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Delivering integrated solutions in the public sector: The unbundling paradox

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ABSTRACT

The paper analyzes changes in suppliers' organizational structures to deliver integrated solutions by examining the bundling across different project phases with a focus on realizing risk transfer and through-life innovation. A multiple, longitudinal case study method is used to examine changes in integrated solution provision in Public Private Partnerships over a 15-year period. The study deploys rich data sets by combining 108 government reports with 38 interviews. Findings examine organizational transformation and suggest that as a response to the need to be competitive the solutions provider 'unbundles' the bundle of integrated solutions by creating sub-units to handle distinct phases. The paper questions whether bundling the different management and procurement phases of a major project into one contract is appropriate. Managers must weigh the transactional cost savings of dealing with a prime contractor against not only the transactional costs of dealing with distinct contractors for individual phases, but also the comparative ability of the two options to deliver.

1. Introduction

Public and private organizations are moving from selling or acquiring products to selling or acquiring complex, long-term integrated solutions consisting of bundles of interrelated goods and services (Davies, Brady, & Hobday, 2007; Galbraith, 2002). In response to a shortage of public funding, governments around the world have increasingly deployed Public Private Partnerships (PPPs) as the principal method for delivering public sector capital asset projects and associated services, aiming for the realization of performance benefits and innovation via customized integrated solutions (Zheng, Roehrich, & Lewis, 2008). This development towards integrated solution provision in the public sector, initially stimulated by market deregulations, offers unique opportunities and challenges to the capabilities of solution providers (Cova & Salle, 2007). One of these challenges being the solutions provider working with its customer to co-create value though customized solutions (Davies, 2004).

Central to the PPP concept is that the private sector will trade high ex ante capital investments costs and associated risks in return for a long-term and relatively stable income stream. The public sector benefits from facilities that would not otherwise have been created. If much of the literature takes a private sector and provider perspective on integrated solutions, the public sector is a good context for investigating the corollary of how customized solutions are managed by the customer. A starting point is suggested by Storbacka's (2011) empirical work that indicates that successful solution providers have the ability to balance between the need for customization and the need for standardization. It can be inferred that successful management of integrated solution provision by a public sector customer will also involve optimizing this balance between customization and standardization as appropriate to the resources of the project. In bundling together various needs (e.g. design, build, operate and upgrade as appropriate) the management of this dynamic has to cut across various typically distinct project phases to optimize value. In large scale PPPs normal contractual risks compound over time. To offset the risk involved in embedding a prime contractor for 30 years, the public client expects innovation and effective management of through-life costs or to apply Storbacka's approach to the customer, an interplay between customization and standardization dynamically through the life of the project. A key challenge for the public sector then is to ensure there are appropriate levers in place to transfer an appropriate level of risk and to sustain innovation over the decades of a PPP project. In turn, the embedded solutions provider faces the challenge during the multi-decade lifecycle of having to deploy distinct and phase-specific internal processes, capabilities and even business models (Caldwell & Howard, 2010; Lewis & Roehrich, 2009).

Viewed from both a customer and provider perspective, it becomes imperative that both parties possess the advanced contractual skills required by the integrated solution over the decades of PPPs and that the agreement contains the mechanisms to align and sustain that commitment such as cost and revenue sharing. While extant literature has studied the complexity inherent in Public Private Partnership projects, limited attention has been paid to the resulting complexity extended contractual periods create for the private sector delivering integrated solutions. Such issues lend themselves to a process, as opposed to a snapshot in time based methodology, as most likely to uncover insight into such issues. The other driver for long-term contracts

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is the scale of investment required to service these complex needs and the scale and learning necessary for a new solutions provider to begin to improve upon existing processes and practices.

The paper contributes through a relatively rare longitudinal perspective on the impact of long-term contracting for innovation and risk transfer on providers. The longitudinal research approach proved to be vital to investigate changes in the supplier's organizational structures and how the customer interacts to influence solution development over time. The study also contributes to our understanding of the emerging literature on public–private organizational change (Mahoney, McGahan, & Pitelis, 2009) and on the nature of long-term public–private interactions in integrated solutions provision. Thus, the overarching question this paper addresses is: what transformations in suppliers' organizational structures are required to deliver integrated solutions in long-term Public Private Partnerships? In addition, the research takes advantage of the longitudinal research approach to examine the corollary issue of the customer's management of customizing the solution over time, specifically addressing to what extent the public sector client is able to maintain the value of contracting for a bundle of goods and services from one provider across project phases. In terms of assessing the achievement of this value, as the construction of the hospital is now a given the focus in paper is on achieving contract value through the risk transfer and innovation elements as proxies for value. To answer these research questions, the study investigates the bundling of product/service offerings across different project phases in complex public-private relationships. The empirical element of the paper is informed by a longitudinal, multiple case study approach investigating PPPs. This approach enables generating rich qualitative and quantitative data sets (Yin, 2003) and studying processes unfolding over time, rather than merely seeking to illustrate cross-sectional variation (Van de Ven, 2007).

The paper is organized into six sections. Section 2 locates the paper in the literature on product bundling, integrated customized solutions and organizational structures. Section 3 discusses the methodological considerations for the longitudinal, multiple case study approach. Section 4 then presents the empirical findings across the investigated cases. Sections 5 and 6 discuss the findings of the research, present and elaborate on the development of integrated solutions in PPPs, and conclude by formulating implications for managers and future research.

2. Conceptual background

The following sections review the literature on product bundling, customized integrated solutions and their drivers. A conceptual framework is developed based upon this review of organizational and market structures for solution provision.

2.1. Moving from product bundling to customized integrated solutions

Product bundling, or commodity bundling, refers to “grouping related products together into a unified marketing offering that is intended to be more attractive than separate, individual products” (Lawless, 1991, p. 267). The bundling strategy is steered towards extracting customers' surplus by companies offering to undertake the complex activities of combining different components into a unified system (Schmalensee, 1984). Extracting costumers' surplus is achieved in two different ways, by bundling different products to meet different tastes (Stremersch & Tellis, 2002) or by using the monopoly power of one product to sell another in the bundle (McAfee, McMillan, & Whinston, 1989).

Bundles are mostly less risky and expensive to create, they help to expand a company's market share, open up new markets and offer a shorter product introduction time (Eppen, Hanson, & Martin, 1991). Adams and Yellen (1976) offer a classification distinguishing three (un-)bundling strategies which are: (i) pure components (unbundled offer), (ii) mixed bundling (components are available in a bundled as well as in an unbundled offer), and (iii) pure bundling (components are only available in a bundled offer). Scholars from different disciplines have contributed to product bundling strategies (Spiller & Zelner, 1997). For instance, economists mainly focused on the welfare consequences of product bundling and studied this strategy as a practice performed by a monopolist (Schmalensee, 1984). In contrast, marketing scholars investigated the importance of relationships with buyers, buyers' evaluation of product bundles and customer orientation in developing markets (Yadav, 1994). Bundling products can be found across various industries and distribution channels. For instance, the concept of bundling new with refurbished products is gaining increased attention in health care supply chains in the USA (Ross & Jayaraman, 2009). The authors report that several major health care systems in the US are purchasing refurbished and new health equipment in bundles to reduce costs.

Prior studies identified three key drivers that enable a firm to offer product bundling strategy: (i) taking advantage of complementarities existing between products, (ii) exploiting heterogeneous firm capabilities, and (iii) using modularity present in products. First, complementarities between products result from technological or regulatory changes (Spiller & Zelner, 1997). Managing the complex interaction between products is a knowledge-intensive task and customers may not possess the appropriate capabilities to create a unified system, thus, specialized companies need to offer complete systems (Spiller & Zelner, 1997). Second, the resourced-based view perspective considers firms to be a collection of resources (Penrose, 1959). Hence, new coordination of existing resources may create new bundles of products, enabling a firm to implement a product bundling strategy. Third, modularity helps firms to achieve a higher degree of flexibility in managing the different components of the bundle. In this way, the firm can offer a quick answer to the market, introduce new configurations of bundles and offer product upgrades (Baldwin & Clark, 1997). While bundling simplifies the range of offerings and can give economies of scale for providers; buyers enjoy a simplified choice, but may end up paying for elements that are not required (Spring & Araujo, 2009).

A product bundle is composed entirely of standardized components at a set price, and offered on the condition that the customer purchases the full line of internally developed products, irrespective of the differences in customer needs or capabilities (Porter, 1985). While solutions are based on product bundling logic, they go beyond traditional bundling by addressing the client's specific needs through customization (Davies, 2004; Storbacka, 2011). Davies et al. (2007) argues that “the solution to customer's needs is a customized adaptation of the basic modular system and its standardized components” (p.186). In other words, customized solutions can be achieved through the combination and recombination of standardized, reusable and easy-to-deploy components and modules including some degree of customization to solve each customer's individual needs (Hax & Wilde, 1999).

Empirical findings by Storbacka (2011) indicate that successful solution providers have the ability to balance between the need for customization and the need for standardization. The proportion of standardized and customized components in a solution varies according to the needs, capabilities and sophistication of the customer (Davies, Brady, & Hobday, 2006). While less experienced customers often require solutions comprised entirely of standardized offerings, more experienced customers can find their needs are not fully satisfied by standardized solutions (Davies et al., 2007). Over time, previously customized solutions become standardized solutions as solution providers learn to standardize innovative modules and components (Davies et al., 2006). This emerging perspective of integrated solutions favors the activities of bundling the offerings' elements over the degree of uniqueness of those elements as creating the customization and acknowledges development over time within the customers' view of what is a customized offering. This is a different integrated solutions perspective to that of others such as