



A providers' perspective on supplier relationships in performance-based contracting



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ABSTRACT

As companies are concentrating on core competencies, they increasingly require their suppliers to provide full solutions rather than individual offerings. Many of these solutions, a specific one being “performance-based contracting” (PBC), require a systems integration approach from the providers, who strongly depend on their sub-suppliers' contributions. Yet, while research on PBC is increasing and some implications for the customer–provider relationship have been identified, no study has been undertaken to analyse the implications of PBC on the upstream suppliers, specifically how the relationship is impacted by results-oriented concepts such as PBC, how suppliers are aligned to the PBC outcome and how they participate in the performance-based compensation. This paper seeks to address this gap, combining a theoretical approach and an empirical approach. The challenges resulting from PBC on the supplier relationships of PBC providers are first analysed from an information economics perspective. Then, a case study approach with insights from typical PBC industries such as defence or aerospace was used to validate and enhance the study. The findings show that despite opposing assumptions in previous literature, PBC suppliers are not involved into the concept's specifics in a dedicated way, giving away the potentials of a proper alignment. Based on this, a governance portfolio model for the PBC providers' supplier relationships is developed. The paper is concluded with managerial and theoretical implications.

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1. Introduction

In an age of strongly increasing focus on core competencies, the inputs of external suppliers and providers play a major role in a company's success (Gottfredson *et al.*, 2005; van Weele and Rozemeijer, 1996). Lean or virtual enterprises are the result. These no longer require individual products and services from their suppliers, but rather look for the provision of integrated bundles of services and products (also “solutions” or “product-service-systems”) to solve a distinct customer problem (Meier, 2004; Vandermerwe and Rada, 1988).

Yet, despite the increased demand for solutions, research on how to procure services, specifically solutions, is still scarce, if at all existent (Ellram *et al.*, 2007; Nordin and Agndal, 2008). At the same time, buyers claim that buying product–service-packages is far more complex than the procurement of goods or “pure” services, and they claim that they feel less competent when

dealing with this complexity (CAPS Research, 2003; Smeltzer and Ogden, 2002).

One approach that specifically addresses this challenge is “performance-based contracting” (PBC). There, the buyers no longer specify the individual components of a solution (e.g., a machine and related services) but rather the desired outcome (as the value expected from the solution), whereas the suppliers' compensation is tied to successfully achieving this outcome (Kim *et al.*, 2007; Ng and Nudurupati, 2010). Typical examples are fixed rates per flight hours for aircraft providers or incentive contracts for increasing availability rates of defence systems. The operational responsibility for the solution's outcome is thus largely transferred to the provider(s).

Very often, providing an integrated solution will extend beyond the capabilities of an individual provider company. To actually relieve the buyer of the operational responsibility, it is recommended that a system integrator (or solution provider) coordinates the necessary suppliers and bundles their inputs (Randall *et al.*, 2010). For the sub-suppliers, such a system integrator might mean that they no longer have a direct link to the solution buyer (i.e., the customer) and vice versa; the system integrator thus assumes the key role in solutions provision, mostly by coordinating the sub-suppliers and functioning as the “information hub”

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between them and the PBC customer (Ahlstrom and Nordin, 2006; Hobday et al., 2005).

Interestingly, while the buyer–provider relationship has received at least some attention in the evolving research on PBC, the discussion on the upstream supply chain issues is basically limited to anecdotal comments (Hypko et al., 2010a; Lewis and Roehrich, 2009; Ng and Nudurupati, 2010). More explicitly, there appears to be a lack of dedicated research on if and how the system integrating providers of PBC involve their suppliers in the specifics of the PBC concept. This is despite the emphasis on the importance of the sub-suppliers in delivering complex solutions (Piercy, 2009; van Mossel and van der Walk, 2008).

Since communication and information exchange are critical sub-processes of the relationships to absorb the risk transfer in PBC (Datta and Roy, 2011; Ng and Ding, 2010), an information economic perspective is used to shed light into the complexities that arise between the system integrator, the PBC customer and the sub-suppliers. This is important as complex solution bundles such as PBC usually extend beyond an individual company's capabilities, and their providers thus strongly depend on sub-suppliers (Buse et al., 2001).

The aim of this paper is to address this gap by analysing the challenges that PBC providers are facing when involving sub-suppliers into PBC with a view on the concept's specifics, by providing insight into the current sub-supplier involvement approach of PBC providers and to analyse the implications of PBC on the provider–sub-supplier relationships.

With the provider–supplier relationship as the core analytical unit in service solution provision and procurement, the remainder of this paper is organised as follows: in the next section, the literature on service procurement, product–service systems and supplier relationships will be reviewed (Section 2). The specificities of PBC are then framed from an information economic perspective and the research questions are developed (Section 3). Preceded by a methodological discussion, Section 4 will contain case-based findings on the sub-supplier relationships of the PBC providers. These findings will be discussed in Section 5 and used to develop a PBC relationship governance model using relational contracting theory as the framework. The paper is concluded with a summary, including managerial as well as the theoretical implications.

2. Literature review and research questions

The topic of PBC is a multidimensional construct, thus various perspectives are necessary to approach the identified research gap. With PBC as a procurement strategy for intangible “outcomes”, the aspects of service procurement with reference to service management are discussed first.

Yet, for analysing PBC both the perspective of the buyer as well as of the provider are used in the current literature, whereas the latter is usually discusses how provider companies can interact with their customers (i.e., a marketing-based view). Thus, PBC is also positioned as a specific industrial marketing concept in the field of product–service systems (or “solutions”). Lastly, with relationships being emphasised as having a major role in procurement as well as in industrial marketing, supplier relationships represent another pillar of the analysis. Fig. 1 displays this as the framework concept for the literature review.

2.1. Service procurement

The procurement of services has some specifics compared to goods procurement, yet although this has been recognised relatively early, still major research gaps persist (Ellram et al., 2007;

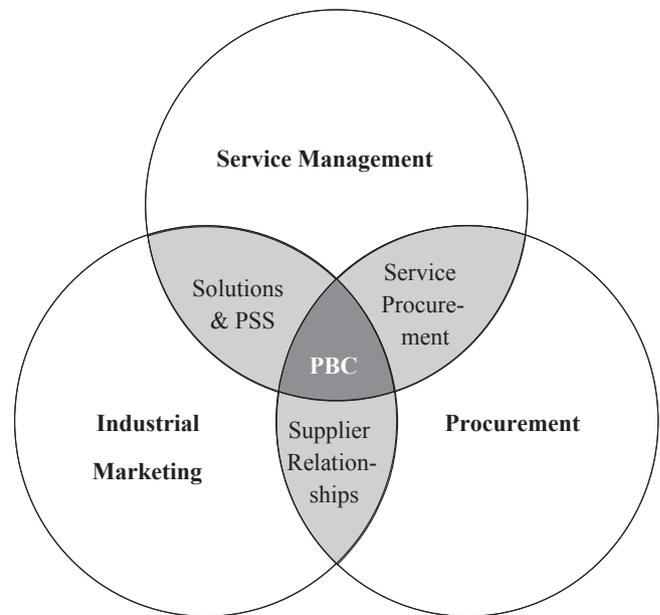


Fig. 1. Research framework for performance-based contracting.

Nordin and Agndal, 2008; Wittreich, 1966). The service characteristics of intangibility, heterogeneity, inseparability of production and consumption as well as perishability, pose the largest challenges for procurement (Ahlstrom and Nordin, 2006; Zeithaml et al., 1985).

With no physical product to put forward, the specification phase in service procurement strongly differs, as more interaction is required (Day and Barksdale, 1994; Selviaridis et al., 2011; Selviaridis and Spring, 2010; van der Walk and Rozemeijer, 2009). In the same context, the efforts for developing complete specifications and the resulting solutions to this issue, such as functional- or outcome-specifications, should be considered, moreover since linking supplier compensation to achieving an outcome also addresses the challenge of quality evaluation of purchased services (Axelsson and Wynstra, 2002; Doerr et al., 2005; Ellram et al., 2004; Holschbach and Hofman, 2010; Jackson et al., 1995; Parasuraman et al., 1985; Schonberger, 1980; Sonmez and Moorhouse, 2010; van Mossel and van der Walk, 2008; Zeithaml, 1981). These suggestions towards an outcome-focus implicitly lead to the application of more result-oriented procurement strategies such as PBC.

Another point for service procurement which may also occur in PBC constellations is the issue of involving sub-suppliers in direct contact with the actual provider's customer, (Axelsson and Wynstra, 2000; Choi and Wu, 2009; van der Walk and van Iwaarden, 2011).

It is commonly recommended that supplier relationships should be intensified to resolve some of the uncertainty inherent in service or solutions (Bitner, 1995; Fitzsimmons et al., 1998; Gulati and Kletter, 2005; Stremersch et al., 2001). A notable extension, somehow a forerunner of PBC, is Baker and Faulkner's (1991) recommendation to tie supplier compensation to service results in order to increase the buyer's value and ensure quality efforts. Nonetheless, PBC as a potential solution has played no significant role for service procurement research to date.

2.2. Product–service systems

The clear distinction of goods versus services that has characterised marketing for decades has been replaced by an

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