



---

# Working Paper Proceedings

---

**Engineering Project Organization Conference**

Cle Elum, Washington, USA

June 28-30, 2016

---

## **Unraveling Supply-Driven Business Models of Architectural Firms**

**Marina Bos-de Vos, Delft University of Technology, the Netherlands**

**Leentje Volker, Delft University of Technology, the Netherlands**

**Hans Wamelink, Delft University of Technology, the Netherlands**

### **Proceedings Editors**

**Jessica Kaminsky, University of Washington and Vedran Zerjav, University College London**



© Copyright belongs to the authors. All rights reserved. Please contact authors for citation details.

## UNRAVELING SUPPLY-DRIVEN BUSINESS MODELS OF ARCHITECTURAL FIRMS

Marina Bos-de Vos,<sup>1</sup> Leentje Volker<sup>2</sup> and Hans Wamelink<sup>3</sup>

### ABSTRACT

Architectural firms deliver services for various, unique projects that are all characterized by a high level of uncertainty. To successfully propose, create and capture value, they need business models that are able to deal with this variety and uncertainty. So far, little is known about the different business models that are used in architectural service delivery and how they enable or constrain firms to create and capture value in their projects. To continuously compete in a changing and competitive environment, this insight is much needed. In this research, a theoretical framework is developed to study the business of architectural firms. The framework is used to systematically unravel the business models for three types of value proposition that were identified from interview data collected at 22 Dutch architectural firms. The focus is on a supply-driven context. Findings highlight the importance of financial knowledge, capital-intensive partners, support of influential actors and a relationship with the buyer. Resources that are beneficial to the firm's value creation, can sometimes constrain the firm's value capture. The contribution of this research is a profound insight into the pitfalls and opportunities of business models for supply-driven architectural service delivery. It helps architectural firms to develop future business model alternatives and to enhance benefits from the offer of unique, creative value propositions.

**KEYWORDS:** business model, creative professional service firms, value capture, value creation, value proposition.

### INTRODUCTION

Architects are generalists who combine material from different domains of knowledge with creative powers to produce a design (Wang & Ilhan 2009). Although there are exceptions of highly specialized firms, the majority of architectural firms deliver a broad range of architectural solutions in different sectors and for a variety of clients. Architectural service delivery is strongly characterized by the element of surprise, because the value of the creative service and product is 'self-generated' by the architect, builder, customer and user (Hutter 2011). The potential value of the architectural service is often not clear in the beginning but evolves during the design process, which further adds to the wide range of uncertainty in property development (Reymen et al. 2008). Delivering their creative services for unique projects, architectural firms thus have to deal with great amounts of heterogeneity and uncertainty in their work.

To serve and satisfy their customers and to run a successful business at the same time, architectural firms need business models that are specifically able to deal with the high levels of variety and uncertainty. Their business models have to enable the proposal, creation and appropriation of value while the actual content and process of service delivery are always different and remain unclear until the end. So far, little is known about the different business models that architectural firms employ and how these work out under certain market

---

<sup>1</sup> PhD candidate, Delft University of Technology, Faculty of Architecture and the Built Environment, Department of Management in the Built Environment, Delft, the Netherlands, M.Bos-deVos@tudelft.nl.

<sup>2</sup> Assistant professor, Delft University of Technology, Faculty of Architecture and the Built Environment, Department of Management in the Built Environment, Delft, the Netherlands, L.Volker@tudelft.nl.

<sup>3</sup> Full professor, Delft University of Technology, Faculty of Architecture and the Built Environment, Department of Management in the Built Environment, Delft, the Netherlands, J.W.F.Wamelink@tudelft.nl.

conditions or for certain types of value proposition. To successfully respond to ongoing societal and industry-level changes (e.g. Duffy & Rabeneck 2013), architectural firms need to know how they can sustain or renew their competitive advantage (Teece 2010). A better understanding of the common pitfalls and opportunities in their business models is thus crucial.

The business model is a very popular concept to describe and explain how firms create, deliver and capture value (Osterwalder & Pigneur 2010). Although the concept is typically used in the area of non-creative firms and from a firm-level perspective (Zott et al. 2011), it is easily transferable to other contexts and other levels of analysis because of its generic character. Business model theory distinguishes between the value proposition, value creation and value capture of firms (Clauss 2016). The three interrelated constructs provide a powerful analytic outline to study how the business model of architectural firms is configured and how this configuration is influenced by the specific business related challenges that these firms face (Maister 2012, Winch & Schneider 1993a, 1993b). Since architectural firms operate on the basis of projects (Whyte et al. 2008), they employ project-specific business models that correspond with a certain scenario of service delivery instead of with the entire firm (Kujala et al. 2010).

In this study, we aim to develop knowledge of these project-based business models for architectural service delivery. We specifically focus on how supply-driven business models enable or constrain architectural firms to create and capture value. Based on business model theory from the field of management and literature on creative and professional service firms, we present a business model framework for projects of creative professional service firms (henceforth CPSFs). The framework distinguishes between the value proposition, value creation and value capture of a CPSF in a certain project and builds on the resource-based view of the firm (e.g. Hitt et al. 2001). The framework was used to analyze empirical data that were gathered from interviews with representatives of 22 Dutch architectural firms. We derived four types of value proposition from the interviews that are currently used by architectural firms and seen as desirable and promising business propositions for the future: ‘project assistance’, ‘product design’, ‘product development’, and ‘business case development’. The ‘project assistance’, ‘product development’ and ‘business case development’ proposition were used in a supply-driven context. Examples of existing supply-driven business models were systematically unraveled while going back and forth between literature and empirical data. We discuss how resources enable or constrain firm value creation and value capture for different types of value proposition.

Findings point toward the importance of financial knowledge, capital-intensive partners, support of influential actors and a relationship with the buyer to enable value creation by architectural firms in a supply-driven context. Based on the type of value proposition that was chosen, resources were either beneficial or disadvantageous to the firm’s value capture. We contribute to construction management and project organization literature by developing a business model framework for CPSFs and by providing insight into the constraints and possibilities of business models in a supply-driven context. This insight may help architects to develop supply-driven business models that are both satisfactory and profitable to the architectural firm. Moreover, our research produces knowledge on the business of project-based CPSFs. This is of significant scientific and practical relevance considering the growing importance of creative services and project-based organizing within society (Hutter 2011).

## **THEORETICAL BACKGROUND**

### **Business models**

Over the last decennia, business models have become an important area of interest in different research fields and the potential of the business model concept for both the academic world and industry has been widely acknowledged (Clauss 2016). Strategy researchers, for example, use the business model as a new unit of analysis to study how firms create and capture value (Zott et al. 2011). For entrepreneurship research, the business model provides a useful backdrop to assess and adapt core elements of a business (Morris et al. 2005). In practice, unique and new business models allow firms to gain a competitive advantage (Clauss 2016).

Considering the widespread attention, it is not surprising that the theoretical concept of the business model is still surrounded by a considerable amount of confusion. This confusion is visible in and also caused by the different definitions of the business model (Zott et al. 2011). Although scholars define the business model differently, they seem to agree that value is at its core. Shafer et al. (2005, p. 202), for example, define a business model as “a representation of a firm’s underlying core logic and strategic choices for creating and capturing value within a value network”. Zott and Amit (2010, p. 216) conceptualize the business model as “a system of interdependent activities that transcends the focal firm and spans its boundaries”. They too refer to value, as “the activity system enables the firm, in concert with its partners, to create value and also to appropriate a share of that value” (ibid.). Osterwalder and Pigneur (2010, p. 14) helpfully include the pivotal role of value in their definition: “A business model describes the rationale of how an organization creates, delivers, and captures value”.

Many scholars conceptualize the business model as a configuration of different subconstructs (Clauss 2016), which are, for example, referred to as building blocks (Osterwalder & Pigneur 2010), components (Shafer et al. 2005), elements (Teece 2010) or dimensions (Baden-Fuller & Mangematin 2013). From his literature review, Clauss (2016) recognizes three main dimensions that explain a firm’s business model, namely value proposition, value creation and value capture. The value proposition is aimed at solving customer problems and satisfying customer needs (Osterwalder & Pigneur 2010). This dimension thus contains the solutions for customers and how they are offered (Clauss 2016). Value creation involves how and by what means firms create value along the value chain (ibid.). It includes any activity that provides benefits that the customer is willing to pay for (Lepak et al. 2007). Finally, value capture explains how value propositions are converted into revenues (Clauss 2016). Value capture revolves around the firm’s revenue model and cost structure. A revenue model that is able to outweigh the firm’s costs is key to organizational sustainability (Bowman & Ambrosini 2000).

Building on the three main dimensions of the business model as identified by Clauss (2016) and expanding on the definition given by Osterwalder and Pigneur (2010), we define the business model as the rationale of how an organization proposes, creates, and captures value. Out of the array of aspects that play a role in a firm’s business model (see for example the overview of literature by Zott et al. (2011) and Clauss (2016)), firm resources seem particularly important. According to the ‘resource-based view’ in strategic management literature, resources represent a firm’s primary source of competitive advantage and thus define its ability to create and capture value. Resources are the tangible or intangible assets that are tied semi-permanently to a firm (Wernerfelt 1984), such as physical capital (e.g. equipment, technology etc.), human capital (e.g. managers, workers etc.) or organizational capital (e.g. controlling and coordinating systems, informal relations etc.) (Barney 1991). Capabilities are firm-specific, organizationally embedded resources, or ‘intermediate goods’

that are built by a firm to handle its combined resources in order to achieve a desired goal (Amit & Schoemaker 1993, Makadok 2001). Strategic management scholars who follow the ‘dynamic capabilities view’ consider this specific type of resource crucial to successful value creation and value capture over time as capabilities enable the firm to adapt to its environment (Achtenhagen et al. 2013).

### **Business models for CPSFs**

So far, the business model concept has been mainly used to gain knowledge on how manufacturing firms (e.g. Höök et al. 2015), traditional business firms or entrepreneurial firms (e.g. Zott & Amit 2007) do business. Although the knowledge-intensive industry and creative industry have both been identified as rapidly expanding industries with large potential for economic growth (Hutter 2011), the businesses of firms operating in these industries has been significantly underexplored. The distinctive characteristics of these types of firms, such as the ability to manage creativity (Andriopoulos 2003), are becoming increasingly relevant to other firms (Von Nordenflycht 2010). Hence, a better understanding of the value proposition, value creation and value capture of CPSFs is of great value to entrepreneurs and to scholars involved in organizational research.

Professional service firms (PSFs) are a specific category of knowledge-intensive firms that are hired by their clients for their expertise and skills to work on unique problems (Greenwood et al. 2005, Løwendahl 2005, Von Nordenflycht 2010). CPSFs are recognized as a subset of PSFs by multiple scholars. Canavan et al. (2013) ground the distinction from other PSFs in the different strategies for growth and different human resource needs of creative PSFs. Whereas PSFs are oriented towards the delivery of specialized services to their customer, creative PSFs may deliver both services and a product. As CPSFs face both commercial and professional goals (Maister 2012), their value proposition, value creation and value capture extends beyond the traditional business interaction of perceived customer value and fee (Bowman & Ambrosini 2000). It also involves professional value (Bos-de Vos et al. 2016), such as reputation (Greenwood et al. 2005), knowledge development (Løwendahl et al. 2001) or work pleasure.

The work of CPSFs is often organized in projects because of the complexity and high level of customization that are involved (DeFillippi et al. 2007). The interaction with other stakeholders in project based constellations (Jones et al. 1998) helps firms to deal with the heterogeneity and uncertainty of their projects. Business model research of project businesses has only recently started to develop (e.g. Wikström et al. 2010). Kujala et al. (2010) support the view that a firm can have multiple business models and argue that the business model analysis in project-based firms needs to take place at the project-level rather than at the firm-level. Following the work of Oliva and Kallenberg (2003), they develop a typology of project-specific business models that is determined by the customer value proposition and the firm’s pricing logic. The value proposition, which is used for the value creation, is divided into product-oriented services and process-oriented services; the pricing logic, which is used for value capture, is based on transaction-based services and relationship-based services (Kujala et al. 2010).

In this study, we expand on existing business model literature and develop a framework to understand the business models of CPSFs. The framework is related to a project instead of to an entire firm (Kujala et al. 2010) and is useful to study the relationship between the firm’s value proposition, its value creation and its value capture in the respective project. The value proposition refers to what the firm offers the customer in anticipation of the customer’s needs or desires. We distinguish between process services and product services. Value creation refers to how the CPSF creates value for the customer (and possibly also other

stakeholders) based on the services that are proposed. We include the firm’s resources as an important mean for value creation. Resources influence the amount of value that the firm is actually able to capture. Based on earlier research (Bos-de Vos et al. 2016), our framework expands on the classic, money-based definition of value capture that is used in management literature (e.g. Bowman & Ambrosini 2000) and includes professional value as a second dimension of value that can be appropriated by CPSFs. Professional value includes all the non-monetary elements that are important for the firm’s existence and survival, such as reputation, knowledge development or work pleasure (Bos-de Vos et al. 2016). Monetary value is the part of the firm’s value capture that is referred to in management literature and that is of substance to all types of for-profit firms. It includes firm revenues and profits (Bowman & Ambrosini 2000).

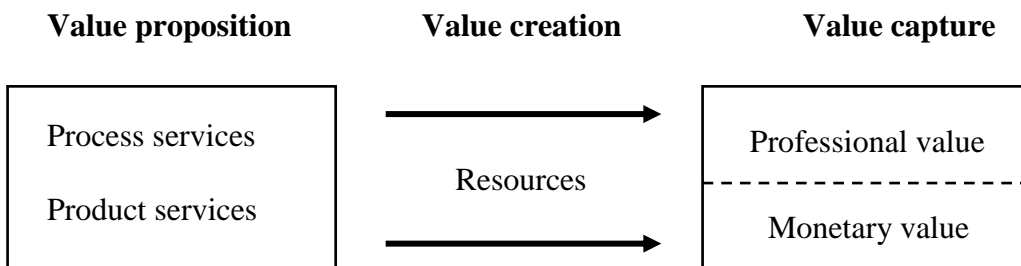


Figure 1: business model framework for CPSF project

## RESEARCH APPROACH AND METHODS

We used a qualitative research approach to expand on the information available in literature and to develop a profound understanding of existing business models in architectural service delivery (Miles & Huberman 1994). Different data types were collected to limit common method bias (Podsakoff et al. 2003). Our primary data source consists of 28 face-to-face interviews with representatives of 22 architectural firms. We chose to conduct the interviews on the basis of a semi-structured interview protocol. In this way, we were able to address different topics from literature while leaving room for the respondents to come up with additional themes. The secondary data sources include information from the firms’ webpages; organizational schemes and project-related information provided by the respondents; and information gathered from the business press. These materials were used to reinforce or question the findings of the interviews.

### Sample selection

Our research was based in the Netherlands. In the Netherlands, architectural services are delivered by architectural firms, self-employed architects, and special divisions of governmental institutions (e.g. municipalities) or for-profit organizations (e.g. engineering firms, contractors). As the purpose of our research is to develop knowledge about the business models of CPSFs, we restricted our interview sample to architectural firms.

The aim for the interview sample was to cover the wide range of architectural services that are provided by Dutch architectural firms. We searched for firms with different age, size and technology policies (Mintzberg 1979). The 22 firms that we selected were, at the time of the interview, between 1 and 87 years old, consisted of between 3 and 120 people (Vogels 2015), and used either 2D drawing or 3D modelling technologies. The firms had a design-

oriented or service-oriented strategy (Coxe et al. 2005) and were located in different geographic areas of the Netherlands. We contacted the firms by telephone to explain the purpose of our research, the topics of the interview, and the interview procedure. We also asked for the person who was able to represent the firm. Five firms were represented by two persons as the input of both persons was necessary to cover the interview topics. An overview of the relevant information, including our guarantee of complete confidentiality and anonymity, was sent to the firm representatives by email. Two firms declined the invitation to participate due to time constraints. These firms were replaced by similar alternatives.

### **Data collection**

From January 2014 until January 2015, we conducted 28 face-to-face interviews with the representatives of the firms. The respondents knew all about their firm's way of doing business. Interestingly enough, none of the firms possessed any documentation regarding their firm's business model or the business model that they used for their projects. Out of the 22 firms, 16 firms were represented by one or two of the owners, 3 firms by an owner and an employee, and 3 firms by one or two employees. The majority of the owners were architects; two were engineers and one was an urban planner. The employees included three architects, two engineers, a BIM manager and a business developer who had a background in architecture.

The semi-structured interview protocol included questions to address the architectural firm's business model based on the theoretical constructs 'value proposition', 'value creation' and 'value capture'. Regarding value proposition, some of the questions that we asked included "Which services or products is your firm offering to potential clients?", "Why does your firm specifically chooses to offer these services or products?", and "Do you expect your firm's value propositions to change in the near future, and why?". To gather as much information about value propositions as possible, we did not connect our questions to projects. However, we did ask the respondents to support their answers with project-related examples. Our questions regarding value creation and value capture were all related to specific projects of the firms. Regarding value creation, we asked respondents questions like "Which competences, resources or partnerships did your firm need to create value for the client in this project and why?", "How did these competences, resources or partnerships influence the value that was created in the project?", and "Which competences, resources or partnerships was your firm missing to create value in the project and why?" The questions that we asked regarding value capture included "How did the project generate income for your firm?", "Did your firm make profit on the project and why (not)", but also "How did the project influence your firm's reputation?", and "Were you happy with the way the project turned out and why (not)?" We primarily used open-ended questions and asked the respondents to provide concrete examples of the difficulties or opportunities that they experienced in their firm's value creation and value capture.

Each interview lasted between one and two hours. During the interview, we made handwritten notes to follow up on interesting topics and to ensure that information was gathered around the constructs 'value proposition', 'value creation' and 'value capture'. All the interviews were audio taped and transcribed verbatim. This resulted in 821 pages of interview data. The transcripts were checked by the respondents and the comments, which were only related to personal names, were implemented.

### **Data analysis**

We systematically analyzed the interview data with the help of our framework, which we further developed while going back and forth between literature and empirical data.

Software program MAXQDA was used as a supporting tool for our analysis. Our data analysis procedure consisted of four steps. In a first step, we derived value propositions from the data. The value propositions that were seen as currently satisfactory or promising propositions for the future were divided into overarching categories, which we refer to as ‘value proposition types’. In a second analytical step, we looked into the value creation of the different projects that were mentioned. More specifically, we searched for the resources that were critical for successful value creation or were mentioned because they constrained value creation in the project. In the third step, we focused on the architectural firm’s value capture within the different projects. We identified the resources that enabled or constrained value capture and looked for explanations. Finally, we searched for similarities and differences across the projects to build theory. In this fourth step, we identified common opportunities and pitfalls for each of the value proposition types in a demand- and supply-driven context, which we supported with examples from multiple cases. The examples are comparable on a general level and contribute to the knowledge development around a certain business model for architectural service delivery. In this paper, we include the business models that were used in a supply-driven context. A discussion of demand-driven business models will be the focus of a next paper.

## **FINDINGS**

The interview data reveal that architectural firms saw current and future potential in four types of value proposition, namely ‘project assistance’, ‘product design’, ‘product development’, and ‘business case development’. Project assistance includes a broad range of process-related services that are delivered to facilitate the start or further development of an urban area or real estate development. Product design refers to a variety of product-oriented services that are delivered to come up with a design of a product, such as an urban plan, building, or interior. Product development goes further and also includes the process-oriented services that are needed to realize the designed product. Finally, business case development consists of the services that are necessary to design and realize a marketable product, which has its own revenue stream. Based on the projects that were mentioned by our respondents, we found that the ‘project assistance’, ‘product development’ and ‘business case development’ type of value proposition were used in a supply-driven context.

### **Supply-driven value propositions**

Two of the 22 architectural firms used a ‘project assistance’ value proposition in a supply-driven context. One firm looked for suitable locations, tried to connect potential partners and tried to gain funding for the development of private clinics in Germany. The other firm offered very comprehensive project management services to potential clients, because many client organizations do not have the knowledge or expertise to manage the development plans that they are facing. Services of the firm included land negotiations and financial plans. The owner of the firm said that his firm’s value proposition was much more interesting to a potential client than a similar proposition of a project management agency. First, his firm was able to offer the services for a substantial lower fee (the architectural firm’s fee was only five percent of the building costs, whereas a project management firm would ask for ten percent of the total investment). Second, the architectural firm provided the services from a design perspective. In other words, a project feasibility check by the architectural firm would also include the possibilities of the project’s programming and design, whereas a project management office would not be able to consider these aspects adequately.



The ‘product development’ value proposition was chosen by four firms. Two firms proposed a new apartment building to potential buyers. Their aim was to sell the design of the building directly to the end-users and to make sure that the firm would have a substantial role in the building’s realization. The owner of one of the firms described his firm’s value proposition as the design of “affordable but special dwellings” in which the buyer, who is also the end-user, has a direct relationship with the architect. In this way, the firm offered potential buyers the opportunity to become involved in and to influence the design of their own house, something that is only possible to a very limited extent in regular housing projects in the Netherlands. The two other firms offered to design and realize the transformation of existing buildings.

In the interviews of two firms, we found projects in which a ‘business case development’ type of value proposition was chosen. One of the firms offered potential investors a value proposition that consisted of the profitable and attractive transformation of existing real estate. The aim was to demonstrate how architects are able to add value to society by upgrading parts of the city in unexpected ways. The firm set up a business plan for the transformation of an old office-building that was on the list to be demolished. Their design would both generate societal value and money. Another firm offered energy scans to inhabitants. The scans would result in small renovations that the architectural firm could perform and would decrease the inhabitant’s energy bill.

### **Value creation in a supply-driven context**

The interview data reveal that value creation on the basis of a ‘project assistance’ proposition includes many managerial and calculation activities that all require adequate financial knowledge. To illustrate this, we use an exemplary case in which the architectural firm offered project management services to the board of directors of a school who wanted to expand on their existing real estate. According to the respondent, the firm had to possess ‘more knowledge than someone else’ to acquire the work. The firm’s financial knowledge convinced the client that the people of the firm knew what they were talking about. It thereby empowered the firm to negotiate a substantial involvement in the development of the project without the interference of other actors. The financial knowledge was also necessary to create exactly the kind of value that the client needed. It enabled the firm to come up with the most suitable and less expensive way for development.

In order to create value with a ‘product development’ type of proposition, architectural firms especially need financial knowledge to study the feasibility of a certain location and product idea. One of the firm owners emphasized the importance of knowledge about property calculations and investment calculations. He either asked employees who were specialized in calculating to expand on their regular work by including earlier stage calculations or attracted partner firms when it got really specific. As the architectural firms in our interview sample did not own any land, property or substantial financial resources, they needed capital-intensive partners to gain access to these resources in order to realize their products. One of the firm owners who wanted to realize a new apartment building used his connections with the local municipality to find vacant and suitable plots for a project. The other firm initiated partnerships with a developer and a developing contractor as these actors had access to financial resources and ownership of land. Both firms were collaborating with other architectural firms to share their knowledge and one of the owners even believed that a constellation of multiple architectural firms could be an opportunity to avoid a capital-intensive partner. The supply-driven activities were initiated ‘bottom-up’ and did not fit into the standard regulatory frameworks. Thus, the architectural firms were dependent on the support of influential actors for the realization of their projects. Many of our respondents

mentioned that municipalities had to become more ‘guiding’ to facilitate supply-driven initiatives of smaller organizations such as architectural firms. They criticized municipalities for being mainly interested in deals with bigger organizations. One of the firms had managed to become a strategic partner of the municipality. This partnership helped the firm to get its projects realized as the municipality’s involvement created a large support base for the project.

Both financial knowledge and capital-intensive partners seem very important for the value creation with a ‘business case development’ proposition. Financial knowledge is crucial to develop a well-thought-through business case that allows a project to generate revenues, as is illustrated by the transformation project. In this project, the architectural firm gained the necessary financial knowledge to come up with a business case by collaborating with a young real estate developer. The business case involved a return of investment after five years by means of rental incomes. The project shows that architectural firms need capital-intensive partners to get access to land/property and capital and realize their projects. The firm contacted the owner of the property and asked whether they could use the property for five years. As a demolition permit had already been granted and the property did no longer represent any book value, the architectural firm was able to convince the owner to collaborate. To acquire the financial resources for the transformation, the firm set up a payment arrangement with several contractors. The contractors paid for the entire redevelopment and received their investment back during the five years.

### **Value capture in a supply-driven context**

Our interview data show that the monetary value capture for a ‘project assistance’ type of value proposition is particularly dependent on financial knowledge and a relationship with the buyer. In the exemplary case for the school, the firm used its financial knowledge to come up with a profitable project management fee. The fee was substantially lower than the average fee of a project management firm, but still 1.5 times the amount of the firm’s regular fee. The fee was even more profitable than it appeared as it covered a large number of activities that the firm would have to perform anyway. The firm was now hired to calculate the project’s building costs, which made regular activities such as checking the building’s calculation and responding to questions about it superfluous. In another project where there was no buyer involved, there was also no money available. In this case, the architectural firm delivered the ‘project assistance’ services for free. The firm owner said that he recognized possibilities for future work in which he wanted to invest. The firm needed a relationship with the buyer to actually capture these work opportunities and turn them into professional value. In the school case, the pleasant architect-buyer relationship that was developed on the basis of the ‘project assistance’ proposition convinced the client to hire the architect to do the design and engineering work as well. In this way, the relationship with the buyer helped the architectural firm to expand its portfolio and to strengthen its reputation. A relationship with the buyer is thus important for the professional value capture of architectural firms.

The interviews show that monetary value capture from a ‘product development’ type of proposition is severely hindered by the involvement of capital-intensive partners, while a relationship with the buyer enables the capture of both monetary and professional value. In one of the apartment cases, the developer that provided access to land and capital was unwilling to pay for the lead architect’s hourly rate of 150 euros. According to the architect, the developer considered him ‘an artist’ and the hourly rate was inappropriate. Although the architect stated that the rate was both reasonable and necessary because he had created an entire business plan for the project, he was still struggling to convince the developer at the time of the interview. One of the firm’s other cases was facilitated by a developing contractor.

The architect was in direct contact with the director of this small family business and explained that it was probably because of this personal relationship and the small size of the firm, that the buyer agreed that the architectural firm should be able to make a decent living out of it. This indicates that a relationship with the buyer can create a support base for value capture, especially when it is a relationship on a personal level and with an influential person inside the organization. Professional value capture from a ‘product development’ value proposition appeared to be more important and easier to pursue than the monetary value capture. One of the firm owners said that for him it was more about the buyers than about the money: “New people every week, who are all in love with your project. What more do you want? That’s just incredibly cool, isn’t it?” This statement and similar others provide evidence that a relationship with the buyer contributes to the work pleasure of architects, which can be seen as an important part of professional value capture by architectural firms. Moreover, because the architect was in contact with a lot of interested buyers, the firm gained bargaining power to ask a higher fee from the project’s capital provider and thus to enhance its monetary value capture.

In scenarios with a ‘business case development’ proposition, monetary value capture is enabled by financial knowledge and largely constrained by the involvement of capital-intensive actors. Financial knowledge enables firms to generate income or save costs from the revenue stream that is created in the project. The firm of the transformation case saved on its monthly expenses by renting the property that they developed for only a reimbursement of expenses. Although the project was indeed able to generate money, it turned out less profitable for the architectural firm than anticipated. The project was taken over by another investor as they recognized the money stream that was involved. The interference of this new capital-intensive partner made the architectural firm’s monetary value capture very difficult as the firm did not receive any monetary compensation for the idea and extensive service delivery. In the end, the project had been an interesting study for the firm. However, the architectural firm still needed its regular projects to make money. Based on the interviews, we suspect that the difficulty of monetary value capture is complicated even further by the importance of professional value capture. The architect said that, more than anything, they had just wanted to prove the feasibility of their idea. This shows that the firm was especially interested in making a statement and societal impact as an architect. It seems likely that the strong professional drive prevented the firm from making clear business agreements in their initial partnership, which took its toll when an unexpected actor entered the arena. Regarding professional value capture, the interview data show evidence that financial knowledge is influencing the work pleasure of firm members. The firm owner experienced a decreased work pleasure, because she was involved in so many managerial activities. She stated that she absolutely did not want to do a similar project a second time. During the project, she had to be everything at the same time: the developer, the facility manager and the architect. It generated huge amounts of stress and in the end she wondered for who she had been doing it. In the future, she and her partner just wanted to focus on the core of their business: “the design thinking”. This shows that a professional drive to be involved in all the activities that are key to the development of a business case is absolutely necessary for firms who offer this type of value proposition.

*Table 1: Pitfalls and opportunities of supply-driven business models*

<b>Type of value proposition</b>	<b>Project assistance</b>	<b>Product development</b>	<b>Business case development</b>
<b>Value creation</b>	<p><i>Financial knowledge</i> Provides ability to acquire project and to create the right kind of value for the buyer</p>	<p><i>Financial knowledge</i> Enables firm to study product’s feasibility</p> <p><i>Capital-intensive partner</i> Provides access to land/property and capital to realize the project</p> <p><i>Support of influential actors</i> Facilitates the (timely) realization of a project</p>	<p><i>Financial knowledge</i> Provides ability to generate a revenue stream within a project</p> <p><i>Capital-intensive partner</i> Provides access to land/property and capital to realize the project</p>
<b>Monetary value capture</b>	<p><i>Financial knowledge</i> Enables firm to ask a profitable fee</p> <p><i>Relationship with buyer</i> A buyer with money is necessary to cover the firm’s expenses</p>	<p><i>Relationship with buyer</i> Provides support base or bargaining power for fee negotiation with involved partners</p> <p><i>Capital-intensive partner</i> Hinders capture of money as firm is not seen as a party of interest</p>	<p><i>Financial knowledge</i> Provides opportunity to include firm revenues or savings in the project’s revenue model</p> <p><i>Capital-intensive partner</i> Hinders capture of money as firm is not seen as a party of interest</p>
<b>Professional value capture</b>	<p><i>Relationship with buyer</i> Assisting a buyer helps to generate work and to expand firm portfolio and reputation</p>	<p><i>Relationship with buyer</i> Excited buyer increases the work pleasure of the architect</p>	<p><i>Financial knowledge</i> Managerial and financial activities reduce the work pleasure of design-oriented architects</p>

## CONCLUDING DISCUSSION

This paper contributes to the theory development of business models in the project-based, creative service industry and the architectural field in particular. It specifically adds to construction management and project organization literature by highlighting the pitfalls and opportunities of supply-driven business models for architectural firms. We show how resources that are crucial for value creation can also complicate the monetary or professional value capture of the architectural firm.

Based on theory, we proposed a business model framework for project-based CPSFs. The framework distinguishes between the value proposition (process services and product services), value creation, and value capture (professional value and monetary value) of a CPSF within a project. We used the framework to systematically unravel the supply-driven business models for three types of value proposition, namely ‘project assistance’, ‘product development’, and ‘business case development’. We derived the value proposition types and exemplary cases from interview data, which we gathered at 22 Dutch architectural firms.

Our analysis demonstrates the importance of four resources in supply-driven business models. First, we show how financial knowledge helps architectural firms to turn their value propositions into work, to negotiate profitable fees, and to come up with profitable business cases for projects. Financial knowledge thus seems one of the keys to successful service

delivery in a supply-driven context. However, the interviews provide evidence that the deployment of this knowledge really needs to fit the firm. Although some architects are perfectly happy with a more financially-oriented way of working, others believe that it leads away from their core business. Hence, architectural firms need to consider the implications of a certain value proposition before they engage in service delivery.

Second, we point out that capital-intensive partners are crucial to create value from a ‘product development’ or ‘business case development’ type of value proposition as they provide access to land/property and capital. However, the involvement of such partners also seriously hampers firms to capture money. This suggests that architectural firms need both a strong financial drive and a high level of persuasiveness to ensure that partnerships with these kinds of actors are profitable to the firm. Based on our interview data, we suspect that firms will especially benefit from capital-intensive partners that are willing to support the architect’s goals. Some actors outside the construction industry may fit this requirement surprisingly well.

Third, the support of influential actors, such as municipalities, is necessary to facilitate the realization of ‘product development’ and ‘business case development’ propositions. Strategic partnerships with these kinds of actors may be extremely helpful for value creation, as pointed out by one of the respondents. We believe that the inclusion of added value for influential actors in the value propositions of architectural firms may lead to mutually productive partnerships and ease supply-driven service delivery by architectural firms.

Finally, we found that a relationship with the buyer — which is not really necessary to create value — is very important for the firm’s value capture. For the ‘project assistance’ value proposition, it represents a condition to generate income and an opportunity to acquire new work. For the ‘product development’ value proposition, it increases the firm’s bargaining power to negotiate a fee. It also ensures work pleasure and thus professional value capture. These insights suggest that firms should be extra cautious to engage in service delivery without the involvement of a buyer, as it is not likely to result in any benefits for the firm. Moreover, a project in which the buyer is a large organization seems to involve a higher level of risk regarding the firm’s value capture. Firms need to assess these risks and take appropriate measures.

Our study offers architectural firms scenario-specific knowledge to enhance the outcome of supply-driven business models in terms of profitability and satisfaction. It would be interesting to expand on our findings by delving deeper into the interrelationships between the value proposition, value creation and value capture in a number of in-depth case studies. Inclusion of the buyer perspective would be encouraged to generate a broader understanding of how effective value creation and value capture can be achieved. A second suggestion for future research revolves around the applicability of the business model concept to achieve organizational sustainability (Achtenhagen et al. 2013). The proposed framework and empirical insights of the study may be helpful to develop new or improved ways of doing business in architectural service delivery. This is an interesting avenue of research, especially considering the industry’s high demand for change.

## REFERENCES

- Achtenhagen, L., Melin, L., & Naldi, L., (2013) "Dynamics of business models—strategizing, critical capabilities and activities for sustained value creation," *Long Range Planning*, 46(6), 427-442.
- Amit, R., & Schoemaker, P. J., (1993) "Strategic assets and organizational rent," *Strategic Management Journal*, 14(1), 33-46.

- Andriopoulos, C., (2003) "Six paradoxes in managing creativity: an embracing act," *Long Range Planning*, 36(4), 375-388.
- Baden-Fuller, C., & Mangematin, V., (2013) "Business models: A challenging agenda," *Strategic Organization*, 11(4), 418-427.
- Barney, J., (1991) "Firm resources and sustained competitive advantage," *Journal of Management*, 17(1), 99-120.
- Bos-de Vos, M., Wamelink, J. H., & Volker, L., (2016) "Trade-offs in the value capture of architectural firms: the significance of professional value," *Construction Management and Economics*, 34(1), 21-34.
- Bowman, C., & Ambrosini, V., (2000) "Value creation versus value capture: towards a coherent definition of value in strategy," *British Journal of Management*, 11(1), 1-15.
- Canavan, D., Scott, P. S., & Mangematin, V., (2013) "Creative professional service firms: aligning strategy and talent," *Journal of Business Strategy*, 34(3), 24-32.
- Clauss, T., (2016) "Measuring business model innovation: conceptualization, scale development, and proof of performance," *R&D Management*, 00(00), 1-19.
- Coxe, W., Hartung, N. F., Hochberg, H. H., Lewis, B. J., Maister, H., Mattox, R. F., & Piven, P. A., (2005) "Charting your course," *Master Strategies for Organizing and Managing Architecture Firms* (available at: <http://davidmaister.com/pdf/ChartingYourcourse750.pdf>)(accessed on 6 January 2009).
- DeFillippi, R., Grabher, G., & Jones, C., (2007) "Introduction to paradoxes of creativity: managerial and organizational challenges in the cultural economy," *Journal of Organizational Behavior*, 28(5), 511-521.
- Duffy, F., & Rabeneck, A., (2013) "Professionalism and architects in the 21st century," *Building Research & Information*, 41(1), 115-122. doi: 10.1080/09613218.2013.724541
- Greenwood, R., Li, S. X., Prakash, R., & Deephouse, D. L., (2005) "Reputation, diversification, and organizational explanations of performance in professional service firms," *Organization Science*, 16(6), 661-673.
- Hitt, M. A., Biermant, L., Shimizu, K., & Kochhar, R., (2001) "Direct and Moderating Effects of Human Capital on Strategy and Performance in Professional Service Firms: A Resource-Based Perspective," *Academy of Management Journal*, 44(1), 13-28. doi: 10.2307/3069334
- Höök, M., Stehn, L., & Brege, S., (2015) "The development of a portfolio of business models: a longitudinal case study of a building material company," *Construction Management and Economics*, 33(5-6), 334-348.
- Hutter, M. (2011). Infinite surprises: on the stabilization of value in the creative industries. In Beckert, J. & Aspers, P. (Eds.), *The Worth of Goods. Valuation and Pricing in the Economy* (pp. 201-220). Oxford: Oxford University Press.
- Jones, C., Hesterly, W. S., Fladmoe-Lindquist, K., & Borgatti, S. P., (1998) "Professional Service Constellations: How Strategies and Capabilities Influence Collaborative Stability and Change," *Organization Science*, 9(3), 396-410. doi: doi:10.1287/orsc.9.3.396
- Kujala, S., Arto, K., Aaltonen, P., & Turkulainen, V., (2010) "Business models in project-based firms—Towards a typology of solution-specific business models," *International Journal of Project Management*, 28(2), 96-106.
- Lepak, D. P., Smith, K. G., & Taylor, M. S., (2007) "Value creation and value capture: a multilevel perspective," *Academy of Management Review*, 32(1), 180-194.
- Løwendahl, B. (2005). *Strategic management of professional service firms* (3rd ed.). Køge, Denmark: Copenhagen Business School Press.
- Løwendahl, B. R., Revang, Ø., & Fosstenlökken, S. M., (2001) "Knowledge and Value Creation in Professional Service Firms: A Framework for Analysis," *Human Relations*, 54(7), 911-931. doi: 10.1177/0018726701547006

- Maister, D. H. (2012). *Managing the professional service firm*: Simon and Schuster.
- Makadok, R., (2001) "Toward a synthesis of the resource-based and dynamic-capability views of rent creation," *Strategic Management Journal*, 22(5), 387-401.
- Miles, M. B., & Huberman, A. M. (1994). *Qualitative Data Analysis: An Expanded Sourcebook* (2nd ed.). Thousand Oaks, CA: SAGE Publications.
- Mintzberg, H., (1979) "The structuring of organizations: A synthesis of the research," *University of Illinois at Urbana-Champaign's Academy for Entrepreneurial Leadership Historical Research Reference in Entrepreneurship*.
- Morris, M., Schindehutte, M., & Allen, J., (2005) "The entrepreneur's business model: toward a unified perspective," *Journal of Business Research*, 58(6), 726-735.
- Oliva, R., & Kallenberg, R., (2003) "Managing the transition from products to services," *International journal of service industry management*, 14(2), 160-172.
- Osterwalder, A., & Pigneur, Y. (2010). *Business model generation: a handbook for visionaries, game changers, and challengers*: John Wiley & Sons.
- Podsakoff, P. M., MacKenzie, S. B., Lee, J.-Y., & Podsakoff, N. P., (2003) "Common method biases in behavioral research: a critical review of the literature and recommended remedies," *Journal of applied psychology*, 88(5), 879.
- Reymen, I. M., Dewulf, G. P., & Blokpoel, S. B., (2008) "Framework for managing uncertainty in property projects," *Building Research & Information*, 36(6), 580-592.
- Shafer, S. M., Smith, H. J., & Linder, J. C., (2005) "The power of business models," *Business Horizons*, 48(3), 199-207. doi: <http://dx.doi.org/10.1016/j.bushor.2004.10.014>
- Teece, D. J., (2010) "Business Models, Business Strategy and Innovation," *Long Range Planning*, 43(2–3), 172-194. doi: <http://dx.doi.org/10.1016/j.lrp.2009.07.003>
- Vogels, R. (2015). BNA Benchmark 2015, resultaten boekjaar 2014 (BNA Benchmark 2015, results financial year 2014). Zoetermeer: Panteia.
- Von Nordenflycht, A., (2010) "What is a professional service firm? Toward a theory and taxonomy of knowledge-intensive firms," *Academy of Management Review*, 35(1), 155-174.
- Wang, D., & Ilhan, A. O., (2009) "Holding creativity together: A sociological theory of the design professions," *Design Issues*, 25(1), 5-21.
- Wernerfelt, B., (1984) "A resource-based view of the firm," *Strategic Management Journal*, 5(2), 171-180.
- Whyte, J., Ewenstein, B., Hales, M., & Tidd, J., (2008) "Visualizing knowledge in project-based work," *Long Range Planning*, 41(1), 74-92.
- Wikström, K., Artto, K., Kujala, J., & Söderlund, J., (2010) "Business models in project business," *International Journal of Project Management*, 28(8), 832-841.
- Winch, G., & Schneider, E., (1993a) "Managing the knowledge-based organization: the case of architectural practice," *Journal of Management Studies*, 30(6), 923-937.
- Winch, G., & Schneider, E., (1993b) "The strategic management of architectural practice," *Construction Management and Economics*, 11(6), 467-473. doi: 10.1080/014461993000000052
- Zott, C., & Amit, R., (2007) "Business Model Design and the Performance of Entrepreneurial Firms," *Organization Science*, 18(2), 181-199. doi: doi:10.1287/orsc.1060.0232
- Zott, C., & Amit, R., (2010) "Business Model Design: An Activity System Perspective," *Long Range Planning*, 43(2–3), 216-226. doi: <http://dx.doi.org/10.1016/j.lrp.2009.07.004>
- Zott, C., Amit, R., & Massa, L., (2011) "The business model: recent developments and future research," *Journal of Management*, 37(4), 1019-1042.