

# Factors influencing the choice of solution-specific business models

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## Abstract

Services are receiving an increasing amount of attention in project-based firms. This has led project suppliers to employ new business models; the project supplier can offer services as an additional component of the project or take full responsibility for the operation and maintenance of the facility throughout its life-cycle. In this paper, we build on the idea that within the context of project-based firms, assessing business models requires a solution level of analysis which implies services as integral parts of project offering. We analyze business models in five solutions that were delivered by a power plant supplier firm. The evidence clearly demonstrates that there are variations in business models at the solution level. The paper further contributes to existing research by empirically identifying factors that influence the choice of business model for a particular solution. Finally, we formulate propositions on how these identified factors influence the choice of a business model for an individual solution. © 2011 Elsevier Ltd. and IPMA. All rights reserved.

*Keywords:* Project-based firm; Business model; Integrated solution; Solution specificity; Project business

## 1. Introduction

As in the traditional manufacturing business (Baines et al., 2009; Wise and Baumgartner, 1999; Vandermeuwe and Rada, 1988), also project-based firms, which focus a specific part of their activities in projects (Arto and Kujala, 2008), are placing more and more emphasis on services in their offerings (Arto et al., 2008). The term “servitization” is used to describe this trend from a pure project or product deliveries towards integrated solutions in which services have a leading role (Rothenberg,

2007; Vandermeuwe and Rada, 1988; White et al., 1999). These integrated solutions are bundled offerings of goods, services, knowledge, support, and self-service (Davies, 2004; Vandermeuwe and Rada, 1988). In addition, customers of capital-intensive systems are increasingly interested in the life-cycle costs of their investments (Stremersch et al., 2001). This has led project supplier firms to develop not only additional service components for their project deliveries but also solutions that seek to optimize the systems’ total operation and maintenance (O&M) costs during their life-cycle (Ivory et al., 2003; Wise and Baumgartner, 1999). These life-cycle solutions provide potential benefits because they maintain a larger share in the customers’ businesses, suppliers have more responsibility for long-term successes, project suppliers have more opportunities to maximize profit and can capture a larger portion of the overall value stream (Davies, 2004). Furthermore, it has been suggested that firms that have O&M involvement in the solutions’ use-phase should formulate business models that support life-cycle solution deliveries; both the project supplier firm and its customers can reap benefits with the design

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of integrated packages for optimal life-cycle performance (Ivory et al., 2003; Markeset and Kumar, 2004).

Despite the potential benefits of servitization, prior research suggests that there are a number of factors that may discourage firms from providing integrated packages with more services (Cohen et al., 2006; Mathieu, 2001b; Rothenberg, 2007; Vandermeuw and Rada, 1988; Wikström et al., 2009). General literature on business strategy and business models suggest that the firm's products and services, markets and customers, technology, capabilities, value proposition and revenue creation logic, or past performance and industry characteristics are factors to be considered in the choice of a business model (Chesbrough and Rosenbloom, 2002; Morris et al., 2005; Siggelkow, 2001; Slywotsky et al., 1998; Tikkanen et al., 2005). It has also been suggested that there are several contextual factors that affect the choice of business model for a project-based firm such as industry logic, the relative size and frequency of project deliveries and project novelty (Kujala et al., 2008). Prior research has focused on business models and their applicability at the firm level (Siggelkow, 2001; Tikkanen et al., 2005; Hedman and Kalling, 2003). However, it has been suggested that in the context of project-based firms business models should be studied based on individual solutions delivered to customers (Kujala et al., 2010). Even though Kujala et al. (2010) focused on the conceptualization of a business model at the solution level, empirical evidence concerning the factors that influence the choice of business model at solution level is scarce. Furthermore, despite the potential advantages and benefits of life-cycle solutions (Ivory et al., 2003; Windahl et al., 2004), the choice of business model for individual solutions is not straightforward; services impact project-based firms' business in various ways (Arto et al., 2008). For example, in some firms operational services may even cannibalize a more profitable transactional maintenance business (Arto et al., 2008). Similarly, even though life-cycle solutions are sometimes considered the only way to provide full customer satisfaction (Stremersch et al., 2001), they can also pose significant business risks for the client since operational service contracts are complex (Stremersch et al., 2001) and the customer has to rely on the supplier's expertise in managing and operating the solution (Helander and Möller, 2007). Some customers prefer to remain independent of their suppliers (Helander and Möller, 2007) making life-cycle solutions less attractive. In order to increase the understanding of why project-based firms implement different business models at the solution level, we address the following research question:

*What factors influence the choice of the business model for a solution delivery in a project-based firm?*

Building on prior research on business models at the firm level, the aim of this paper is to engage in an empirical analysis to identify the factors that influence the choice of the business model at the solution level. We have studied five individual solution deliveries at a power plant supplier company. In this paper we make a distinction between three different types of solutions: (1) transactional project deliveries, (2) project led solutions, and (3) life-cycle solutions. Transactional project deliveries are simple system deliveries to a customer with little

or no additional service components. A project led solution, includes a traditional project delivery as well as a long-term O&M service component, which are offered and sold to the customer as distinct components. In project led solutions, operational services are an important part of the offering, but the core delivery project is the main focus. Operational services that are offered by these firms are standardized and are provided to customers that are eager to outsource for flexibility reasons (Gebauer, 2008).

Finally, in a life-cycle solution the project and service components are offered as a single integrated solution, emphasizing the life-cycle performance of the offering. In the case of integrated solutions, the provider must identify and solve each of the customer's business problems by providing services to design, integrate, operate and finance a system during its life-cycle (Davies et al., 2006). Stremersch et al. (2001) approach solutions using a definition of "full service" that extends the traditional product offering so that it covers customer needs that arise after the delivery of a system. They state that a full service strategy dominates the provisions of goods and bundled or unbundled services. Furthermore, they see an offering as a solution that is viewed as a service activity and suggest that this is the only way to fully satisfy customer needs (Stremersch et al., 2001). Life-cycle solutions transform a project supplier's business model from a project delivery focus in to a project product's use-phase with a focus on the total life-cycle of the system. There is often a gap between what the supplier considers to be a solution and what is actually a solution for the customer (Tuli et al., 2007). From the supplier's perspective, solutions are often viewed as bundles of products, software, and services that create more value for customers (e.g., Galbraith, 2002). However, this view does not often capture the customer's perspective of a solution (Tuli et al., 2007). Instead, solutions should be viewed as a set of customer-supplier relational processes (Normann, 2001; Tuli et al., 2007) and a supplier should adopt a service-dominant logic (Lusch and Vargo, 2006; Vargo and Lusch, 2004) in its solution business. Life-cycle models emphasize the use-phase performance of a solution, which also illustrates how servitization blurs the distinction between manufacturing and service activities (White et al., 1999).

## **2. The solution specificity of business models in project-based firms**

The discussion of business models is usually strategy-related and subsequently takes place at the organizational level (Hedman and Kalling, 2003; Siggelkow, 2001; Tikkanen et al., 2005). Some strategy scholars, however, propose that the analysis of business models should not be restricted to the firm or business unit level. For example, Slywotsky et al. (1998) suggest that firms should be more careful when designing their businesses and design business models in an innovative manner, suggesting that there are potential benefits in employing multiple business models within one firm. Magretta (2002) and Chesbrough and Rosenbloom (2002) suggest that a firm can have several distinct business models simultaneously. Building

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