

Green Business Models in the UK Construction Sector: Empirical Study

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Abstract

A business model is considered to be green when a business changes part(s) of its business model and thereby both captures economic value and provides environmental improvement. The aim of this paper is to explore how managers define the term “green business model” in the UK construction sector. Twelve experienced managers defined green business models differently than what is found in literature and empirical studies, however some of them provided definitions that are partially consistent: they highlighted the relationship between economic benefits and environmental benefits in these models. Nevertheless, their understandings and definitions lacked the view of using green business models as an effective tool to create green value propositions and analyze how this value can be captured in the form of profits and reputation. The results of the interviews suggest that some of the managers do neither understand the concept fully nor utilize any similar value creation analysis in their companies. This thinking may not be limited only to the UK.

Keywords

Green business models, business models, value creation, value capture, and construction.

1. Introduction

Despite the importance of business models in other sectors, such as manufacturing and e-business, and their utilization as a management tool and practice for designing and analyzing a company’s value creation logic, they are a less discussed and researched concept in the field of construction [1]. The business model concept became well established with the beginning of the Internet in the mid-1990s and the concept of e-business, and it has been scattered since then. Thus, the e-business boom originated the business model concept as a new unit of analysis in strategic management disciplines [2- 4]. In spite of its roots and origins, the concept effectiveness is not limited to dot-coms [5]. Furthermore, the business model concept is relevant for researchers trying to examine the logic behind economic value creation and it can guide companies to become sustainable and more competitive [6, 7]. Alternatively, green business models can be seen as an intersection between two research domains, namely environmental sustainability in business and business models [8]. Therefore, the green business model concept has the potential of explaining sustainability in terms of creating value and how value is defined.

Construction companies are increasingly being challenged to green their products, services and processes in order to respond to the growing interest of sustainability. Therefore, protecting the environment has become one of the key issues for the construction industry across the globe. The industry began to perceive environmental sustainability as a central part in strategic management of business [9-11]. The construction industry in the UK has addressed the issue of sustainability extensively, and developed measurements to evaluate sustainable and green buildings [12]. For example, Building Research Establishment Environmental Assessment Method (BREEAM) was introduced by BRE in 1990 as the first voluntary building assessment method in the world. BREEAM addresses wide-ranging

environmental and sustainability issues such as management, health and well-being, land use and ecology, water, energy, transport, material and waste, and pollution. A weighting system is applied in order to obtain the final BREEAM rating which is awarded as: “Excellent”, “Very good”, “Good”, and “Pass” [13, 14]. BREEAM has five major schemes for certification. These schemes can be summarized as follows [15]:

1. BREEAM Communities: covers planning stage of communities.
2. BREEAM New Construction 2011: covers design and construction of new buildings (non-domestic).
3. Code for Sustainable Homes: covers design and construction of domestic buildings.
4. BREEAM In-Use: covers in-use assessment of an existing building.
5. BREEAM Refurbishment: covers refurbishment and renovation.

The majority of sustainable and green construction research efforts have focused on improving design strategies, design tools, and alternative design processes, and on developing systems, products and technologies. However, a large omission is business model transformation. What is missing is how companies can systematically create and lead fundamental transformations of their conventional business models to make them green and profitable [16]. The paper aims to contribute to the limited research of green business models in the construction field [17, 18] by establishing a common understanding and definition of them. Twelve managers have been interviewed in the UK and their answers have been analyzed from the theoretical lens of green business models. The structure of this paper is as follows. First, the green business model concept is introduced. Second, a research approach is presented, followed by results and discussions. Finally, the key issues from the literature and results are grouped together for conclusions.

2. The Green Business Model Concept: Focus on Green Value Creation and Capture

In the literature, there has not, so far, been an established, internationally recognized definition of a *green business model*, nor has there previously been any structured way of describing these concepts as a whole. There are many terms in the public and academic debate about how companies improve their business to become greener and how they are categorized as green companies from processes or the end result of products and services [19].

Sommer discussed green business models from a theoretical perspective as well as from empirical perspective of seven case studies [8]. According to him, a green business model can be defined as “*a business model that represents a significant improvement (discontinuous leap) in overall environmental performance relating to its entire value chain system vis-à-vis that of conventional business model (i.e., the reference case). This improvement is directly attributable to the business model through the alternative design and configuration of business models elements.*” In addition, [19] defined it as “*Green business model innovation is when a business changes part(s) of its business model and thereby both captures economic value and reduces the ecological footprint in a life-cycle perspective.*” The two definitions suggest that green business models have lower environmental impacts or have improvement on the environmental performance – whatever form this might take. Furthermore, the definitions state the change on the original business model elements to reach a green business model. These definitions form the basis to introduce a green business model concept into the construction sector. The starting point will always be the analysis and assessment of the existing business models in a particular construction company to be able to move to a green business model and it becomes vital to establish some common language on business models and their elements.

“*A business model describes the rationale of how an organisation creates, delivers, and captures value [20].*” The logic of the concept starts with dividing a business model into two value perspectives: value creation and value capture [8]. Key resources and key activities elements constitute the value creation perspective while the value proposition and target group elements constitute the value capture perspective. Value creation and value capture involve financial arrangement such as cost and revenues. Thus, a fifth element is added: financial logic [8, 18]. Each element is further divided into sub elements as illustrated in Figure 1 below.

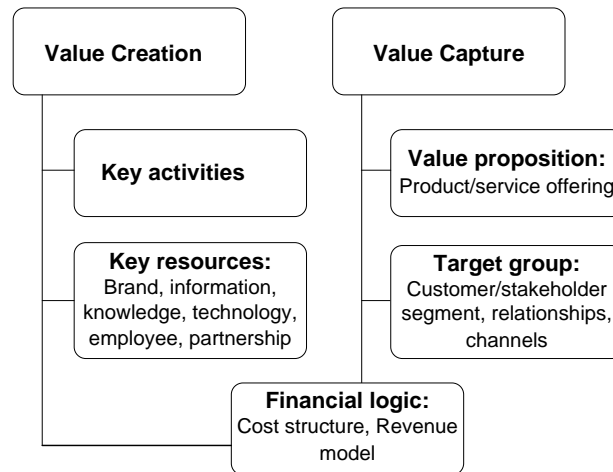


Figure 1: Value creation & capture of business models

From Figure 1 above, green business models have two value perspectives that are based on a green value proposition. Companies need to assemble a bundle of resources and activities which, when combined, will create value for customers or users. This combination will be done partly within the company and partly externally [21]. The outcome will be a green value proposition that will be offered for customer segments and generate revenue streams. This determines the value capture for the company [16].

3. Research Approach

The aim of this paper was to explore the definition of green business models from the construction practitioners' and professionals' perspective within the UK. Since the aim was to explore a new concept, a qualitative stance was adopted to gain deep understanding. Qualitative methods tend to be concerned with words rather than numbers, and observation to express reality, and attempt to describe people in natural settings [22]. They cover the subject of study comprehensively and produce a wealth of detailed data on a small sample [23, 24]. In addition, qualitative data has often been advocated as the best approach for discovery and exploring a new area [22]. These features are aligned with the nature of the current research. This paper presents an exploratory study in order to further understand green business models in the context of construction. The sampling used for this study was purposive with an aim to achieve a wider representation from different stakeholders in the construction sector. The selection criteria used for participants was as follows:

- Senior/managers in the construction industry.
- Relevant experience in the sustainability/ environmental strategies and practices.
- A decision maker regarding sustainability issues.
- Ideally, a sustainability/ environmental manager, expert or officer.

Twelve face-to-face semi-structured interviews were conducted with managers in the UK between July and December 2013. Of these, three interviews were conducted via telephone; in addition one interviewee provided a written response to the questions. The sample was heterogeneous to be able to obtain a holistic picture on green business model definitions. It consisted of 1 Academic, 3 Clients, 3 Architects and Consultants, 4 Contractors, and 1 from Procurement. Interviews typically lasted for one hour at the interviewee's place of work. The interviews were audio recorded, with interviewee consent, transcribed and analyzed using the lens of the aforementioned theoretical aspects. Interviewees were asked about how they define a green business model. Section 4 reports the direct answers and quotations to highlight their views and where relevant, the answers were related back to the literature. The interviews revealed the current understanding of green business models in construction companies. At the same time, they provided the basis for suggesting how construction companies can benefit from adopting green business model thinking into their management.

All of the interviewees had considerable experience in the construction industry; in particular they had relevant experience on green issues with some of them having environmental or sustainability in their job titles. A detailed description of the interviewees' profiles is presented in Table 1 below. The following section summarises the results obtained and discussions.

Table 1: Interviewee details – Total of 12 participants

ID	Type of organization/business	Job title	Years of experience	Size of company
A	University	Professor	15	2500
AC1	Architects & Consultants	Architect & Director	20	6
AC2	Architects & Consultants	Associate	20	6
AC3	Architects & Consultants	Environmental manager	5	350
C1	Contractors	Director	50	50
C2	Contractors	Sustainability manager	17	800
C3	Contractors	Senior sustainability manager	14	5000
C4	Contractors	Senior sustainability manager	12	6000
PR	Procurements	Sustainability manager	8	50
CL1	Clients/ Local Authority	Capital programme director	40	10.000
CL2	Clients/ University	Building surveyor	20	245
CL3	Clients/Local Authority	Operational Facilities Manager	15	10.000

4. Results and Discussions

To capture the general perceptions of the UK construction sector on the concept of green business models, interviewees were asked to define a green business model term. They believed that such a definition is wide in nature and is not straight forward to answer and it depends on how “green” is defined in the first place, because the term “green” is used and misused in many ways. In most cases, “green” can even include social aspects and considerations. Companies, policy makers, and consumers view green from different angles and use different sets of variables to choose the pathway of going green [25]. However, they were still able to provide some definitions from their own perspectives. Their perceptions are discussed below.

It was clear that “green business model” as a term, is not frequently used in these target companies, while as a concept or a management tool it is used differently than what is typical in other sectors or within the literature of management and business. These results are consistent with an empirical study conducted in a small sample of Finnish construction companies. Although the study was about business models and not green business models, it demonstrated the absence of business models thinking as a whole in the construction context [1].

Interviewees mainly defined a green business model from the outcome perspective, whether the outcome is a green building or a green product or services. In addition, some of them regarded a green business model as a model that helps people and organisations to address the global challenge of ‘sustainability’ and to enhance the long-term, profitable survival of industry. Furthermore, the interviewees highlighted the strong relationship between the environmental improvements and the economic success of companies in a green business model, but how to create models that can deliver both remains the main barrier.

The participants provided some examples of what can be classified as a green business model, namely: whole life cost and closed loops. These examples are consistent with some case studies reported from Nordic countries on green business model innovation, such as life-cycle models, which include various categories with respect to what part and how much of the value chain is ‘greened’ by the model. Examples reported are: green supply chain management, take back management, and cradle-to-cradle models [19]. In addition, one of the interviewees suggested that a green business model “*is a model that would consume the least natural resources of the planet*” in the process and in the end products or services.

AC3 defined it as *“one which internalises externalities”*. From his perspective, successful companies develop an account for profit and loss of the natural capital and they benefit from acknowledging their environmental impact. Moreover, some of the interviewees demonstrated a thorough understanding of the term and they have been using it to define and capture green opportunities and propositions. For example, C4 reported they have green business officers in the whole markets in which they operate and their function is mainly to develop a classification, from the company perspective, for green businesses or opportunities. Another important function for those green business officers is to help the company to win green projects. This view is more aligned with the focus of green business models, as suggested by the literature, in which it can be used as a management tool to create value for customers and capture this value in terms of profits and reputation [8].

The academic (A) stated *“a green business is not a very green business it is just a greener business than it was so a green business model is something around how you make the business greener. I think the level of greenness depends on lots of things”*. Therefore, from the interviewee’s perspective, a greener business model is one that will provide a good start for businesses, hence attracting more companies to engage in green activities. The construction industry is yet to overcome the perception of green costs more [17, 26].

Nevertheless, some of the interviewees had concerns in using the term “green” because this means an exclusive green solution which is not enough to tackle the global issue of sustainability. For example, AC1 provided a definition aligned with the “triple bottom line” view. He defined it as having *“three profit lines: financial profit, social profit, and environmental profit, so instead of having a single profit line with pounds and pennies it has three profit lines and companies need to show profit in each of them - that is a green sustainable business model.”* Along the same lines, AC2 pointed out that the concept of a green business model can be understood as something external to businesses and he hoped that green issues, environmental issues, and ethics could be deeply rooted within the business, but has to accept that the business structure and model of the company will have many other things not just simply green or environmental issues. He argued by using such a term, it implies segregation of other issues in the business such as viability of businesses. Although they had concerns about the exclusive meaning of “green”, they believed that the green solution or the green issue is an important and a large portion of the sustainability agenda but is not all of it. In addition, they indicated the importance of the financial dimension of the green business model.

Some of the managers interviewed were in opposition to the term “green business model.” Their opposition stems from the widely held belief that green or environmental issues are something different and strange. According to them by using such a term, it continues to deal with ‘green’ as a separate strand and not as the main stream of doing business, yet one of them argued that when companies start or engage in green activities they may put more emphasis on stakeholders’ engagement and the ability to define the intangible benefits associated with green business models, but principally everything will be the same as for any good business.

From the above, green business models can be defined according to the following characteristics:

- They address the global challenge of 'sustainability'
- They are 'greener' business models than existing models
- They are models that consume the least natural resources of the planet
- They provide a business opportunity or a proposition that makes financial sense and also has an inherent environmental or social benefit: the opportunity needs to be defined and captured by companies from external customers and to be converted internally to a product or service that is of value to customers.

A generic definition for green business models can therefore be:

“A business model is considered to be green when a business changes element (s) of its business model to create and capture a business opportunity or a proposition that provides environmental improvement coupled with economic benefits. The environmental improvement can include, but is not limited to, changes to products, services, processes, and policies, such as reducing energy consumption and waste generation, using renewable resources, and implementing an environmental management system.”

4. Conclusions

This paper has focused on analyzing managers’ understanding of the green business model concept in UK construction companies. Semi-structured interviews were the main instrument for data collection. Interviewee answers were analyzed using the theoretical perspective of green business models. All of the interviewees had

considerable experience in the construction industry and relevant experience on green issues with some of them having environmental or sustainability in their job title, for more details refer to Table 1 above. According to the results, managers understood green business models differently than what is familiar in the business and management literature, where business models (in general) originated from. The main difference is that they relate these models to the outcome or final results such as green building, green product and services. However, most of the interviewees provided definitions that partially agreed with the available definitions from the literature. The partial agreement was on emphasising the link between environmental improvement and economic success in green business models. In general, interviewees' understanding and definitions lacked the view of using green business models as an effective management tool to create green value propositions for customer segments in specific markets. They did not see how to analyze this value and capture it as a profit and reputation.

The green business model concept can facilitate better understanding of the green value creation and value capture. In addition, construction companies may engage in various environmental activities but they may not make profits. This paper suggests that to profit or capture value from environmental activities and practices, the comprehensive configuration of business models has to be at the core.

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