



Business Model Reconstruct and Innovation: A Case Study in Construction Company in Indonesia

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ABSTRACT

The purpose of this study is to reconstruct the business model and identify business model innovation using the uncaptured value in company S. The qualitative case study was conducted at one of the construction companies in Central Java. This research used in-depth interview techniques with seven informants who had managerial work backgrounds. The research results revealed various elements of the business model at company S in the canvas business model concept. Business model innovation through uncaptured value in this research found the need to innovate in critical resources (adding company system and regulations, scales, AMP machine, truck mixers, stone crusher machine, and improving human resources), customer relationship (adding customer satisfaction survey), key activities (adding employee coaching and training, improving material storage and production improving project search activity), key partners (banks), channel (add a bundle of promo), and cost structure (repress value of maintenance of production equipment).

Keywords: *Business Model Canvas, Business Model Innovation, Uncaptured Value*

1. INTRODUCTION

Competition in the world of construction continues to be intense today. In Indonesia itself, construction is in fifth position in contributing to the country's economy by recording 10.42% of Indonesia's Gross Domestic Product (GDP) in the first quarter of 2022 (the first position is Manufacturing Industry at 19.19%, followed by Wholesale Trade and Car and Motorbike Repair Retail at 13.09%, Pertamina, Forestry and Fisheries at 12.55% and Mining and Quarrying at 10.48%). The challenge in the construction business is that construction activities are in a VUCA environment, namely volatility (significant level of fluctuation or change), uncertainty (high uncertainty), complexity (problems involving many factors and parameters), and ambiguity (unclear information) [1]. Contractors have to deal with employers whose desires sometimes change. In project work, contractors have a high dependence on subcontractors and suppliers, unbalanced supply in the field, and delays in payments by work employers. Employers who are elements of government also cause confusion because they act as service users and facilitators and include regulatory functions. Thus, construction companies need to develop their capacity by understanding the problems and the consequences in order to be able to make short and medium-term plans to prepare themselves for various possibilities in the future [1]

Company S is a construction company in Central of Java supported by a batching plant located in Kudus and Pekalongan. Company S experienced a change of director and still needed to have standard rules for running a business. Externally, the competitive conditions faced by company S include the number of other contractors offering lower prices, the time given in the auction process, and the difficulty of getting support for requirements that still need to be made available. Apart from the construction business, company S also has a batching plant for selling concrete. Currently, many other batching plants have been established by competitors, which makes unhealthy price competition.

A business model is a tool that can provide a better understanding of how companies run their business, what their focus is in achieving sustainable competitive advantage and how a company can change in challenging era conditions [2]. Several studies have been conducted on business models [3] [4] [5], proving that business models influence company performance. However, country characteristics remain a consideration in preparing business models, including in the construction business, where the state regulates market requirements and competition. Apart from that, there are

few business models in the construction sector in Indonesia. Therefore, this research aims to reconstruct the current business model and identify business model innovations using uncaptured value and strategic plans in company S.

2. LITERATUR REVIEW

2.1 Business Model Concept

Business models are about how to run a business, and business model innovation is about how to run a business through different avenues. Both are crucial strategic issues for general managers, entrepreneurs, investors, and everyone who expects to be in such an essential position in their career journey [6]. Richardson [7] views that the business model consists of three main components that reflect the logic of strategic thinking about value to achieve competitive advantage, namely: 1) the Value Proposition is what a company will provide to its customers (offer), why customers will be willing to pay for what the company provides (target customers), and basic strategies to win customers and gain competitive advantage; 2) Value Creation and Delivery System is how a company will create and deliver the value they will offer to its customers by utilizing its sources of competitive advantage such as resources and capabilities, Organization: value chain, activity system, and business processes, position in value network: relationships with suppliers, partners, and customers; 3) Value Capture is how a company generates revenue and profit.

Osterwalder and Pigneur define a business model as the rationality of how an organization creates, delivers and captures value.

- a) Value Proposition: What is offered to customers in a particular segment, the reasons why customers prefer one company over a competitor.
- b) Customer Segment: defines various groups of consumers who want to be reached and served by the company.
- c) Channels, describes how the company reaches out and communicates with customers to convey the value proposition offered.
- d) Customer Relationship: what kind of relationship does the company want to build with its customer segment
- e) Revenue Stream: all revenue received by the company
- f) Key Resources: the resources required by the executing company in finding customers, delivering value, and achieving profits
- g) Key Activities: the main activities of the company in creating value and generating profits so that the business can be run properly
- h) Key Partnership: the company's relationship with the parties that contribute to the main activities of the company, such as suppliers, distributors, sellers, and others.
- i) Cost Structure: the cost required by the company in implementing its business model. These costs can include the resources needed, the main activities carried out, and the cooperation to be formed.

2.2 Business Model Innovation Concept

Bocken, et al. [8] showed that companies are able to identify new opportunities for their business by mapping the value proposition, damaged value, and lost value among various stakeholders. This can help in understanding the exchange of value between stakeholders and for the stimulation of the emergence of new business model concepts. Yang et al. [9] developed the concept of damaged value and lost value into two new concepts, namely surplus value and no value, which are then combined with the product life cycle. These four concepts are called uncaptured values and are defined as potential values that can be captured but have not yet been captured. More clearly, the four values in value uncaptured are as follows.

1. Surplus Value (VS) is a value that exists but is not needed. It relates to something or activity more than is required. Surplus Value is considered a waste or value that does not need to exist.
2. Value absence (VA) is a value that is required, but does not exist. These values are things or activities that are needed but not yet provided. Value absence can be considered as a need that could have been met but has not been met; or as a lack of resources needed by the company or its stakeholders.
3. Value Missed (VM) is a value that exists and is needed, but not exploited. This value could create more value but is currently wasted or not captured enough by current business models. It can be considered a waste with a high potential for use. This value does not bring negative results but reduces the value that can be created.

4. Value destroyed (VD) is a value with negative consequences. This causes negative effects for the company or other stakeholders and is a negative result of the current business model.

3. METHOD

This study is qualitative research with a case study approach. In-depth interviews were given to seven informants who have a background in managerial work at company S and have been employees of company S for more than 4 years. Primary data of this study is data provided directly by informants to researchers through data collection techniques, such as interviews. Secondary data that is intended is in the form of data obtained from other sources, such as documents related to the interview results. This data collection method is called triangulation. This method combines various methods of collecting data from the same source. Previously, triangulation was one way to strengthen the validity of the data.

4. RESULT AND DISCUSSION

4.1 Existing Business Model

In the value proposition, the company prioritizes the value of product quality and customer service. The company uses materials that are good for casting and is open to discussing with customers about any customer needs.

“Company S, especially in concrete, always maintained quality from the beginning. We are a manufacturer specializing in producing various mining machines including different types of sand and gravel equipment, mineral processing equipment and building materials equipment. Quality is prioritized here.” (SD)

According to Song [10], the quality of concrete construction is closely related to various aspects such as construction technology, vibration, maintenance, construction management, etc. Company S wants to provide information to customers related to construction need about concrete and help customers to make proper casting preparations. Through knowledge sharing, the company can educate customers on how to treat concrete before and after casting so the result can be as the desired quality.

“For our customers, everything is important, we prioritize service, the familiarity of our team, from technicians to drivers in the field”(ZA)

In the customer segment, companies as construction services and concrete manufacturers have the same target customers, namely contractors, governments, companies, and individuals.

“We must have many contractors preferences, just like the winner of tender in government project like APBN,” (RS)

“.. For the village, every year there must be work there, they often take our product..” (ZA)

“The batching plant customers are from stated-owned enterprise, or just ordinary people who want to build a house” (ES)

Kandil et al., [11] describes there are two types of construction contracts: private employment contracts and public employment contracts. Under public works contracts, financing is carried out from public funds, so some legal restrictions are created to prevent manipulation of public interests. Besides viewed from the point of view of the cost source, especially for concrete delivery, it can only be done if it is still at a distance of 35 km from batching plants in Kudus and Pekalongan. This is intended to keep the concrete from setting inside the mixer truck.

“we only have a distance of about 35 km, we have to maintain quality carefully” (RS)

“Yes, the problem is that concrete has 4 hours maximal in the mixer truck.” (ES)

In the customer relationship, the company approaches customers through a survey of casting locations, provides support and testing in accordance with customer needs, and builds communication related to location needs before and after casting.

“Yes it’s different. It depends on each customer so we have to know the character of each customer, at least what they want, so we explore what they want first and then we could give some advice if there was anything we could do for them, even though it’s just not about our product” (SD)

According to Matu et al., [12], the availability of customer support improves the performance of contractors in the road construction sector. Company S relies on communication through discussion as a way to build and maintain relationship with customer. Project managed by private sector didn’t ask for complex requirement like manged by government. Customer working on government projects have additional needs such as making support that company S

is able to provide material or equipment that they require in auction. Company S also have to support through concrete testing and composition testing with relevant agencies.

In the channel, the company uses marketing and social media such as Instagram, Tiktok, Whatsapp. There are other media such as google, email, website, phone, LPSE, and e-catalog as a media for companies to approach customers and customers want to know about the company.

“we have offline marketing services, to visit every customer and see development buildings. For online there are website, telephone, whatsapp, email. We also have social media like Instagram, tiktok, like that, may be sometimes one or two customers go through it” (RR)

According to Shakila and Nasution [13], customers are more interested in seeing promotional materials that display product information, customer testimonials, videos and product images. Company S make documentation of the work that has been done so far, so potential customers can see the appearance of work result. in the service business as a contractor, the way to get projects is quite different between public and private project. Private project just need marketing personnel to approach the job owner, but public project must used auction system, named LPSE or e-catalog.

“we get our customers by marketing approach, that’s for private sector. If its public sector, we have to monitor LPSE and participated in the auction..”(AF)

In the key activities element, there are several activities such as survey and casting scheduling, then related to production activities such as material storage, production process where the concrete mixture is processed and put into the mixer truck, delivery process, and pouring concrete mixture at the casting site.

“Before delivery, we have to check by field survey first, related to road through the location, the match truck size, to minimize level risk of accidents. We also scheduling the time a day before. The delivery day activities like coordination between BPO and driver to making concrete”(SD)

Relevant with Olugboyega et al., [14], keeping records of supply, demand and production is fundamental to the sustainability of the ready-mix concrete production business. Company S was doing field survey first. After conducting survey, Company S knows the customer’s needs and make schedule for casting. Scheduling was announced every morning. When the day of delivery come, Company S filling concrete mix into the mixer truck. It involved production people and required materials. After mixer truck has been loaded, drivers took the truck to the casting location. Other activities company S as contractor such as looking for job projects and preparing all administrative as well as clarifying and implementing projects are also included as key activities to be able to get a lot of work that provides benefits for the company

“The main activity as contractor was looking for projects, calculating the RAB, then if we win, it menas the work starts by signing the contract, preparing administration, preparing project presentation, then there is a filed survey, yes, every week we have to join meeting”(AF)

In key resources, the company has human resources in the batching plant such as production (BPO (batching plant operator), loader operator, driver), head of plant, technician and administration. In the contractor, Company S has logistic, administration, filed executor, field worker, and certified experts. Then, company S has material resources (split stone, cement, water, sand, additives, iron, aluminium, and glass), tool resources (batching plant machines, loaders, mixer trucks), and tool support resources (tires, oil, fuel).

“we have a lot of equipment resources, starting from electricity for the activity process of production equipment, batching plant equipment, loaders, TM” (RR)

“What we use are water, sand, then aggregate like stone, cement, additive. Those are prioritized. Then we have tools for production as fuel, tires, oil”(RS)

In the key partners element, the company has a supplier or also called the leveransir of materials needed in the concrete production process and other work projects. If the contractor lacks of the resources (personnel or machinery) necessary to meet customer demand, the use of subcontractors is an option and is considered relevant for inclusion in the characterization of the business model [15]. Besides all supplier, company S also make foreman or builder on project as key partner.

“partners are villages, contractors, and usually semi-contractors. Semi-contractors mean that private developers may not use CV, sometimes like builders, if they already know us, they will help us to get the project to us” (SS)

In the cost structure, some of the costs required by the company are for operational and production costs, maintenance of equipment, employee salaries, fees for work partners, and unexpected costs that may occur related to the implementation of the work. During the project, not everything can run smoothly, such as reaction of environment

around the project. Sometimes the project environment takes advantage of the project and charges illegal fees. Such things are included in unforeseen expenses.

In accordance with the research Rani et al., [16] that in batching plant investment, the costs to be incurred include production costs, operational costs for batching plant equipment including loaders, ready-mix transportation costs to the location (consisting of fuel and employee salaries), office operating costs, and equipment maintenance costs.

In the revenue stream element, the company earns revenue through the sale of concrete, uditch and fence panels. However, currently the sale of u-ditch and panel has not been carried out for a long time due to the lack of orders from customers. In addition, the company also earns revenue by working on work projects and getting additional support letters to partners, although this income is uncertain.

Based on those results, reconstructed existing business model can be drawn as figure below.

Key Partners	Key Activities	Value Proposition	Customer Relationship	Customer Segment
<ul style="list-style-type: none"> - Suppliers <ul style="list-style-type: none"> • Cement • Muntilan sand • Split stone • Additive • Fuel • Iron • Aluminium • Glass - Contractor - Subcontractor - Foreman and construction worker 	<ul style="list-style-type: none"> - Field survey and scheduling - Process of material storage, production, delivery and pouring concrete - Search for projects and prepare the administration of permits and project requirements - Clarification, presentation, daily administration, and coordination with job owners 	<ul style="list-style-type: none"> - Quality assurance - Concrete with maintained materials - Open in serving the needs of concrete-related construction - Prioritizing customer services 	<ul style="list-style-type: none"> - Approach by surveying customer needs - Providing support and trials according to customer needs - Establishing communication before and after casting 	<ul style="list-style-type: none"> - Contractors - Government (village, department, ministry) - State and private company - Individuals or retail - Concrete customers in Kudus, Demak, Pati, Jepara, Purwodadi, Kabupaten Pekalongan, Kota Pekalongan, Pemalang, Batang area
Key Resources			Channel	
	<ul style="list-style-type: none"> - Human resources plant (head of plant, technician, administrator, BPO, loader operator, driver) and contractors (executor, logistic, administrator, certified expert) - Material resources (sand, water, cement, split stone, additive, iron, aluminium, glass) - Tools resources (batching plant machine, loader, mixer truck) and supports (fuel, oli, spare tire) 		<ul style="list-style-type: none"> - Marketing - Social media availability (whatsapp, Instagram, tiktok), google, email, phone, and website - Optimize LPSE, e-katalog, contractor's partners, friends in university and association 	
Cost Structure		Revenue Stream		
<ul style="list-style-type: none"> - Operational and production - Maintenance of production equipment - Salary of employee and worker 	<ul style="list-style-type: none"> - Fee partner - Unexpected expenses 	<ul style="list-style-type: none"> - Sales (concrete, u-dith, fence panel) - Project work as a. contractor or sub-contractor - Support letter fee 		

Figure 1. Reconstructed Existing Business Model

4.2 *Business Model Innovation*

This research was using value uncaptured and strategic planning of company S. Uncaptured value will be discussed in four values, namely value surplus, value absence, value missed, and value destroyed. In surplus value, there are projects that are carried out by company representatives carried out incorrectly and cost the budget more than planning, like paint that has peeled off when a new job is finished, making a company have to do work that should be done in one go. In line with these findings, Kawesittisankhun & Pongpeng, [17] presented a study that the competence of construction business is influenced by the competence of project managers and engineers, so that contractors can allocate human resources appropriately to improve the efficiency of their project operations.

Value absence is seen from the value that is not yet there but is needed by the company. This value is found where the company needs work support tools that are not yet available, such as scales and amps, and human resource needs in batching plants and contractors. In addition, there has been no customer satisfaction survey conducted in the company. Knowing customer satisfaction is of considerable importance, whereby service providers in industrial construction including contractors and consultants should try to advance understanding of the phenomenon of client needs and satisfaction and develop criteria of association size that will help improve service quality and overall performance for better client needs and satisfaction as well as the profession in general [18]. The company does not yet have a standard SOP in running a business with a different location. Thus, value in the form of corporate systems and rules is needed so that all employees have the same mindset in carrying out their duties

In value missed, there are many values that can actually be done but are not effective in their implementation. Starting from the discipline and ability of employees who have not been able to meet all customer needs and company needs. Next is the selection of jobs with professional colleagues. If the contractor lacks the resources (personnel or machinery) necessary to meet customer demand, the use of subcontractors is an option and is considered relevant for inclusion in the characterization of the business model [15]. In addition, in relation to customers, the company still has difficulty in charging customers. This is included in the weak management in the company because the company does not yet have rules and systems that can help to remind the company regarding the maturity of customer payments. While on the job at the contractor, there can be errors in determining the price. This then makes the cost of implementation in the field greater than the cost of planning costs. However, according to Hoseini et al., [19], contractor projects experience greater cost overruns than calculated by the client. Lack of cost in a client's project can be caused by both technical reasons, such as a lack of historical data, errors in estimates, or lack of experience, and psychological reasons, such as pessimism bias or overestimation of costs. Cost overruns on contractor projects can be caused by technical, psychological, and political reasons. Optimism Bias and underestimation of costs in the hope of winning contracts are psychological and political reasons that cause cost overruns in contractor projects. The small cost overruns of a contractor's project can also be caused by inefficient use of resources. Companies can use historical data from previous projects.

The fourth Value is value destroyed, which is related to the destruction of value because it has a negative impact on the company and the environment. In the results of data analysis, value destroyed found in the process of material storage and production process when loading concrete mix. Cement dust during the transfer from the bulk to the silo and from the silo to the mixer truck can fly in the air, potentially becoming air pollution. The company has installed additional rubber material at the end of the silo to minimize dust, but it takes proper coordination from suppliers and batching plant operators so that the process of moving cement to the silo does not use high speeds so that the dust that comes out is not much, and coordination of operators with mixer trucks so that mixer trucks can be placed right under the loading silo hole. Therefore, it is necessary to emphasize the process of material storage and production. Weiszer, et al [20] stated that the evaluation of ready-mixed concrete transportation policies involves assessing and analyzing the effectiveness, efficiency, and impact of existing policies related to the transportation of ready-mixed concrete. These include improving the sustainability of concrete transportation, reducing transportation costs, minimizing environmental impact, improving safety, or improving efficiency

Besides uncaptured value, strategic plan was conducted based on company S's planning and capacity, related to business model innovation. One of them was to seek additional capital or funding support through banks or larger suppliers who can deliver materials with a looser tempo. According to Okereke, et al. [21] construction projects are capital intensive and require a continuous flow of financial resources for project targets and objectives to be met. The main sources of financing for construction projects in Nigeria are credit from suppliers, bank loans, bank overdrafts, personal savings, and retained earnings.

Another plan that can be done is to develop a website-based managerial application that can be done for company records and customer billing. Patel et al., [22] explained that the reasons for contractor bankruptcy include poor management and poor financial control. Therefore, an integrated system is needed that can help in managing the

recording of company activities and finances. The company can also have plans for the addition of work tools such as scales, mixer trucks and stone breakers. The need for scales in accordance with the research of Joshua et al., [23] that ready-mix by being processed based on the weight of the material will produce better concrete quality than measured by volume. In addition, related to the limitations of the mixer truck, according to the research of Sarkar et al., [24] that for ordering large quantities of concrete, truck mixers require time for concrete loading, delivery, and pouring. When the truck mixer was limited, the company and foundry location had to wait for transit time in each place. Without a proper delivery schedule, the mixer truck has to wait for the concrete to be installed on site or the casting site has to wait for the mixer truck to arrive. Related to the approach to customers, companies can provide promotional advertisements to customers, considering that so far what is often displayed on social media is product documentation. Basically the company has been doing promos to customers by providing free of charge concrete pump services for the construction of mosques. This became a special attraction because the company began to include the value of religiosity to achieve the interest of customers. According to Balasubramaniam[25], in doing promotions to customers can be done by participating with relevant trade shows and industry events. The company may also consider sponsoring a specific event. Planned promotional advertising deals with the value that can be clearly conveyed and received by customers.

Key Partners	Key Activities	Value Proposition	Customer Relationship	Customer Segment
<ul style="list-style-type: none"> - Suppliers <ul style="list-style-type: none"> • Cement • Muntilan sand • Split stone • Additive • Fuel • Iron • Alumunium • Glass - Contractor - Subcontractor - Foreman and construction worker - Bank 	<ul style="list-style-type: none"> - Field survey and scheduling - Process of material storage, production, delivery and pouring concrete*¹ - Search for projects and prepare the administration of permits and project requirements*¹ - Clarification, presentation, daily administration, and coordination with job owners - Employee coaching and training 	<ul style="list-style-type: none"> - Quality assurance - Concrete with maintained materials - Open in serving the needs of concrete-related construction - Prioritizing customer services 	<ul style="list-style-type: none"> - Approach by surveying customer needs - Providing support and trials according to customer needs - Establishing communication before and after casting - Customer satisfaction survey 	<ul style="list-style-type: none"> - Contractors - Government (village, department, ministry) - State and private company - Individuals or retail - Concrete customers in Kudus, Demak, Pati, Jepara, Purwodadi, Kabupaten Pekalongan, Kota Pekalongan, Pemalang, Batang area
Key Resources			Channel	
	<ul style="list-style-type: none"> - Human resources plant (head of plant, technician, administrator, BPO, loader operator, driver) and contractors (executor, logistic, administrator, certified expert)*¹ - Material resources (sand, water, cement, split stone, additive, iron, alumunium, glass) - Tools resources (batching plant machine, AMP, scales, stone crusher, loader, mixer truck) and supports (fuel, oli, spare tire) - Company system and regulations 		<ul style="list-style-type: none"> - Marketing - Social media availability (whatsapp, Instagram, tiktok), google, email, phone, and website - Optimize LPSE, e-katalog, contractor's partners, friends in university and association - Promo for concrete product 	
Cost Structure		Revenue Stream		
<ul style="list-style-type: none"> - Operational and production - Maintenance of production equipment*² - Salary of employee and worker 	<ul style="list-style-type: none"> - Fee partner - Unexpected expenses 	<ul style="list-style-type: none"> - Sales (concrete, u-dith, fence panel) - Project work as a. contractor or sub-contractor - Support letter fee 		

Notes: *Italic* and **Bold**= *Adding value to business model*; *¹= improved value function; *²= repressed value function

Figure 2. Business Model Innovation

5. CONCLUSION AND SUGGESTION

5.1 Conclusion

The current business model used by company S is reconstructed through the nine elements of the canvas business model. Business model innovation through uncaptured value and strategic plan in Company S such as innovate essential resources (adding company system and regulations, scales, AMP machine, truck mixers, stone crusher machine, and improving human resources), customer relationship (adding customer satisfaction survey), key activities (adding employee coaching and training, improving material storage and production improving project search activity), key partners (banks), channel (add promo for concrete product), and cost structure (repress value of maintenance of production equipment). Construction companies can have a competitive advantage when supported by related business units, such as company S, which needs AMP and stone crushers. Business model innovation in company S can be done by reducing or adding value and by increasing or emphasizing existing value functions, such as reducing equipment maintenance costs, which can be done by adding value coaching and training so that employees can operate equipment well and reduce equipment damage.

5.2 Recommendation

This study was conducted using the qualitative method of case studies so that the results cannot be generalized to different cases and contexts. Another study limitation is that the interview time is less than the maximum. There needs to be more information about the construction unit business by two informants due to restrictions on authority applied to the company in the previous period, causing researchers to get less in-depth information. This research has not found innovations related to better handling the construction environment in value destroyed. How to implement business model innovation as a whole, so the effectiveness of company S's innovation still needs to be investigated.

In the future, more research will discuss business model innovation using the uncaptured value perspective. Future research can be done by adding the focus group discussion (FGD) method to obtain more in-depth and validated data. Future researchers could research larger construction companies that have implemented innovations in their business models. Future research can further explore Green business model innovation in the area of construction in Indonesia.

6. AUTHORS' CONTRIBUTIONS

Endah Mutiara Sari: Conceptualization, Writing-original draft, editing; **Mahfudz:** Review, Supervision

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