

# Business models in project-based firms – Towards a typology of solution-specific business models<sup>☆</sup>

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## Abstract

Project suppliers are taking increasing responsibility for their customers' businesses by servicing and operating their installed base of equipment. Simultaneously, the locus in value creation in the project suppliers' deliveries and business models has changed from short-term project deliveries to also include the operation of systems. We analyze five solutions delivered by a power plant supplier firm. The term 'solution' here refers to an offering which includes a project component and an after-delivery service component. We assess the distinctive features in the business models of the solution deliveries. This paper contributes to the existing knowledge by suggesting use of solution-specific business models with six key business model elements and by developing a typology of five solution-specific business models. The typology can also be used for assessing the performance of individual solutions. Our suggestion of a solution-specific business model is especially novel in the research of integrated solutions and business models: although existing literature argues that on a general level a firm can have several business models, prior research has not suggested the use of project-specific or solution-specific business models. Therefore, our finding of solution specificity of business models contributes significantly to the existing knowledge.

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## 1. Introduction

A trend towards more servitized offerings and life-cycle solutions is leading to a fundamental change in business models in the capital goods businesses. For example, in the power plant business, instead of concentrating on the initial cost of plant capacity measured in €/MW, some cus-

tomers increasingly base their investment decisions on the cost of the energy produced during the plant's life-cycle, measured in €/MWh. The trend towards globalization, de-regulation and outsourcing have led to the emergence of new types of customers whose primary interest is not just the acquisition of an investment project, but the purchase of the performance of the project product during its use-phase (Ivory and Thwaites, 2003).

Integrating high-value projects in a seamless solution with a long-term operations and maintenance (O&M) service requires a project supplier to radically extend the time span of its focus from a short-term project delivery to life-cycle care (Helander and Möller, 2007). Increasingly long-term business perspectives and a change of logic in earning, present challenges for the design of a project supplier's business model and for their organizational structure (Brady and Davies, 2004; Hobday et al., 2005). Servitization in the capital goods business pushes project suppliers to

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develop and to offer total solutions that seek to reduce the capital goods' operation and maintenance costs throughout their life-cycle (Wise and Baumgartner, 1999; Ivory and Thwaites, 2003). This way, project suppliers extend their focus into the use-phase of the systems and have extensive involvement in the operation and maintenance of their installed base of systems on their customer's behalf. By occupying a larger share and responsibility of the customers' businesses, project suppliers are also given the possibility of capturing a larger portion of the overall value stream and to gain more profits (Davies, 2004). For other customers, however, the capital cost of the system is still the most important criterion in the purchase decision and they consider operation and maintenance as their core capability. In addition to the new customer types, the varied needs of the different customer segments present challenges in designing a project supplier firm's business model for its solution deliveries. In this paper, our aim is to increase the understanding on various business models in project-based firms. We address the following general-level research question:

- What different types of business models have project-based firms implemented and what are their key characteristics?

We divide this research question into three sub-questions:

- Is it possible to assess business models at the solution-level in a project-based firm?
- What are the key elements of business models on the level of a firm and on the level of a single solution?
- Is it possible to identify a typology of solution-specific business models and can such a typology be used for evaluating the business performance of solutions?

The first sub-question seeks the existence of business models on the level of single solutions. Concerning the first sub-question, we acknowledge that the current business model research discusses business models on the level of a firm. However, the literature simultaneously argues that a firm can have more than one business model for different markets and customers. Therefore, since the typical business of a project supplier firm consists of a series of unique projects and services, we find it necessary to investigate whether the business models in project-based firms are specific to the delivery of each solution. The second and third sub-questions address the content and typology of such solution-specific business models: Therefore, these sub-questions facilitate a solution-level analysis of a project supplier firm's business models.

A solution offered by a project firm is defined as including both a project component and an after-sales service component. We first analyze the literature concerning business models and suggest six key elements of a firm-level business model which are used to examine and characterize the business models at the level of a single solution that is offered by

a project-based firm. We then construct a conceptual framework for the analysis of the business model characteristics of solution deliveries. The origins of the framework is built on the ideas and conceptual structures of installed-base-related solutions as introduced by Oliva and Kallenberg (2003). However, we use Oliva and Kallenberg's (2003) work only as a point of departure, and by instating a broader conceptual analysis and synthesis of service and solution literature, we construct a framework with four types of business models for solutions that is original in its content. We then assess the key characteristics of the business models of five distinct solution deliveries within a power plant supplier firm through the use of an embedded case study. The empirical study uses the structure of the six key elements for analyzing the business models in each of the five case solutions. Based on the results of the empirical study, we conclude that the business models used in the five solutions are indeed different and specific to each of the studied solution. Based on the results, we also suggest a typology of five types of business models. The paper makes four important contributions. First, we suggest six key elements for business models. Second, we develop a typology of five solution-specific business models and present the key characteristics for each business model type. Third, through our empirical analysis we show how the typology can be used to evaluate the performance of business models. Fourth, we find the solution-specific nature – or solution specificity – of a firm's several business models, and we argue that the analysis of business models needs to take place at the solution-level rather than at the level of the firm (or its business units) as is often suggested in the existing literature.

## 2. The business model concept: different perspectives and key components

In general, the discussion of business models usually takes place on the firm-level (Siggelkow, 2001; Tikkanen et al., 2005; Hedman and Kalling, 2003). However, some scholars propose that the analysis of business models should not be restricted to a firm- or a business unit-level only (Slywotsky et al., 1998; Magretta, 2002; Chesbrough and Rosenbloom, 2002). Slywotsky et al. (1998) encourage firms to more carefully design their businesses for their customers, and accordingly, to be innovative in how they employ profit models. Also the conceptualizations of business models presented by Magretta (2002) and Chesbrough and Rosenbloom (2002) suggest that a firm can have several distinct business models. Building on their arguments for business models that are designed at a more detailed level, we analyze business models on a solution-level in order to propose a framework for analyzing business models that are specific for separate solution deliveries.

### 2.1. Perspectives on business models

Although the concept of a business model is considered useful in management vocabulary (Tikkanen et al., 2005)

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