation, respectively.

The key managerial relevance of this paper is the further understanding of what influences innovation. It is suggested that a PBC leads to innovation and hence, should be emphasized by managers wishing to achieve a competitive advantage through innovation when engaging in an inter-organizational relationship. Thus, organizations should be willing to invest in these

contractual characteristics and design the PBC in such a way that it is conducive for innovation.

Organizing for a collaborative partnership so that it would result in innovation requires a certain degree of relationship orientation on behalf of both parties. In such a relationship it is crucial that communication, commitment, and trust are established. This can be achieved by viewing the relationship not merely as a business transaction between two separate organizations but as a tight collaborative partnership by viewing the partner as an extension of your own organization (Panayides, 2006). The partners should closely work together in identifying innovations in the service. Furthermore, organizations should keep the levels of specificities low in their PBCs so as to grant autonomy and stimulate the partner's creativity to encourage innovation. However, managers should be cautious in allocating risks to the partner (caused by low levels of specificity) as high levels of risk might hamper them in investing in innovations. Hence, providers should balance increased risk against the possibility of higher rewards. Finally, to motivate the partner to invest in innovations, organizations should incorporate incentives linked to innovations within their PBCs.

This paper leaves ample room for future research on PBC and its influence on innovation. Since we based our research solely on previous studies which have presented, thus far, in a generic way that PBC leads to innovation, future research should seek to empirically test the hypotheses to determine whether and through what mechanisms PBCs lead to innovation. Furthermore, because PBCs in for profit-sectors are underexplored in academic literature, an important extension of our research would be to consider empirical research to identify other PBC characteristics which are not identified in the literature that could have an impact on innovation. In addition, more and more organizations are moving toward implementing these types of outcome based contracts in sourcing their services to capture the benefits of innovation. Insight into better understanding how to implement, manage and control PBCs to make it conducive for innovation is valuable for today's business. Being able to manage and control the inter-organizational relationship by means of a PBC is a valuable source in capitalizing on the partner's innovation in the long-term.

## 7. References

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**Appendix A: Conceptual Framework**