Business Development Strategies Formulation based on Business Model Canvas, SWOT Analysis, And AHP

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ABSTRACT

Businesses need to continuously improve their comptitive advantage. For top management, formulating a long-term vision is crucial. However, strategic planning representing this longterm vision is often overlooked in SMEs due to their limited competencies and knowledge. Therefore, this study introduces a decision-making model for formulating long-term strategies that should be prioritized in SMEs. The decision-making model is developed using a combination of three methods: business model canvas (BMC), SWOT analysis, and analytic hierarchy process (AHP), and is applied to a bespoke steel house accessories manufacturing service company. The mapping and formulation of business development strategies are completed using BMC and SWOT, followed by determining the strategy priorities based on weights obtained using AHP. The results showed that eight business development strategies representing the company's business model advantages were formulated: warranty (strategy 1), available human resources (strategy 2), on-time delivery (strategy 3), online CRM (strategy 4), discounts (strategy 5), online selling (strategy 6), production cost efficiency (strategy 7), and raw material cost reduction (strategy 8). By using AHP, strategies 7, 8, and 4 are identified as the top three priorities for the company, indicating issues in supply chain management and the use of digital technology in marketing. This study is significant as the developed decisionmaking model is applied at a strategic level and can be directly utilized by decision-makers in formulating their company's strategic vision.

Keywords: Strategic Planning, BMC, SWOT, AHP

INTRODUCTION

The advancing technology today brings significant changes in business activities. The impact of information technology can be observed in how technology makes every business activity easier, faster, and more efficient [1]. The rapid development of technology has made almost all human jobs easier since most human tasks today are possibly assisted by technology [2]. In the digital era, technology has transformed how companies interact with customers, where marketing is no longer just about one-way messaging but about engaging with customers through various digital platforms [3]. The easily accessible technology has become a crucial catalyst for small and medium enterprises (SMEs) in expanding their business scale.

To enhance competitive advantage and scale up business operations, initial mapping is essential. A commonly utilized tool by leaders in organizations is the business model canvas (BMC). BMC is often chosen as it aids in addressing various issues related to business development, particularly for SMEs adapting to new change challenges. Several studies have applied BMC to the issue of business scale development at the SME level as conducted by [4], [5], and [6]. Wijayanti & Hidayat (2020) analyzed marketing strategies and integrated them into the BMC for a small and medium snack food business. Furthermore, Izwan Sepriyadi et al., (2023) employed BMC to detail strategies for reaching customer targets and marketing products in a micro and small enterprise. The implementation of BMC for evaluating marketing and sales strategies was also carried out by (Mandamdari & Widjojoko (2022) in the food industry.

Indeed, the development of BMC is often integrated with other methods such as Multi-Criteria Decision Making (MCDM). The integration of MCDM methods with BMC is highly appropriate as MCDM involves considering multiple criteria or factors. On the other hand, BMC also comprises nine attributes that can be analyzed for various purposes using MCDM, such as identifying components in each attribute, determining attribute priorities, and even evaluating the relationships between attributes. The integration of BMC and AHP (Analytic Hierarchy Process) was proposed by [7] to enhance competitive advantage in the supply chain of a small coffee enterprise. In their study, BMC was used to design the business model for the coffee supply chain, while AHP measured and prioritized elements of the supply chain such as business partner selection, distribution channels, and technology investment. More complex integrations were conducted by [8] and [9], who combined BMC with SWOT and other MCDM methods like TOPSIS and ANP (Analytic Network Process). Maita et al. (2022) combined it with SWOT and TOPSIS to choose the best solution by first identifying various strategic opportunities and risks that needed to be mitigated in a company. Azzaria et al. (2023) investigated in more detail the relationships among factors relevant to the integration of BMC, SWOT, and ANP.

The purpose of this study is twofold: firstly, to map and formulate strategies for SME development by using the Business Model Canvas (BMC) and SWOT analysis, and secondly, to prioritize these strategies using AHP approach. The integration of BMC and SWOT with AHP yields a set of relevant strategic priorities for corporate development. Moreover, this approach enables decision-makers to make more effective decisions that encompass comprehensive business elements, including consideration of external factors. The utilization of technology is also a key point that is mapped into the business model, potentially impacting organizational performance. The decision-making model for strategic development in this

study is applied to a bespoke steel house accessories manufacturing service company. This study is significant as the developed decision-making model is applied at a strategic level and can be directly used by decision-makers (DMs) in formulating the strategic vision of their companies.

THEORETICAL BASIS

a. Business Model Canvas (BMC)

The Business Model Canvas (BMC) is a visual framework that helps companies design, describe, and understand their business models. Consisting of nine key elements, BMC provides an overall view of how a business operates. First, in market segments, businesses identify and understand their key customers. Second, the value proposition explains what the product or service is offering and how it meets customer needs. Distribution channels detail how a product or service is delivered to customers, and customer relationships highlight the types of interactions with customers. Revenue sources describe how a business makes money from customers. Key resources are the key elements required to carry out business operations [10]. Key activities detail the key tasks and activities that support the value proposition. Key partners refer to engagements with external parties or partners that strengthen the business. Cost structure highlights the costs incurred in running business operations. Overall, BMC provides a holistic and easy to understand picture of all the key elements that make up a company's business model.

b. SWOT Analysis

SWOT analysis (Strengths, Weaknesses, Opportunities, Threats) is a method used to evaluate the strengths, weaknesses, opportunities and threats faced by an organization or project. In the strengths aspect, the company identifies internal factors that provide competitive advantage. This could be unique resources, employee expertise, or operational excellence. On the other hand, weaknesses (Weaknesses) detail internal aspects that may hinder performance, such as a lack of resources or incompetence in technology. In terms of opportunities, organizations consider external factors that can be exploited for growth or success, such as changes in market trends or new technological developments. Meanwhile, threats include external factors that can hinder or harm business, such as intensive competition or changes in regulations. SWOT helps companies identify strategies based on a deep understanding of their internal and external environments, and provides a basis for strategic decision making [11].

c. Analysis Hierarcy Process (AHP)

Hierarchy Process (AHP) analysis is a decision-making method developed by Thomas L. Saaty that helps overcome complexity in evaluating and selecting alternatives. AHP focuses on hierarchical modeling, where complex decisions are divided into smaller, manageable hierarchical levels. The process begins with identifying the main goal, followed by dividing the goal into more specific sub-goals. After that, the criteria and sub-criteria are placed in a hierarchical structure. Next, a pairwise comparison process is carried out at each level to assess the extent to which one element is more important than another. This comparison data is used to produce a consistency matrix. Next, using mathematical methods, AHP produces relative weights for each element in the hierarchy [12]. Finally, these weights are used to calculate a

total score and aid decision making. AHP can be applied in a variety of contexts, such as investment selection, strategic planning, or vendor selection, to provide a systematic and consistent structure to the decision-making process.

d. Online Store

An online store is an electronic commerce platform that allows individuals or companies to sell and buy products or services over the internet [13]. In an online store, customers can explore various product categories, carry out transactions, and make payments online. Online stores provide significant benefits to both sellers and buyers. For sellers, online stores allow them to reach a wider market without being limited by geographic boundaries. They can manage stock, take orders and communicate with customers efficiently through digital platforms. On the buyer's side, online stores provide the convenience of shopping anytime and anywhere, as well as easy access to product information, reviews and price comparisons. Additionally, online stores often offer a variety of secure and convenient payment options. Transaction security and data privacy are the main focus in developing online stores, thereby giving customers confidence in making online transactions. As technology advances, online stores continue to evolve and offer more interactive shopping experiences, using technologies such as artificial intelligence and augmented reality to increase customer interaction [14]. Overall, online stores have become an integral part of the modern commerce ecosystem, enabling easy and efficient access to a wide range of products and services.

METHOD

There are three main stages in this research: 1) Business model mapping using the Business Model Canvas approach, 2) Formulation of business development strategies utilizing SWOT analysis, and 3) Prioritization of development strategies using AHP. The DMs in the company are involved in all stages, including the company's owners and expert staff.

In the first stage, business model mapping using BMC will detail all aspects influencing the overall business activities of the company, integrating nine key elements as introduced by [15]: customer value proposition, customer segments, customer relationships, channels, key resources, key activities, partners, costs, and revenues. All points mapped within this canvas are subsequently categorized into the SWOT matrix, particularly for the aspects of strengths and weaknesses. Meanwhile, external aspects included in the opportunities and threats quadrants are formulated from literature, benchmarking, and discussions with decision-makers. Utilizing framework developed by [16], the key factors identified in the SWOT matrix can be used to formulate four business development strategic plans: SO strategies, ST strategies, WO strategies, and WT strategies. The final stage is to prioritize strategies using the Analytic Hierarchy Process (AHP) approach. There are three main stages in prioritizing strategies with AHP [17]: building a pairwise comparison matrix among strategies, calculating weights, and testing the weights. In the first stage of AHP, decision-makers are involved to assess and compare the importance levels among strategies using Saaty's 1 - 9 scale. Subsequently, the weights of each strategy can be calculated using equation (1) and (2). The strategy with the highest weight is given the top priority. Lastly, the obtained weights must be tested with a consistency test (equation 3 and 4) to ensure that the results obtained are conclusive.

Weight of
$$i = w_i = \frac{\sum_{j=1}^{n} w_{ij}}{n}$$
 (1)

$$w_{ij} = \frac{a_{ij}}{\sum_{i=1}^{n} a_{ij}}$$
(2)

$$CR = \frac{CI}{RI} = \frac{Consistency Index}{Random Consistency of A}$$
(3)

$$CI = \frac{\lambda_{max} \cdot n}{Random Consistency of A}$$
(4)

$$CI = \frac{\kappa_{max} - n}{n-1}$$

RESULTS AND DISCUSSION

a. Mapping the company's business model

In the initial stage, the company's business model mapping is conducted using BMC. By employing BMC, the company can clearly identify the key elements of their business model and understand how each element interacts to create value [18]. The Business Model Canvas comprises nine aspects: customer segment, value propositions, channels, customer relationship, revenue streams, key resources, key activities, key partnerships, and cost structure. The results of mapping the aspects of the company's business model canvas are presented in the table/matrix below.

In the presented BMC matrix, the company possesses unique aspects compared to competitors in the same industry, particularly in the customer segment aspect. The company has successfully expanded its retail consumer segmentation. This expansion indirectly impacts on the enhancement of the company's services and its competitive advantage.

	Table 1. 1	he BMC mapping o	of the company			
Key Partners	Key Activities	Value	Customer	Customer		
(KP)	(KA)	Proposition (VP)	Relationship (CR)	Segments (CS)		
Raw material	Receipt of order	Guarantee (VP ₁),	Product	Retail costumer		
supplier	$(KA_1),$	High quality	replacement	$(CS_{1}),$		
(KP ₁),	Purchasing raw	product (VP ₂),	(CR ₁), Direct	Commercial		
Welding	materials (KA ₂),	Reliable and	selling (CR ₂),	(CS ₂), Family		
partner (KP ₂)	Production (KA ₃),	durable product	Hospitality (CR ₃)	(CS ₃), Restaurants		
	Delivery (KA ₄),	(VP ₃),		(CS_4)		
	Customer	Customized				
	relations (KA5)	relations (KA ₅) product (VP ₄),				
	Key Resource	Competitive	Channel (C)			
	(KR)	price (VP ₅)	Channel (C)			
	Workshop (KR ₁),		Social media			
	Billboard (KR ₂),		(C_1) , Hotline (C_2)			
	Raw materials					
	(KR ₃), Electric					
	welding machine					
	(KR ₄), Cutting					
	welding machine					
	(KR5), Safety					
	equipment (KR ₆),					
	Carrier wagon					
	(KR7)					

Table 1 The BMC manning of the company

Cost Structure (CS)	Revenue Streams (RS)
Operating cost (CS ₁), Material cost (CS ₂), Maintenance cost (CS ₃)	Sales of furniture products (RS ₁), Fence, canopy, door, and home accessories welding services (RS ₂), Remanufacturing waste (RS ₃), Advertise products on social media (RS ₄)

Regarding the revenue streams aspect, the company has added value by generating income from the reuse of production waste. This initiative not only supports environmental sustainability but also contributes positively to the company's cash flow. Utilizing production waste as a source of revenue demonstrates a smart business vision that is responsive to circular economic opportunities [19]. In terms of customer relationship, the company emphasizes the aspects of friendliness and personalized service. This approach undoubtedly adds to the company's appeal in creating ongoing relationships between the company and its customers. Prioritizing communication ultimately enhances customer loyalty. Thus, the company not only has advantages in customer segmentation and revenue strategies but also a solid foundation in customer service. These various mapped advantages aim to maintain and enhance the sustainability of the company's business.

b. Identify internal and external factors and formulate a SWOT strategy

The next stage involves identifying internal and external factors based on the mapping of the BMC into the SWOT matrix. From the BMC mapping, the factor of service emerges as an internal strength of the company. On the one hand, the company excels in maintaining relations with consumers through warranty programs, direct selling, hospitality value, and good timing in order processing and delivery. On the other hand, the current service level of the company has not fully leveraged technology, especially social media, for business purposes. This can be formulated into a strategy for improvement identified from internal factors. Furthermore, market conditions and supply chain issues are external issues generated from the Customer Segments (CS) and Key Partnerships (KP) aspects of the BMC. The company has successfully detailed consumer categories and targeted markets not yet tapped by competitors, thus adding to its competitive advantage. Meanwhile, supply chain issues present a challenge. The condition of suppliers located outside the region requires the company to pay close attention to shipping costs and production costs that may affect product pricing. However, as long as quality is maintained, the company will retain loyal customers.

	Strength (S)	Weakness (W)
	Guarantee	Optimization of technology
	The quality of raw materials	for promotion is still lacking
	is the main standard	Product prices are known to
	On time production and	be expensive
	delivery	The company's location is
	Consumer-oriented service	not strategic
Opportunity (O)	S-O Strategies	W-O Strategies

Table 2. The SWOT strategies of the company

Extensive partner relations	S1-O3 . Provision of	W1-O3. Penetration of
Availability of competent	warranties for special	online-based marketing
human resources	occasions	strategies during special
Cultural tendency of the	S3/4-O2. Enhancement of	occasions
society to order products for	quality supported by human	
special occasions	resources	
Threat (T)	S-T Strategies	W-T Strategies
Numerous competitors	S1-T1 . Discount programs	W1-T1. Enhancement of
Limited suppliers	through partnerships	online marketing strategies
		W2-T2. Supplier evaluation

Once the internal and external factors have been identified, the formulation of SWOT strategies can be developed, consisting of S-O (Strengths-Opportunities), W-O (Weaknesses-Opportunities), S-T (Strengths-Threats), and W-T (Weaknesses-Threats) strategies. Table 2 comprehensively displays the internal and external factors and the four groups of formulated strategies.

The subsequent stage involves consolidating these four groups of strategies into strategic codes that will be prioritized using AHP. Eight business improvement strategy groups have been defined from the SWOT strategies: warranty (strategy 1 from S12-O3), available human resources (strategy 2 from S3/4-O2), timely delivery (strategy 3 from S3/4-O2), online CRM (strategy 4 from W1-O3), discounts (strategy 5 from S1-T1), online selling (strategy 6 from W1-T1), production cost efficiency (strategy 7 from W2-T2), and raw material cost reduction (strategy 8 from W2-T2). Online CRM and online selling are recommended strategies that adopt technological approaches to address marketing issues. Using these strategies, the company can sell its products, maintain customer relations, and simultaneously receive feedback for improving the competitive value of its products. Next, production costs and raw material costs fall under supply chain issues that need to be considered by the company to ensure the quality of the products while considering cost efficiency. An interesting criterion also formulated is the offering of discounts, which falls under the recommended price strategy. For this business category, discounts are not necessarily given in the form of price reduction percentages but can also be implemented through bundling package collaborations with home developers.

c. Prioritizing strategies by employing AHP

After obtaining the eight strategic recommendations, the final stage is to prioritize these strategies using the AHP method. Prioritizing strategies is crucial because, in real-life situations, the DMs often face issues of limited resources and budget for improvement actions.

Table 5. The AFP matrix of the company									
Str.	Str. 1	Str. 2	Str. 3	Str. 4	Str. 5	Str. 6	Str. 7	Str. 8	W
Str. 1	1	0.33	0.50	0.25	3.00	2.00	0.17	0.20	0.062
Str. 2		1	2.00	0.50	5.00	4.00	0.25	0.33	0.138
Str. 3			1	0.25	4.00	3.00	0.20	0.25	0.089
Str. 4				1	6.00	5.00	0.33	0.50	0.206

Tabel 3. The AHP matrix of the company

Str. 6 1 0.14 0.17 0.043 Str. 7 1 2.00 0.432	Str. 5	1	0.50	0.11	0.14	0.030
	Str. 6		1	0.14	0.17	0.043
	Str. 7			1	2.00	0.432
Str. 8 1 0.301	Str. 8				1	0.301

The first step in AHP involves assigning comparative preferences among strategies, represented through Saaty's scale, as shown in the following table. Subsequently, using the geometric mean technique for calculation, the priority weights of the strategies are obtained.

As indicated in table 3, Strategy 7 (production cost efficiency) is the most prioritized improvement strategy by decision-makers, followed by Strategy 8 (raw material cost reduction), and Strategy 4 (online CRM), with respective weights of 0.432, 0.301, and 0.138. This suggests that supply chain issues are the primary challenge in revising the company's business strategies, potentially providing a competitive advantage that is difficult for competitors to replicate. When considered from a technology application perspective, production cost efficiency can be achieved, in part, through technological engineering, including Strategy 4, which also emphasizes the use of technology in a different scope. In this case, the decision-makers in the company understand that appropriate technological development can provide a competitive edge applied to production efficiency and online CRM. Additionally, Strategy 8 can be achieved with a more in-depth supplier evaluation. Here, there is an opportunity for future studies to evaluate suppliers that will impact raw material cost reduction without compromising quality.

On the other hand, Strategy 5 (discounts) and Strategy 6 (online selling) received the lowest weights of 0.030 and 0.043, respectively. It appears that the decision-makers consider these strategies less suitable for this type of business. Strategies 5 and 6 are more appropriate for retail businesses. Although these strategies could still be tried in this company, the decision-makers believe their impact on expanding the company's business scale is not significant. This highlights the advantage of the decision-making model developed in this study. With a more comprehensive mapping of business factors, decision-makers gain insights that may not have been previously considered. Furthermore, AHP assists in directing decision-makers to choose the right solutions with a quantitative approach.

CONCLUSION

This study has developed a decision-making model for determining business development strategic plans by integrating three methods: Business Model Canvas (BMC), SWOT analysis, and Analytic Hierarchy Process (AHP). The developed model is applied to a bespoke steel house accessories manufacturing service company. With BMC, key factors are successfully mapped into nine BMC elements, where the company has unique strengths in customer segments and revenue streams. Subsequently, these key factors are mapped into the SWOT quadrants, resulting in eight business development strategies: timely delivery (strategy 3), online CRM (strategy 4), discounts (strategy 5), online selling (strategy 6), production cost efficiency (strategy 7), and raw material cost reduction (strategy 8). Based on the AHP calculations, strategies 7, 8, and 4 are identified as the top three priorities for the company. The main issues of these strategies are supply chain challenges and the use of digital technology in marketing.

A limitation of this study is that the developed model is very specific and tailored for one type of industry. Although the formulated strategies may be relevant to other types of industries, future developments of the decision-making model could expand to industries with more unique business models, also emphasizing aspects of technology and sustainability.

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