

Business models and project selection in construction companies

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Abstract

Purpose – The purpose of this study is to investigate project selection in the context of business management with the specific aim of understanding the role of business models in project selection. The logic followed for making decisions and selecting projects significantly influences construction companies' success.

Design/methodology/approach – The research objective is pursued by conducting a multiple-case study. Managers acting in key decision-making roles from eight construction companies are interviewed. A conceptual framework is developed for analysing the interview data and the prevailing project selection practices in construction.

Findings – The findings suggest that project selection is not guided by any specific business model, but that the decision-making process is dominated more by short-term factors such as need of work and profitability. Thus, estimation know-how largely determines the kind of projects companies are willing to research, regardless of their competence to deliver them.

Research limitations/implications – The study produces a hypothesis that ignorance of business models in project selection and their general underutilisation in management have negative effects on performance of the construction industry. More consistent management practice would enable the development of business models and processes, contributing to performance and help companies to distinguish themselves from each other.

Originality/value – As opposed to previous studies that have produced bidding models that emulate the current industry practices, this research analyses the prevailing logic of project selection from a more critical perspective. In addition, the project selection practices of Finnish construction companies have not been investigated previously.

Keywords Business model, Management, Strategy, Project management, Decision-making, Project selection

Paper type Research paper

Introduction

Decisions related to project selection are crucial for construction contractors' success (Wanous *et al.*, 2000; Egemen and Mohamed, 2007; El-Mashaleh, 2010). These decisions contain both bid/no-bid decisions and go/no-go decisions in cases where projects are initiated through some mechanism other than tendering. In general, these decisions are complicated to make because of uncertainties related to many factors that influence their

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outcomes (Shash, 1993; Chua and Li, 2000; Egemen and Mohamed, 2007). Numerous methods have been developed to assist contractors in making bidding decisions. These methods have focussed mostly on optimising contractors' probability of winning contracts and determining mark-up value.

However, quantitative bidding models have not gained popularity in practice (Wanous *et al.*, 2000). Instead, the developed models have been blamed for oversimplification considering the difficulty involved in developing realistic models that fully capture the complexity and uncertainty of the construction bidding situation (Chua and Li, 2000; Egemen and Mohamed, 2007). Tan and Shen (2010, p. 76) stated that "A typical weakness is that these methods have not taken into account the level of contractors' competence in formulating bidding strategies, for example, contractors' resources and management skills. In fact, a contractor cannot complete a contract successfully if its competence is not sufficient'. Thus, complex decisions are still made on the basis of intuition derived from a mixture of gut feeling, experience and guesswork (Ahmad, 1990; Chua *et al.*, 2001; Egemen and Mohamed, 2007).

According to Wanous *et al.* (2000), very few researchers have approached the subject of project selection with a practical focus that aims to understand current industry practices and their weaknesses with a potential for initiating change. Instead, the accuracy of previously developed models in emulating actual decisions is evaluated based on historical data as if there would be no need to take a critical look at the prevailing decision-making logic as such. However, as Jennings and Beaver (1995) argued that it is contended that a lack of management attention to strategic issues in general is the root of all failure.

This research deviates from previous studies by taking a more critical perspective when analysing industry practices. In addition, project selection is not examined as an isolated phenomenon, but as part of the broader business management activity. For this purpose, a business model concept is used in the study. In general, a business model describes the operating logic of a company and revolves around the two key functions of every company – value creation and value capture (Shafer *et al.*, 2005). In this study, the concept of a business model is particularly interesting because it connects strategy to operations by describing the concrete activities that a company undertakes to execute its strategy (Osterwalder, 2004). The main objective is to understand the role of business models in the decision-making process related to project selection in construction companies. The objective is also presented as a research question: *What is the role of business models in project selection in construction companies?*

The paper proceeds by reviewing the literature on project selection in construction. Then, a brief overview of how companies are managed through business models is provided, followed by a presentation on the conceptual framework developed for facilitating empirical analysis. Thereafter, the research methodology and the interview results are presented. Finally, the findings are discussed, and the conclusions of this study are given.

Project selection in construction

Researchers have been concerned with the problem of bidding strategy for years, and numerous methods have been developed to model bidding decisions (Friedman, 1956; Ahmad, 1990; Chua *et al.*, 2001; Marzouk and Moselhi, 2003; Lin and Chen, 2004; Tan and Shen, 2010). Most of these models are based on the weight of importance and the contractor's assessment of each factor in completing the modelling procedures (Bageis and Fortune, 2009).

Many researchers have identified and analysed factors which affect the bid decision and mark-up determination – factors that are integral to previously developed quantitative decision-making models. [Ahmad and Minkarah \(1988\)](#) conducted their survey in the USA and identified 31 factors. They found that some of the identified factors were very important in the mark-up decision stage but not in the bid/no-bid decision stage, revealing that these decisions are separate activities that may share the same factors. [Shash \(1993\)](#) identified 55 factors which influence the bid/no-bid and mark-up decisions by top UK contractors and found that current bidding models were based on competitiveness and profitability. [Wanous et al. \(2000\)](#) conducted a questionnaire survey among Syrian contractors. They identified 38 factors and ranked them according to their relative importance in bid/no-bid decisions. [Chua and Li \(2000\)](#) conducted a survey of 153 top contractors in Singapore and identified top factors based on their corresponding weights of importance. [Enshassi et al. \(2010\)](#) conducted a questionnaire survey of Palestinian contractors, clients and consultants, identifying 78 factors. [Jarkas \(2013\)](#) surveyed experts in Kuwait to rank 40 factors. [Bageis and Fortune \(2009\)](#) summarised six different studies and provided a list of 100 factors. They found that in Saudi Arabia, contractors' assessments of the factors' importance were mostly influenced by contractor size, classification status and the type of client. Despite broad interest in bidding factors and strategies within the academia, no related studies were identified within the context of the Finnish construction industry.

The literature contains exhaustive lists of identified decision-making factors. [Shash \(1993\)](#) identified the need for work, number of competitors tendering and experience in similar projects as the top three factors that affected the bid/no-bid decision. [Wanous et al. \(2000\)](#) concluded that fulfilling the tendering conditions, financial capability of the client and relationship with/reputation of the client were the most important factors. According to [Bageis and Fortune \(2009\)](#), the client's financial capability, project cash flow and the ability to execute the project were the top three factors (from 100 factors). However, [Lowe and Parvar \(2004\)](#) found that only 8 of the 21 factors they listed had a significant linear relationship with the bid/no-bid decision. This number of factors seems small in comparison to the number of factors thought to affect the bid decision in previous studies. [Lowe and Parvar's \(2004\)](#) finding is significant because it reveals a potential problem with the survey or questionnaire methods commonly used in previous studies. The offered lists of factors or rational frames of reference may influence informants and make their practices seem more rational than they are in reality.

Moreover, researchers have categorised decision-making factors in different ways. [Wanous et al. \(2000\)](#) divided them into negative and positive bidding factors based on their ability to discourage or encourage contractors to bid. [Egemen and Mohamed \(2007\)](#) used three main categories of factors that contributed to final decisions: "firm-related factors", "project-related factors" and "market conditions and strategic considerations". [Chua and Li \(2000\)](#) classified factors into internal, external and environmental factors (which reflected the capabilities and resources of the company in relation to the project and the environment). These factors constitute a hierarchy that contributes to the four reasoning sub-goals: competition, risk, need for work and company's position in bidding process. [Ravanshadnia et al. \(2010\)](#) provided the following alternative factor hierarchy:

- “organisational considerations in bidding”;
- “project characteristics”;
- “risk”;
- “financial considerations”; and
- “project synergy, correlation and portfolio effects”.

The last two classifications are useful because they provide some sense of the reasoning objectives on which decisions are based.

Theoretical foundation

Managing construction companies through business models

The following text provides an overview of how to manage a construction company through business models. In the literature, business models are seen as high-level aggregations of a company’s core logic of value creation and capture (Shafer *et al.*, 2005), addressing even those aspects that reach beyond the company’s borders (Burkhart *et al.*, 2011; Zott *et al.*, 2011). One of the key functions of the business model concept is that it describes “as a system, how pieces of business fit together” (Magretta, 2002), thus enabling managers to understand, study and develop a company holistically. Value creation system, value proposition/offering, market/customer and revenue model are the most frequently included elements in frameworks for describing a business model (Burkhart *et al.*, 2011; Magretta, 2002; Suikki *et al.*, 2006). In more detailed frameworks, the aforementioned key elements are often decomposed further. For example, Osterwalder and Pigneur (2009) use key partners, key resources and key activities to describe the value creation system in detail.

The practice-oriented approach to construction business leads to the fact that the management’s focus is to get the building constructed, i.e. transforming inputs to outputs (Leinonen and Houvila, 2000). In this approach, the main task of a business management is to acquire new projects, while the project management works to ensure project success, whatever the baseline for a project may be. Value is best understood as being tied to customers’ requirements for the end-product, and most of it is defined through project design (Bertelsen and Koskela, 2002). The main task of project management is to control on-going project performance against the specifications and to take corrective action, if needed, to ensure conformity with performance targets.

In the best companies, however, the entire business is built around a value proposition, which is at the heart of a business model and is the main reason why customers choose one company over another (Osterwalder, 2004). Moreover, in construction companies, value should be thought out long before project start – not in terms of an end product but in terms of how a company helps its customers or clients to achieve their objectives, that is, constructing facilities that fit for customers’ purposes. The value proposition differentiates companies from each other. Thus, every manager should know the company’s value proposition and design business models accordingly.

Several authors positioned business models between strategy and operations, where they provided a critical link between strategy and operations by explaining how the activities of the firm work together during strategy execution (Osterwalder, 2004; Richardson, 2008; Wikström *et al.*, 2010). According to Osterwalder (2004), strategy, business models and processes all address similar problems (e.g. making profit in a

sustainable way) but at different levels of business. [Seddon et al. \(2004\)](#) see a business model as an abstract representation of a few aspects of a firm's strategy. However, [Zott and Amit \(2008\)](#) remark that firms can address the same customer needs and pursue similar product market strategies with very different business models. Thus, business models and strategies are complements, not substitutes for each other.

Many construction companies have chosen to diversify to protect themselves from the high volatility of mainly local construction markets. The diversification is usually achieved following an approach called resource-led stretch, according to which a company's core competencies are leveraged in many different fields of operations. With this approach, the management's focus is on driving project efficiency, and the means to achieve high efficiency are often in collision with the customer's best interest. [Price and Newson \(2003\)](#) suggest that the prevailing resource-led approaches should be supplemented by and combined with environmentally led fit strategies (also known as market orientation). This is also the basis of modern business strategy, which deals with the matching of an organisation's activities to its operating environment ([Van Der Merwe, 2002](#)).

Alternatively, [Porter \(1996\)](#) sees strategy as the creation of a unique and valuable position by choosing activities that are different from those of rivals. Each of [Porter's \(1985\)](#) generic strategies – cost leadership, differentiation and focus – can be suitable under different circumstances. However, the worst situation occurs when a company falls between these strategies, as is the case with many construction organisations ([Price and Newson, 2003](#)). In construction, the importance of corporate-level management issues is often downplayed because companies are content to stay afloat one project at a time ([Cheah and Chew, 2005](#)). However, owing to the changing business environment in construction, strategic thinking is becoming increasingly important for construction organisations ([Junnonen, 1998](#)).

In the construction market, there are several types of customers with different types of needs. Thus, the common approach of having only one business model for a company or a business unit is not suitable for construction companies because they often serve customers in different business segments. As operating logics vary between the segments in which customers are likely to have different needs, multiple business models are needed to create value for each customer segment ([Pekuri et al., 2013](#)). These business models should be driven by strategy ([Osterwalder and Pigneur, 2009](#)).

Finally, the multiple business models that are needed in diversified companies require different processes, reward systems and people with particular skills and mindsets to work effectively as a unit ([Osterwalder and Pigneur, 2009](#)). If the business models are not specified, the corresponding operations cannot be designed either, at least with regard to the objectives of high efficiency and predictability. It has been said that the effect of process output is predictable only when the process is under control. This requires reduction of variability in process outputs and in the degree to which they may influence the project when achieving the desired goals ([Haponava and Al-Jibouri, 2010](#)). In other words, it is important that managers at corporate level as well understand the influence of variation at any organisational level on overall business performance because it is the job of business management to establish a structure that reduces unnecessary variability in operations. [Figure 1](#) shows this idea.

Selecting projects that fit with business models

The purpose of the conceptual framework, which is to be developed next, is to setup the managerial context in which projects are selected and decisions are made, as well as to facilitate analyses of interviews and the prevailing logic of project selection in construction companies later in the paper.

In previous studies on project selection in construction, it has been indicated that decision-making is about finding a balance between internal (organisational) and external (project) factors (Chua and Li, 2000; Egemen and Mohamed, 2007; Ravanshadnia *et al.*, 2010). The existing literature contains exhaustive lists of factors that can be used to evaluate new projects from the above-mentioned viewpoints. However, often, project selection is discussed as an isolated phenomenon without considering the broader management context, as shown in Figure 1. Thus, the focus of this study is not so much on actual decision-making factors; instead, the logic by which the projects are selected is under scrutiny.

In project selection situations, managers should have an understanding of the true business value of a potential investment (Cooper, 2001). The objective is to ensure that the organisation's competence is widely used and considered in decision-making and that business decisions are based on reasonable judgement. Thus, not only should the expected financial performance of a project be evaluated but information about markets, technical feasibility and strategic fitness should also be integrated into project evaluation (Kinnunen *et al.*, 2011; Ulrich and Eppinger, 2008). Strategic fitness is essential in ensuring that core competencies are leveraged and that the project fits with the company's resources and objectives. In turn, technical feasibility considers potential synergies (or conflicts) with existing organisational structures, processes and competences, as opposed to only those issues related to the project's complexity and risks (Carbonnell-Foulquie *et al.*, 2004).

With the above decision-making logic in mind, project selection is seen to determine the extent to which strategic plans can be implemented and if priori designed business models and processes can be used. Without clear direction, every new project that is deemed to be profitable fits with the organisation. There is a downside to selecting projects that do not actually fit with the organisation but still seem profitable: such projects need a new business model, which may only be used once and may never achieve a high level of maturity through learning. The other option is to try to use an existing, but unfitting and inefficient, model to delivering an odd type of project. By contrast, if the organisation has a clear direction, articulated business models and it bases its project selection logic on them, the organisation can establish processes for each of its business models and repeat them to achieve higher efficiency. Figure 1 shows the structure which implies that each of the business models drawn from strategy should have different order-delivery processes to ensure operational effectiveness in

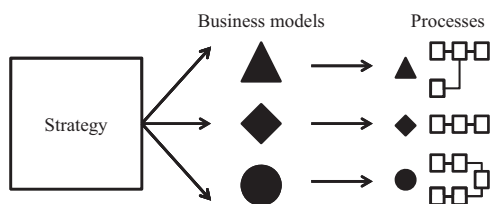


Figure 1.
From strategy to business models to specified processes

projects. Figure 2 shows the conceptual framework, according to which projects that fit with company's business models should be selected, so that projects could be delivered using effective pre-designed processes.

Research methodology

According to Wanous *et al.* (2000), very few researchers have approached the subject of project selection with a practical focus that aims to understand current practices, their weaknesses and the potential for initiating change. This research deviates from previous studies by adopting a qualitative rather than a quantitative approach in studying project selection practices in the Finnish construction industry, which is the unit of analysis in this study. Qualitative research is often labelled as interpretative, and the strength of qualitative data is seen in its richness and holism, with a strong potential for revealing the complexity and nature of "real life" (Miles and Huberman, 1994). More specifically, this is a multiple-case study that aims at mapping issues and common patterns across cases (Eriksson and Kovalainen, 2008). This approach allows the questions of why, what and how to be answered with a relatively complete understanding of the nature and complexity of the phenomenon in closer engagement with the field (Voss *et al.*, 2002; Yin, 2009).

Case selection

According to Flyvbjerg (2006), random sampling is a less appropriate strategy for case study research if the objective is to produce insights about a given phenomenon. Thus, the cases should be chosen for their validity, i.e. more purposefully. In this study, information-oriented selection or theoretical sampling (Eisenhardt, 1989) was used. In particular, a minimum annual turnover of €5 million was required because smaller companies are more likely to exhibit less sophisticated practices and, thus, would not represent the practices of key players in the industry. Twenty-six such construction companies headquartered in Northern Finland were considered for selection. Further, of these 26 companies, only noted players in the regional construction market were selected. "Noted" indicates that the candidate has a long history in the construction business or a reputation as a successful and growing company. By applying this criterion, 11 of the 26 companies were selected and contacted for interviews; these companies can be seen as typical cases that represent well the entire population (Finnish construction companies). One of the contacted companies expressed its unwillingness to take part in the study, and two companies did not respond to our inquiries at all. The key

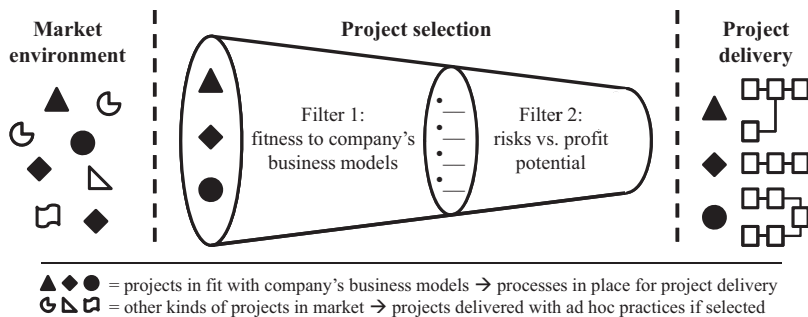


Figure 2.
Conceptual
framework of study

decision-makers (mainly managing directors) in the eight remaining companies were identified, and interviews were scheduled with one representative from each company. An overview of the companies and the interviewees is presented in [Table I](#).

Data collection

The interviews for this research were conducted during the spring of 2013. Each of the interviews lasted 1-2 hours and was recorded digitally. The interviews were semi-structured and consisted of two parts. The first part covered questions about the interviewee's perception and familiarity with the concept of a business model, as well as questions aiming to decipher the company's business model(s). The latter part of the interview concentrated on the company's project selection practices and related decision-making processes. The posed questions were related to the formality of the

No.	Interviewee	Company description	Size ^a	Main fields of operation
1	Head of regional business unit	International construction group	Large	Business unit is focussed on housing development, premises development and infrastructure construction
2	Head of regional business unit	International construction group	Large	Business unit is focussed on housing development, own development projects and contracting in the field of building construction
3	Technical Director	Domestically operating construction company	Large	70 % of revenue comes from housing development, 20 % from nursing homes and day-care centres and the rest from contracting
4	Managing Director	Domestically operating construction company	Medium	Two distinct regions: one operating on renovation construction and the other on industrial construction. Mainly on contracting basis
5	Managing Director	Regional construction company	Medium	Diversified operations: construction contracting and own development projects including housing, premises and commercial buildings
6	Managing Director	Locally operating construction company	Small	Focus on industrial construction and on own housing development. Also undertakes all types of contracting projects except infrastructure
7	Managing Director	Locally operating construction company	Small	Clear operational focus on row houses and other low-rise apartment buildings on rented rather than acquired plots
8	Managing Director	Locally operating construction company	Small	Specialises in renovating and building extensions on schools, nursing homes and day-care centres

Note: ^aThe [European Commission \(2003\)](#) defines small- and medium-sized companies as follows: a small company has fewer than 50 employees and an annual turnover and/or balance sheet total not exceeding €10 million, a medium-sized company has fewer than 250 employees, an annual turnover not exceeding €50 million and/or an annual balance sheet total not exceeding €43 million

Table I.
Overview of case
companies and
interviewees

process and the criteria used to evaluate whether to bid for or initiate a development project. Moreover, the interviewees were asked to describe a couple of their company's recent projects and the decision-making processes followed in those projects. The interview questions were predetermined, but depending on the answers of the interviewees, some amplifying questions were asked as well. In addition to the interviews, relevant information (especially with regard to the companies' business models) was gathered through company websites and publicly available brochures.

Data analysis

For analysis purposes, the recorded materials were first transcribed. Then, the analysis of the qualitative data proceeded with meaning condensation, i.e. abridging of the interviewees' thoughts into shorter formulations (Kvale and Brinkmann, 2009). First, each interview was condensed individually. Doing so enabled us to piece together relevant insights and common patterns from the interviews in relation to the developed conceptual framework, e.g. how strategic aspects appeared or how projects were selected. Furthermore, the analysis involved meaning interpretation, which involves working out structures and relations of meanings from what is not directly said, and thus, not immediately apparent in the interview texts (Kvale and Brinkmann, 2009), e.g. what was said regarding business models.

According to Gummesson (2000, p. 93), validity is seen as a continuous process that is integrated with theory and requiring researchers to continuously assess their assumptions, revise their results, retest their theories and models and reappraise the limitations that have been set for a study. In this study, triangulation (Guba and Lincoln, 2005) is the primary process; it was used in two forms to ensure accuracy of data acquisition and analysis. First, the evidence was combined from multiple sources. Second, several researchers have investigated the empirical material to provide complementary insights, cross-check interpretations and enhance confidence of the findings (Eisenhardt, 1989). After analysing the initial eight interviews, it was thought that a saturation point was reached because the interviewees largely echoed each other; thus, no additional interviews were arranged. However, the reliability of the results could have been strengthened by conducting more interviews in each company for providing an additional form of triangulation to the study.

Interview results

Strategic considerations

One of the ideas in the developed framework is that a company's business models should reflect its strategy and be drawn from it. From the interview data, in construction companies, strategy mainly defines the geographical areas of operation and sets the range for suitable project size. For example, one interviewee stated that "[...] our strategy is to take part in projects from 1 to 10 million". Indeed, the company's fitness for a strategically determined project size was the most frequently mentioned decision-making factor in interviews.

This is natural because in construction business, cost advantage may come from the size of the company, for example, a smaller company may not have the overhead expenses of its bigger competitors, which must be included into their tenders. However, setting the lower limit high enough reduces the amount of smaller competitors that can

carry the risks associated with a project of a certain size. This aspect was highlighted by one interviewee as follows:

I say that we have (considerations of) the strategic fit (of a project) in such a way that we build row houses but not detached houses. It doesn't fit with our strategy, it doesn't fit for us. We cannot go that low in our costs.

In addition to project size, strategy (at least in a similar sense that Porter (1996) defines it) does not really restrict these companies in any meaningful way. Although companies do have their speciality areas, there is no strict consideration of specific project types (e.g. whether to take on renovation construction or commercial buildings) or contractual settings. Instead, there is a considerable amount of flexibility in the types of projects these companies may actually be willing to undertake, as the following quotes clearly demonstrate: “[...] if you strictly decide to focus on housing in the field of own development, then if the house development plunges, you are out of business” and “[...] as a building company, we must be something else than just a company that orientates it to the fixed-fee contracting. We are able to offer anything”.

Perceptions of business models

In addition to strategic considerations, it was necessary to find interviewees' perceptions of their companies' business models at the outset to analyse the role of business models in project selection. According to the data, most interviewed managers were not used to analysing or describing their business as a whole, and many of them seemed unfamiliar with the business model concept. A common approach to explaining their business models was to separate different project modes or contractual settings into construction contracting, project development and housing development projects. As one interviewee stated, “Our business models, I think, are project development and construction contracting. Being completely different things, the nuances of different business model can be seen on them”.

The other approach was to outline a company's business according to geographical areas. For example, one interviewee defined the company's business models as “mastering all kinds of construction except infrastructure building” within a certain area that the interviewee thought to be the company's market. Another interviewee explained that the company focusses on renovation construction with its southern operations, while concentrating mainly on industrial buildings in the north, combining the geographical and operational definitions of the business.

The last approach for defining a company's business models was according to fields of operation such as infrastructure construction, business premises or residential construction. From a theoretical viewpoint, this approach might be the best suited for analysing one's business holistically because it points to the kind of output being produced and the markets for which said output is produced. This allows a manager to understand the value a company is creating for its customers, as well as the requirements for processes that create the value.

Project selection logic

Regardless of how the interviewees defined and described their business models, there was no consensus on whether the business models were project-specific. Some stated that it should be taken for granted that business models are mostly tailored for each project and customer. In contrast, the rest said that their operating models are more or

less fixed under certain project modes (e.g. contracting construction) and cannot be altered at the project level. However, even in these companies, it was stated that “some tuning is possible”, and this tuning was linked to return on investment, which changes depending on the risk level of a project. This indicates that project selection in these companies is not guided by any particular business model. Instead, the decision-making process is dominated more by short-term factors.

In general, the interviews revealed that in smaller companies, decision-making practices are person-centred and intuitive and that the related processes are highly informal, as the following quotes also suggest: “[...] it is gone through in that coffee table as we do not have that big of an organisation”. “It was in tender preparation when we had all other employees under vacation. Our firm was closed so I did it myself”.

In larger companies, decisions are made by a small group of cross-functional managers, and there are specified processes and criteria in place to evaluate projects under consideration. As one of the interviewees explained:

Different criterion will be gone through that determine whether it fits for our business, as it will yield a certain number that illustrates if it is a suitable project for us.

However, the practices in all companies regardless of their size aim at a common objective: to chart the level of risk associated with a project based on which the profitability or return on investment of a project can be estimated. Thus, decision-making processes are strongly associated with calculations that take into account multiple factors ranging from the general economic situation to project complexity and from the client in question to the project mode.

The effect of the economic situation or general market situation on companies’ decision-making process was recognised in most interviews. Interviewees stated that during the quiet times, companies are willing to compromise on profitability requirements to “secure a basic work load”, keep employees employed and maintain company turnover at a certain level. Only two of the eight interviewees said that they would not compromise on project profitability by letting undesirable projects pass through the go/no-go decision, stating that “they rather run with lower volumes than try to hang onto certain turnover rates (during quiet times)”.

The other interesting, although less frequently considered, factor was project complexity. One interviewee said that the company usually requires that a project have some complexity involved, so that there is some room for competing in terms of skills as opposed to competing on price alone. The interviewee added that “In this kind of renovation, where there will be some specialist things involved, we think that we have some cost advantage with us”.

Another interviewee, also, highlighted the importance of complexity in projects: “We don’t tender any row houses or something like that. We don’t fare in them, there must be a level of complexity involved”.

Complexity is considered strategically important because it eliminates competition, given that the price formation is different compared to simpler projects such as housing. The estimation know-how is accentuated. The interviewees reckoned that the company is differentiated from its competitors based on its know-how; they further pointed out that know-how is a factor in cost estimation as well as construction. One desirable project from the company point of view was described as follows: “No one [competitors]

knew what it would cost, that is why we would have gone there. The worse the papers, the better it is for us”.

Thus, estimation know-how strongly governs what these companies do. The same interviewees that emphasised the importance of complexity also thought that the client’s size and solidity were important factors in the decision-making process, possibly because a notable size and financial solidity guarantee that clients are able to pay for the additional work and changes after the risks related to complexity and inadequate planning have been realised.

The project delivery mode as such was not stated to have any recognisable effect on the decision-making process. However, because different project modes were perceived to have peculiar risks, they affected the magnitude of the return on the investment from certain types of projects, and thus, the decision-making outcomes. In own development projects, there are a few additional factors that interviewees said they consider in decision-making: market demand, status of the balance of previously finished housing, level of advanced bookings and attractiveness of an area. However, it is the combination of estimated profitability and the level of risk that matter the most.

Finally, one interviewee argued that decision-making is something that the companies want to conduct in secrecy, and therefore, no one wants a standardised, industry-wide decision-making framework because it would skew the competitive setting. However, what this statement actually confirms is the notion that it is not business models that compete in construction, but that companies compete with similar business models, and the company that gets its estimations right succeeds; as one of the interviewees said: “No one needs to be fooled; you just have to know where the business lies”.

Discussion

This research sought to answer to the following research question: what is the role of business models in project selection in construction companies? From theoretical grounds, it was suggested that in construction companies, there should be a structure in place where business models are drawn from strategy, and for each business model, there should be specified processes in place to ensure operational effectiveness. Furthermore, it was argued that when screening and selecting projects from diverse construction markets, managers should ensure that a new project fits with some of the company’s existing business models and the associated project delivery processes. However, it became evident from the interview results that the majority of the studied companies do not follow such logic. Instead, the economic situation in the markets and the current workload affect their willingness to stick with “desired project types” (equivalent of Filter 1), where a company excels, as well as to return on investment targets set for projects (Filter 2). Thus, companies’ project selection behaviour is mainly governed by the rate of resource employment rather than by business models, whose role in project selection seems to be limited to adjusting profit requirements to the levels of risk associated with projects of certain types or characteristics.

Theoretical implications

The study provides a distinct viewpoint on the existing literature on project selection and decision-making in construction. Previous studies have approached the subject mainly as an isolated phenomenon (Chua and Li, 2000; Enshassi *et al.*, 2010), whereas in

this research, project selection has been presented and studied in the broader context of business management. In addition, some of the previously developed bidding models were evaluated in terms of their accuracy in emulating actual decisions based on historical data (Wanous *et al.*, 2000), as if there is no need to take a critical look at the prevailing logic of project selection as such. In this study, a conceptual framework was developed for analysing current managerial practices and the prevailing logic of project selection. The framework theorises the role of business models in project selection, especially for providing better support to the operational aspects of the construction business through consistent management practices and intentionally designed business models.

According to Holt (2013), managerial factors are ranked the highest among other generic agents (financial, macroeconomic, company characteristics) that cause construction business failure. Selecting unfamiliar areas of operation, undertaking unfamiliar types of work, emphasising opportunity ahead of ability and generally erroneous decision-making are only some of the managerial factors leading to business failure that are linked directly with project selection. Project selection in construction companies appears to be governed by short-term objectives rather than any particular business model and it can be hypothesised that doing so has a negative effect on performance. If projects that do not actually fit with the organisation and its business models but seem profitable are selected, the likelihood of using *ad hoc* practices during those projects increases.

Davies and Brady (2000) stated that when a company departs from its traditional business, its learning curve in the new business begins. Sometimes, this can be intentional if a company aims to improve their competitive position through the development of new capabilities by learning from the initial project. However, if a company constantly changes its standard business or does not even know what it is, it will never achieve what Davies and Brady (2000) call “economies of repetition”, or moving from a unique project to the execution of many projects of a similar type. In other words, this prevailing unsystematic practice seems to increase variation, which, among other things, generates waste and results in low productivity. The objective of creating the maximum customer value can easily be contradicted as well when decisions are made purely from the financial viewpoint. This is because the project manager’s focus shifts to efficiency after contract agreement, and business model execution and value creation become secondary objectives.

Practical implications

The logic followed for selecting new projects determines how much of an organisation’s existing know-how can be utilised in a project. If the new projects are better aligned with earlier projects and fit in the existing business models, it is likely that a company has the required competence for delivery and the project will be successful. In contrast, if short-sighted factors dominate competence in decision-making, it is more likely that the project would not be delivered as efficiently as possible. More consistent decision-making would enable managers to develop processes for specific business models and different types of projects, which would aid the objective of reducing the amount of variation and wasted resources. Well-designed and managed processes are key productivity drivers, and they enhance a company’s financial performance and

competitiveness, as well as increase customer satisfaction if the benefits are reflected proportionately in prices.

However, current business models in construction are too similar to be used as the basis of competition, and although construction companies may let their customers specify their orders however they like, the business is still just customer-led rather than customer-oriented. Slater and Narver (1998) distinguish these two philosophies so that “the first is primarily concerned with satisfying customers’ expressed needs and is typically short-term in focus and reactive in nature”. The latter “goes beyond satisfying expressed needs to understanding and satisfying customers’ latent needs and, thus, is longer term in focus and proactive in nature”. If strategies would have a more notable role in defining a company’s character and the evolutionary path followed by a company to achieve its purposes, companies could better distinguish themselves from each other.

Conclusion

In this research, project selection was studied in the context of business management with the specific aim of understanding the role of business models in project selection in Finnish construction companies. From theoretical grounds, it was suggested that in construction companies, there should be a structure in place where business models are drawn from strategy. Furthermore, for each business model, there should be specified processes in place to ensure operational effectiveness. In addition, a conceptual framework was developed to facilitate interview analysis. The inherent idea of this framework is that when screening and selecting new projects, managers should ensure that said projects fit with the company’s existing business models, so that specified processes can be utilised for project delivery and developed further.

However, the interview results pointed out that such logic is not followed in project selection in construction companies. Instead, the economic situation in the market and the current workload notably influence companies’ willingness to stick to those speciality projects in which they excel. The role of business models is limited to adjusting profit requirements to the levels of risk associated with projects of certain types. In other words, the chain from strategy to business model to project selection and project delivery seems to be broken rather than consistent – a flaw that is likely to induce negative effects on projects, their productivity and ability to satisfy customers. Productivity development suffers from discontinuity and non-repeatability of operations, while it is reasonable to think that customers would be more satisfied if companies approached their business from a more value-oriented viewpoint.

The interview results verify the previous findings that the use of statistical or mathematical models is infrequent within the industry (Wanous *et al.*, 2000; Egemen and Mohamed, 2007). Furthermore, it is noted that the most important factors (profitability, need for work, risk, client and competition) influencing decision-making are more or less the same as identified before (Bageis and Fortune, 2009; Chua and Li, 2000; Egemen and Mohamed, 2007; Shash, 1993; Wanous *et al.*, 2000).

The limitations of the study are related to the sampling strategy, authors’ interpretation of the interview results and interviewees’ ability to describe their reality. Eight interviews were thought to be adequate to capture the key aspects that represent current practices in Finnish construction companies because the interviewees echoed each other and, thus, a saturation point was reached. However, the reliability of the results could have been strengthened by conducting a greater number of interviews in

each company. In future studies, observation of actual decision-making situations and companies' operational methods in general should ensure that business models and their relationship with project selection are understood more comprehensively. In addition, similar research should be conducted in other countries to clarify the impact of specific market characteristics on the relationship between business models and project selection.

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