1 Introduction

Driven by their desire to contribute to the quality of the built environment and wider society, architectural firms collaborate with other actors in heterogeneous inter-organizational projects to provide products and services that solve complex spatial challenges. Due to ongoing developments in society and the construction industry, the professional roles that firms perform within these projects have become increasingly diverse, blurred and contested (Ahuja et al., 2017). While the role of architectural firms historically was clearly defined (Burr and Jones, 2010; Jones and Lichtenstein, 2008), they now cover a broad spectrum of activities and responsibilities, ranging from 'full-service' providers to specialist advisors for a certain discipline or phase (Duffy and Rabeneck, 2013; Van Doorn, 2014). The diversity in, and ongoing pressure on, roles often leads to firms experiencing difficulties when co-creating or capturing value in projects. For example, firms are not always able to realize the level of quality that they pursue, or fail to make a decent living out of their service delivery. While attempting to reconcile the demands of the many stakeholders that are involved in projects, architectural firms struggle to realize their professional and commercial goals.

Research in the field of management has shown that the simultaneous use of multiple business models helps firms to deal with different demands and opportunities when operating in diverse contexts (Aversa et al., 2015; Kujala et al., 2010; Sabatier et al., 2010). Constant innovation of these business models further contributes to the resilience of organizations (Chesbrough, 2010). Although business model theory has significantly contributed to the understanding of organizations and their collaboration in the value chain, existing theories have been largely developed on the basis of insights from traditional, entrepreneurial firms (Zott et al., 2011). As a result, business model theory primarily addresses how organizations generate financial revenues from the value that they co-create. Considering that organizations' single-minded pursuit of profits is increasingly constrained by other important goals, such as social responsibility (Thompson and MacMillan, 2010), more insight is needed into how organizations might capture multiple dimensions of value through their business models. Businesses that by nature pursue multiple strategic goals, such as architectural firms or other creative and/or professional service firms, represent an interesting empirical context for such investigations.

This research aims to generate insight into the value capture process of architectural firms: 1) to contribute to the understanding of how firms capture multiple dimensions of value in project contexts in order to realize their strategic goals; and 2) to support architectural firms in dealing with the value capture challenges they face in practice.

The following two main research questions are used to address the aims of the research:

1 **How do architectural firms capture value in construction projects?**
2 **How can architectural firms be supported in developing strategies for value capture?**

I chose to focus specifically on firms' value capture *in projects* to gain detailed, context-specific insights into the challenges and opportunities that firms encounter when attempting to balance multiple strategic goals. Multiple construction projects were studied to reveal overarching patterns in the value capture strategies of different architectural firms, across different project settings. The research draws on 25 interviews with architects and 15 interviews with clients from 24 recently completed construction projects, as well as observational data from 17 project-oriented strategy meetings to examine architectural firms' value capture strategies both in retrospect and as they unfold in practice.

Based on an engaged scholarship approach (Van de Ven, 2007), I used my own background and continued involvement in architectural practice to conduct my research. The empirical insights gained were further developed into a value capture toolkit that can be used by architectural firms to engage in projects and manage their value capture activities in these projects with greater awareness. The empirical research findings and toolkit were validated on a regular basis in conferences, discussion groups and co-organized workshops with different academic and professional communities.

In the remainder of this introduction, I will first present and discuss the theoretical background, which combines a project-oriented perspective on business and a multidimensional perspective on value. The research's scientific, practical and societal relevance will then be discussed. Subsequently, I will present the research context, paying specific attention to the roles of architectural firms in construction projects, which served as an empirical setting, and the overarching research project, futurA, in which the research is embedded. Following this, the methodological approach is discussed, with a particular focus on why a combination of empirical and design-oriented research is useful to increase our understanding of value capture by architectural firms and other creative and/or professional service firms. The introduction concludes with an overview of the remaining chapters and how they are related.

§ 1.1 Theoretical background

§ 1.1.1 A project-specific business model perspective

Projects form the core of the organizational activities of architectural firms and are the dominant means for delivering customized products and services to clients (Hobday, 2000; Turner and Keegan, 2000). Similar to other project-based firms, architectural firms largely depend on their projects to generate revenues (Arvidsson, 2009). As such, projects represent the key focus of their business strategies and can be conceptualized as 'business vehicles' (Artto and Kujala, 2008).

As projects are unique value co-creation endeavours undertaken by heterogeneous actors (Winter et al., 2006; Winter and Szczepanek, 2008), they present architectural firms with diverse business opportunities and challenges. Therefore, projects play different roles in firms' overall business strategies. While some projects are primarily aimed at generating profit, others are intended to attract new customers or are pursued to enter new markets. The diversity of projects makes it important to manage their mutual interdependences at the firm portfolio level (Martinsuo et al., 2014), but also to understand how the firm's overall business shapes and is shaped by the individual projects that are carried out (Mutka and Aaltonen, 2013).

Research on project-based firms has highlighted that the business model concept can be particularly useful for studying business at the project level (Kujala et al., 2010; Wikström et al., 2010). A business model is commonly defined as a simplified representation of how a firm does business and generates revenues (e.g. Massa et al., 2017; Zott et al., 2011). Although scholars have predominantly investigated business models at the level of the firm, the concept is also used to gain an understanding of business-related phenomena occurring at different levels of analysis, such as the individual level (Svejenova et al., 2010) or ecosystem level (Wieland et al., 2017; Zott and Amit, 2013).

Project-based firms have business models focused at the level of projects (Kujala et al., 2010), which may be derived top down from the firm's overarching business model or developed bottom-up and thereby influence the firm's overall business model (Mutka and Aaltonen, 2013). Kujala et al. (2010) distinguish between solution-specific and project-specific business models. Solution-specific business models are tailored towards the delivery of a certain solution and can be identically repeated, with the same

solution delivered again. Project-specific business models are tailored to a specific project. They are likely to change, even if only slightly, when a new project is begun.

Considering the importance of projects in the work of architectural firms, and based on the idea that architectural firms engage in business through their projects, I chose to adopt a project-specific business model perspective (Kujala et al., 2010; Wikström et al., 2010) to investigate the value capture of these firms at the level of the individual project.

§ 1.1.2 A multidimensional perspective on value

The theoretical construct of 'value' has multiple meanings. It is not only used to refer to the 'worth' of things (Gond et al., 2015), but also expresses abstract ideals and beliefs about what is good and right (Martinsuo et al., 2017). In this research, I adopt a 'value as worth' perspective and particularly connect with value-related studies in the fields of strategic management (e.g. Bowman and Ambrosini, 2000; Lepak et al., 2007; Massa et al., 2017) and project management (e.g. Artto and Kujala, 2008; Wikström et al., 2010). Scholars who study 'value as worth' have different and often competing views on value.

In the field of economics, value is largely conceptualized as a stable quality that is embedded in goods or services (Vargo et al., 2008). This view is consistent with Goods-Dominant (G-D) logic in marketing, which conceptualizes value creation as a series of activities that are carried out by a goods-producing organization in order to be exchanged for money (or other goods) in the market (Vargo and Lusch, 2004). According to G-D logic, value is created by a single firm and determined 'in-exchange' (Vargo et al., 2008).

In service-dominant (S-D) logic (Vargo, 2013; Vargo et al., 2008) and service logic (Grönroos, 2008; Grönroos and Voima, 2013), value is conceptualized as being dependent on individual perceptions. Value is only created when a firm's products and/or services are *perceive*d worthy by the client, users or other stakeholders involved (Vargo and Akaka, 2009; Vargo et al., 2008). This view emphasizes that value creation cannot be accomplished by one single actor, but always involves a series of interactions between multiple, heterogeneous actors from both the supply and demand sides. To emphasize the social dimension of value creation and the key role that value recipients play in it, many scholars have adopted the terms 'value co-creation' (Smyth et al., 2017; Vargo et al., 2008) and 'value co-destruction' (Plé and Cáceres, 2010).

Value capture and business model research by strategic management scholars also builds on the conceptualization of value as perception (Pitelis, 2009). In this research, I follow Pitelis (2009, p. 1118), who defines value as '[the] perceived worthiness of a subject matter to a socio-economic agent that is exposed to and/or can make use of the subject matter in question'.

In the strategic management literature, value capture is commonly defined as the difference between an organization's revenues and costs (Bowman and Ambrosini, 2000). Although existing literature on value capture (e.g. Bowman and Ambrosini, 2000; Lepak et al., 2007; Pitelis, 2009) and business models (e.g. Zott and Amit, 2007) provides important insights into when and how organizations capture parts of the value that they co-create with other actors, it has, thus far, only addressed the generation of profit. For example, scholars have provided insights into mechanisms that enable or support firms' financial performance, such as resource management (i.e. the structuring, bundling and leveraging of resources) (Sirmon et al., 2007; Sirmon et al., 2011) and revenue models (Amit and Zott, 2012; Zott et al., 2011).

In contrast to profit-driven production and service by firms that have been studied in the strategic management literature, architectural firms and other professional service firms pursue both commercial and professional goals (Maister, 2012). In addition to the fact that firms need a certain level of profit to remain viable, they depend largely on the capture of non-monetary value dimensions to run and sustain their business. Client relationships and the ability of firms to form and maintain these relationships are crucial for the long-term sustainability of firms (Broschak, 2015). Furthermore, with the knowledge and expertise of employees representing their most important resource with which to generate income (Greenwood and Empson, 2003), architectural firms must attract and retain people with unique knowledge, skills and motivation to secure firm performance (Canavan et al., 2013). Swart et al. (2015) argue that, as a consequence, the performance of professional service firms, such as architectural firms, is thus not only defined in terms of financial output, but may also be based on aspects such as the achievement of individual targets, new business growth or the value of a firm's reputational capital that is expressed in its brand (Swart et al., 2015).

To consider both monetary and non-monetary value dimensions in architectural firms' value capture, I chose to adopt a multidimensional perspective on value. I draw on the classic distinction between 'use value' and 'exchange value' (Bowman and Ambrosini, 2000; Vargo et al., 2008) and extend it with 'professional value'. While use value refers to an actor's subjective perception of the qualities or utility of activities, products or services, exchange value is the price that is paid for these activities, products or services at the moment of exchange (Bowman and Ambrosini, 2000). I define professional value as the perceived worthiness of the qualities or utility of activities, products or

services in attaining professional goals. While goods-producing firms directly capture value and generate profit when they exchange their goods for money (Bowman and Ambrosini, 2000), architectural firms and other service firms capture value over the entire lifecycle of the products and/or services that they deliver, as value continues to be created 'in-use' (Vargo et al., 2008).

§ 1.2 Relevance of the research

§ 1.2.1 Scientific relevance

This research investigates the complex and highly dynamic process of value capture in the context of architectural service delivery. Architectural firms and other creative and/or professional service firms have often been studied because of the paradoxes that they incorporate (Andriopoulos, 2003; DeFillippi et al., 2007; Gaim, 2017; Manzoni and Volker, 2017). However, very little is known about how these paradoxes, such as the duality between creative and commercial goals (DeFillippi et al., 2007; Townley and Beech, 2010), influence the value capture of these businesses.

To date, value capture has been predominantly studied in the fields of economics and strategic management. Focusing on the operations of functional, line-management organizations, existing value capture theories address the capture of monetary value at the moment when a good or service is exchanged (e.g. Bowman and Ambrosini, 2000; Lepak et al., 2007; Pitelis, 2009). Although these theories provide very useful concepts to study value capture, they do not take into account the social nature of the value co-creation and capture process (Vargo et al., 2008); the temporal, heterogeneous and inter-organizational nature of the project context (Sydow and Braun, 2018); or the multiple dimensions of value that are at stake (Smith et al., 2010; Thompson and MacMillan, 2010).

This research is both relevant and topical, as it develops in-depth insights into the project-based value capture of architectural firms. Recent calls for more research on value capture in the area of project business (Laursen and Svejvig, 2016; Martinsuo et al., 2017) specifically support the scientific relevance of this work. The insights developed generate new perspectives on organizational value capture that account for

the multiple dimensions of value that firms capture in the collaborative, temporary settings in which they are engaged. As such, they are of value to different academic disciplines, including value capture, the management of creative and/or professional service firms, in particular architectural firms, and the management of projects.

§ 1.2.2 Practical relevance

Practical relevance lies in the fact that this research investigates a topic about which many practitioners lack knowledge. Generally, architects and other creative professionals are not formally trained in business studies (Arditi and Davis, 1988). They may even have a certain distain for business-related or managerial activities, or consider them a distraction from their core line of work (Winch and Schneider, 1993).

Nevertheless, recent contextual developments, such as the ongoing marketization of professional services (Reay et al., 2017) and the devaluation of the exclusive knowledge bases of professionals (Ahuja et al., 2017; Vough et al., 2013), challenge them to engage in more entrepreneurial and managerial activities and move beyond existing models of professionalism (Noordegraaf, 2015; Reihlen and Werr, 2015). As the ideals of a stable and protected knowledge base have increasingly lost significance, these activities may be crucial to attract work and satisfy clients and other stakeholders involved.

Failure to understand the process of value capture and to address the challenges that it entails can lead to ill-defined business models which, especially in today's rapidly changing and highly competitive business environment, can seriously threaten organizational continuity. Detailed insights into the process and associated challenges related to project-based value capture by architectural firms may provide architects and other creative professionals with some useful insights to better manage the co-creation and capture of value in the projects in which they engage.

§ 1.2.3 Societal relevance

The societal relevance of this research lies in its focus on uncovering how architectural firms can perform their relevant work in financially viable and professionally satisfactory ways. Detailed insights into the project-based value capture of architectural firms

improve our understanding of how certain value capture strategies and specific project conditions may or may not lead to desired results. This enhances firms' individual and collective abilities to attain their socially driven goals and enables them to contribute to the built environment and wider society.

A better understanding of the value capture of architectural firms not only facilitates firms in improving their viability and competitive advantage, it also contributes to the sustainability of the architectural profession. If architects are better able to identify and specify their 'added value' to a project, and understand how they can realize this value in professionally satisfactory and financially viable ways, they will be able to develop successful business models and thereby improve their earning power. This will increase the market value of architects and ensure they remain relevant as markets and fields continue to shift.

§ 1.3 Research context

§ 1.3.1 Roles of architectural firms in construction projects

Over recent years, the service delivery of architectural firms has undergone significant changes (Burr and Jones, 2010). An increased use of alternative governance forms, such as integrated project delivery (Lahdenperä, 2012), has resulted in more diverse, often marginalized, roles for architectural firms involved in projects. Established role structures (Jones and Lichtenstein, 2008) in which architectural firms were responsible for the design and engineering of a project and expected to oversee and coordinate the project's construction, have been replaced by alternative forms of collaboration, with increased responsibilities for contractors or consortia of large organizations that are able to offer clients all-inclusive service delivery (Burr and Jones, 2010). Within these structures, architectural firms are often one of many specialist advisors, which typically decreases their authority and makes it more difficult to co-create and capture value according to their own mission and goals.

New technologies, such as Building Information Modelling (BIM) and 3D-printing, have also disrupted historically established role structures in the field. They have fundamentally altered processes of design, building and communication in the

global construction sector and consequently changed the activities, responsibilities and value chains that accompany these processes (e.g. Azhar, 2011; Bryde et al., 2013). Currently, many architectural firms attempt to take up new positions in the collaboration with other actors, such as BIM integrators or product designers of 3D facades (Jia et al., 2017; Van Doorn, 2014). However, they experience fierce competition from other organizations that also attempt to claim these new areas of work resulting from technological developments. Architectural firms also witness that aspects of their traditional roles are disappearing because they have become redundant or can be performed by other actors. For example, detailed engineering work is now often performed by product suppliers and coordinated by the general contractor, leading to a decrease in the role of architectural firms in this respect.

Furthermore, the roles of architectural firms have also changed due to other more general contextual developments. Similar to other professional service firms, architectural firms face pressures from ongoing marketization, commodification and a devaluation of their work (Reay et al., 2017; Vough et al., 2013). The competition for architectural work has significantly increased, with other actors, such as engineering firms, contractors or clients, becoming better equipped to take on certain activities or responsibilities. This has led to a decrease in architects' professional autonomy in projects and resulted in many architects feeling undervalued and marginalized (Ahuja et al., 2017).

To respond to these ongoing developments and to maintain their value in the field, architectural firms are increasingly challenged to reconsider the services that they deliver and the ways in which they deliver them (e.g. Duffy and Rabeneck, 2013; Jamieson, 2012; Schoorl, 2011; Van Doorn, 2014). Some architectural firms are proactively taking on new activities and/or responsibilities. For example, some firms are becoming involved in the front-end or back-end of projects to better assist their clients, to enlarge or strengthen their role in projects, and to increase the opportunities for future commissions (Jia et al., 2017). Other architectural firms continue to believe in the strength of their 'traditional' role and are attempting to reclaim this role in the projects in which they are involved.

Whether firms attempt to conquer new ground or reclaim lost territory, the ongoing changes in the roles of architectural firms in projects have important implications for their businesses. Marginalized positions in projects complicate the co-creation and capture of value, as firms cannot always perform the activities that they consider necessary and/or do not generate sufficient income to cover their expenses. New roles in projects may lead to difficulties, because they have not yet gained legitimacy in the field (Lieftink et al., 2018) and the associated business models typically entail a trial-and-error approach (Chesbrough, 2010; Morris et al., 2005). Thus, within the

context of ongoing societal and field level developments, architectural firms must carefully rethink their business models to remain valuable professionals and retain viable businesses.

§ 1.3.2 FuturA research project: future value chains of architectural services

This research was conducted in the Netherlands as part of futurA, a four-year research project on new governance and business models for architectural services (www.future-architect.nl). The futurA project was funded by the Netherlands Organisation for Scientific Research (NWO) as part of the CLICKNL, Built Environment programme. It is a collaboration between researchers from Delft University of Technology (Department of Management in the Built Environment), Radboud University Nijmegen (Institute for Management Research) and a consortium of partners from industry. Within the industry consortium, the Royal Institute of Dutch Architects (BNA), five Dutch architectural firms and three Dutch client organizations are represented.

FuturA consists of two interlinked PhD projects that each have their own focus, while both take the role of architectural firms in construction projects as their points of departure. Bente Lieftink is a doctoral candidate at Radboud University Nijmegen. Her research focuses on inter-organizational collaboration in construction projects, how architects can pursue new roles in this collaboration, and how they legitimize these within the field. My research focuses on how architectural firms capture value in construction projects and how this process is influenced by and influences the role of firms within these projects. The combination of our doctoral research projects fits tightly within the overall scope of futurA. Bente Lieftink and I have closely collaborated during the entire research process: we collected and analysed some of the empirical data together; we wrote a joint paper on the role of architects in projects, which is included in Chapter 2 of both our theses; and we drew on the findings of the entire futurA project for our doctoral dissertations and the value capture toolkit. Figure 1.1 presents an overview of the futurA research project.

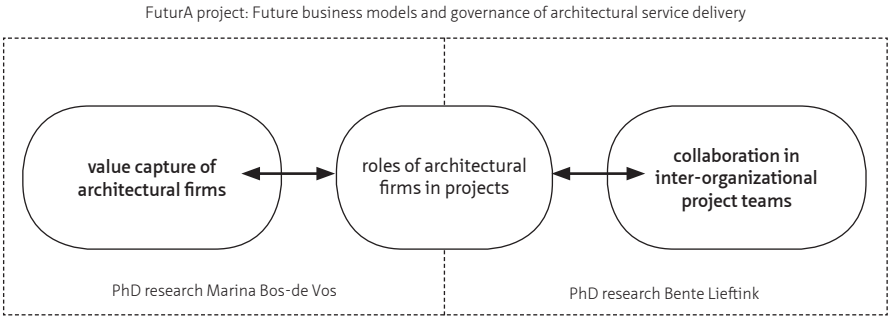

FIGURE 1.1 Thematic overview of the futurA research project

§ 1.4 Research methodology

This research aims to generate insights that add to the understanding of value capture by architectural firms and which are relevant to academia and practice. To address this aim, I chose to conduct both qualitative empirical research and design-oriented research. The empirical research (Part 1: Chapters 2–5), contributes to the academic literature by focusing on obtaining a fine-grained understanding of the value capture process of architectural firms. The design-oriented research (Part 2: Chapter 6), aims to translate these important research findings into a toolkit that practitioners can use to deal with the complexities of value capture in their everyday work. During the research, I repeatedly alternated between the empirical research and the design-oriented research, which enabled me to construct my empirical research around themes that seemed particularly relevant for the design of the toolkit; thus developing the toolkit on the basis of the latest empirical findings and using the preliminary versions of the toolkit components in subsequent stages of the data collection process. Figure 1.2 presents an overview of my research design.

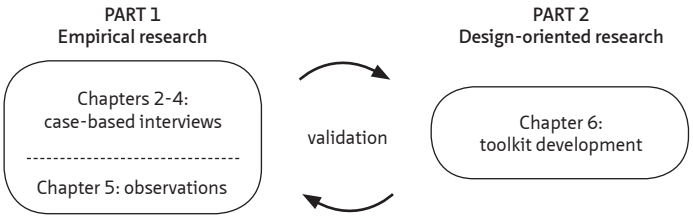

FIGURE 1.2 Research design

The research was designed, conducted and validated with the help of practitioners to build theory from practice (Schultz and Hatch, 2005). My own form of engaged scholarship (Van de Ven, 2007), with over seven years work experience as a practising architect and through continued involvement in the field during the entire research project, further contributed to developing a strong practice-based research approach. My own background in the field allowed me to delve into the empirical research as soon as the project started and helped me to see overarching relationships, as well as allowing me to continuously reflect on the value of the empirical findings. Frequent interaction with practitioners was also crucial to acknowledge and address my own practice-based biases.

Validation of my methods and findings took place on a regular basis throughout the entire four-year research programme. The validation process occurred over multiple events, including a series of ten co-organized 'Living Lab' workshops (Mulder and Stappers, 2009) with the futurA consortium partners and occasionally a larger group of practitioners, as well as conferences, symposia and discussion groups with different academic and practitioner communities. These events also helped to continue the alternation between empirical research and design-oriented research and to ensure productive interaction between research and practice.

§ 1.4.1 The empirical research

To answer the first research question: *How do architectural firms capture value in construction projects?*, I chose to adopt a qualitative approach (Denzin and Lincoln, 1994; Van Maanen, 1979). Qualitative research is particularly useful for building theory around processes of which little is known and, therefore, it is a highly appropriate approach to the study of value capture from a project-oriented and multidimensional perspective, which, thus far, has been largely absent from the existing value capture literature.

As discussed in § 1.2, I chose to investigate the value capture of architectural firms in the context of specific projects. Construction projects offer representations of how architectural firms do business (Turner and Keegan, 2000), and because of their temporary nature, they are able to provide comprehensive insights into the mechanisms that underlie the value capture process of architectural firms. Such comprehensive insights are more difficult to obtain when investigating an entire firm.

To ensure good representation of the Dutch architectural field and to allow different perspectives to appear, I used the purposeful sampling technique of 'maximum variation' (Patton, 2005). I selected architectural firms with diverse strategic orientations (cf. Coxe et al., 2005), ages and sizes (cf. European Commission, 2005). The projects in which these firms were involved differed in typology (residential buildings, hospitals and care facilities, offices, educational buildings, sports facility, railway station, etc.), geographical location, governance form (traditional and integrated project delivery) and involved different types of client organizations (public, semi-public and private).

Semi-structured interviews (Brinkman and Kvale, 2015) were chosen as the primary method of data collection to investigate the project-based value capture of architectural firms in retrospect (Chapters 2, 3, 4). Focusing each interview on a specific case allowed me to gain rich information on the value capture of architectural firms in specific projects, while encouraging the respondents to contrast their experiences in the project to other projects. The interviews conducted concerned 24 diverse construction projects that had been ongoing for at least one year or had been realized no longer than a year before the date of the interview to ensure that respondents were able to readily reflect on the process. In total, I conducted 25 interviews with architects who were or had been involved in the respective project and 15 interviews with the clients that the architects had collaborated with in the project. In addition, firm-specific and project-specific archival documents were collected to limit common method bias (Podsakoff et al., 2003) and for triangulation purposes (Ravitch and Carl, 2015). The data gathered were used to generate insights into the strategies that firms use to negotiate their roles in construction projects (Chapter 2), the strategies that firms use to capture value in the interaction with the client (Chapter 3), and the strategies that firms use to attain organizational goals in a project (Chapter 4). Table 1.1 provides an overview of the data collected and the sub-questions that were addressed.

To investigate the value capture strategies of architectural firms as they unfold in practice (Chapter 5), I organized strategy meetings with 17 architectural firms. Observation (Patton, 2005) was chosen as the main method of data collection. The meetings were structured around the use of a preliminary version of the value capture framework that was being developed in the design-oriented part of the research

project. The framework offered an outline which allowed a structured discussion of a number of value capture related topics (project choice, value proposition, goals, activities, risks, resources, partners, costs, revenue model and agreements) in relation to a new or recently started project and thereby served as a cognitive map (Ambrosini and Bowman, 2001). The meetings lasted approximately three hours and were all moderated by the same external researcher to ensure robustness. I had a participatory observer role and kept track of the process, decisions and outcomes of the session in an event log. The groups of participants ranged between 2 and 7 people, who were, in line with my request, selected by the management of each firm to ensure that the sessions would be similar to the firms' regular strategic meetings. The meetings were entirely video-recorded and further documented with photographs. Firm-specific and project-specific information was also gathered by means of firm websites for triangulation purposes. The data collected were used to develop insights into how architectural firms develop strategies for project-based value capture and how their strategizing is influenced by identity-strategy tensions (Chapter 5) (see Table 1.1 for the data collected and sub-question).

	TOPIC & RESEARCH QUESTION	METHOD & DATA COLLECTED	PUBLICATIONS & PRESENTATIONS
PART 1	**Scientific insights into value capture of architectural firms** *How do architectural firms capture value in construction projects?*		
Chapter 2	**Strategies to negotiate one's role in a project** *How do professionals negotiate the boundaries of their roles in an inter-organizational project setting to respond to threats of marginalization?*	**Interview study** – 33 in-depth, case-based interviews with architects of 31 diverse construction projects – 18 in-depth, case-based interviews with clients of the same projects – Archival materials of the cases	*Journal paper:* Under review at *Journal of Professions and Organization* *Conference paper & presentation:* – SSE/Said Business School Conference on Professional Service Firms 2017 *Presentation:* – FuturA Living Lab #2, 2014
Chapter 3	**Strategies to capture value in the project-based interaction with a client** *How do architectural firms capture value for organizational purposes in the project-based interaction with their client?*	**Interview study** – 10 in-depth, case-based interviews with architects of 9 large housing projects[1] – 10 in-depth, case-based interviews with clients of the same projects[1] – Archival materials of the cases[1]	*Journal paper:* Published in *Construction Management and Economics* *Conference paper & presentation:* – 31st European Group of Organizational Studies (EGOS) Colloquium 2015 – 31st Association of Researchers in Construction Management (ARCOM) Conference 2015 *Presentations:* – FuturA Living Lab #6, 2015 – 1st Creative Industries Research Seminar on business and management-related questions, organized by Rotterdam School of Management 2015
Chapter 4	**Strategies to attain firm goals in a project** *How do architectural firms capture multiple dimensions of value from their projects and how do their project-based approaches relate to the overarching goals of the firm?*	**Interview study** – 25 in-depth, case-based interviews with architects from 24 diverse construction projects[1] – 15 in-depth, case-based interviews with clients of the same projects[1] – Archival materials of the cases[1]	*Journal paper:* Under review at *International Journal of Project Management* *Conference paper & presentation:* – Engineering Project Organization Conference (EPOC) 2014 – 30th ARCOM Conference 2014 – EPOC 2016 – 32nd ARCOM Conference 2016
Chapter 5	**Business model strategizing** *How do members of architectural firms negotiate identity-strategy tensions in their business model designs, and how do their business models impact on existing identity claims?*	**Observational study** – Observations of 17 strategy workshops with architectural firms – 17 filled-in strategy frameworks – Accounts of firms' websites	*Journal paper:* Draft version *Conference paper & presentation:* – Society for Advancement of Management Studies (SAMS) Creative Industries Early Career Paper Development Workshop 2017 – 33rd EGOS Colloquium 2017 – 33rd ARCOM Conference 2017

[1] *This data is part of that listed for Chapter 2 above*

TABLE 1.1 Overview of the empirical research

TOC

§ 1.4.2 The design-oriented research

To answer the second research question: *How can architectural firms be supported in developing strategies for value capture?*, I used a design-thinking approach (Dorst, 2011) to work towards the design of simple integrated frameworks that are able to convey the mechanisms behind the complexities of value capture and can also function as practical tools (Schultz and Hatch, 2005). The design-thinking approach is particularly helpful in dealing with the open, complex problems associated with the development of practical tools (Dorst, 2011). Due to my background as a practising architect, I was not only formally trained in using this approach, but also gained valuable experience using it in diverse, multidisciplinary project settings.

The value capture toolkit (Chapter 6) was developed in the design-oriented research though a multi-step, iterative process, in which insights gained from the literature and my own empirical research were combined. Frequent meetings with the futurA research team, the consortium partners and other practitioners played a key role in this process. They were instrumental for both the development and validation of the toolkit. A preliminary version of one of the components of the toolkit was used in the strategy meetings at architectural firms, which resulted in valuable feedback for the toolkit's further development. Table 1.2 provides an overview of the design-oriented research.

	TOPIC & RESEARCH QUESTION	METHOD & DATA COLLECTED	PUBLICATIONS & PRESENTATIONS
PART 2	**Value capture toolkit for architectural firms** *How can architectural firms be supported in developing strategies for value capture?*		
Chapter 6	**Toolkit for developing project-specific value capture strategies**	**Design-thinking approach** – 33 in-depth, case-based interviews with architects[1] – 18 in-depth, case-based interviews with clients[1] – Archival materials of the cases[1] – Observations of 17 strategy workshops[2] – 32 filled-in strategy frameworks[2]	*Journal paper:* Draft version *Conference paper & presentation:* – Professional Practices in the Built Environment Conference 2017 *Presentation:* – Two discussion groups organized by the Royal Institute of Dutch Architects 2016 & 2017 – FuturA Living Lab #8, 2016 & #9, 2017 – Delft University of Technology Research Exhibition 2017 – FuturA Symposium 29 March 2018

[1] *This data is part of that listed for Chapter 2 above*
[2] *This data is part of that listed for Chapter 5 above*

TABLE 1.2 Overview of the design-oriented research

§ 1.5 Structure of this dissertation

The main body of this doctoral dissertation consists of two parts: an empirical part consisting of four free-standing empirical research papers; and a design-oriented part consisting of one chapter about the value capture toolkit that was developed for practice. As the other futurA team members acted as co-authors of the papers, Chapters 2-5 are written using the first-person plural. In the following, I will briefly introduce the chapters of my dissertation and explain how they are related to one another.

Chapter 2 provides a micro-level account of how architects negotiate the boundaries of their professional roles in inter-organizational projects to respond to threats of marginalization. By adopting a 'boundary work lens' (Gieryn, 1983; Gieryn, 1999), we found that architects were reinstating, bending or pioneering new role boundaries. The paper unravels the drivers of and barriers to individual professionals in the pursuit of various roles for their organizations. It shows that *professional expertise* played a key part in negotiations of the role of architects and influenced the value capture opportunities that firms could or could not create in projects.

Chapter 3 focuses on the value capture strategies that firms use in project-based interactions with a client. It unravels organizational drivers of and barriers to value capture in projects. We found that architectural firms pursued capture of professional value to attain their professional goals, such as reputation, work pleasure and development, and often prioritized these value dimensions over the capture of monetary value. This shows how the *hierarchy in different organizational goals* both enables and constrains firms in the capture of value in projects.

The understanding of the value capture process of architectural firms is further supplemented in Chapter 4. In this chapter, we provide insights into the dynamics occurring between a project and the organization that are involved in the value capture of architectural firms. We explain how value capture strategies of postponing financial revenues in a project, compensating for loss of financial revenue across projects, and rejecting a project were used to attain organizational goals. The strategies chosen show that architectural firms risked or accepted the slippage of financial value in projects and counteracted the slippage of professional value to enhance the overall benefits for the firm. This highlights how a firm's *willingness to take financial and professional risks* in a project influences its value capture.

Chapter 5 provides a better understanding of how architectural firms develop value capture strategies for projects and how they deal with identity-strategy tensions

during this process. The 17 strategy meetings organized at architectural firms demonstrated that firm members collaboratively constructed their business models around professional values, thereby strengthening organizational identity, but constraining innovation in their value capture strategies. This reveals the important role of *professional identity* in the development of value capture strategies by architectural firms.

Chapter 6 presents the design-oriented part of the research project. Based on the literature on business models and project governance, as well as empirical insights from the previous chapters and the research of Bente Lieftink, we developed a toolkit for value capture in projects that is specifically designed to ensure the well-balanced *integration of expertise, goals and risks* in a project from the perspective of a firm's role identity in the project. The toolkit consists of an overview of four generic professional role identities of architectural firms, a board game with cards for value capture in projects, an overview of role identity-specific value capture challenges, and examples of projects. The toolkit can be used by architectural firms and other actors to analyse, monitor and improve their value capture strategies in projects. The chapter explains the relevance of the toolkit, how it was developed, the different components of the toolkit, and how these can be used in practice.

Finally, in the discussion chapter (Chapter 7), I provide a summary of the key findings, present the theoretical contributions, reveal the practical implications and reflect on the relevance and limitations of the research approach and findings for academia and practice.

PART 1 Empirical research

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