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Strategic Development and SWOT Analysis of Canting Batik Industry

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ABSTRACT

The development of canting batik industry has lagged, and the number has decreased compared to the batik industry. This industry is believed to have a potential passive market and can provide job opportunities for local workers, reducing urbanization. Based on this background, this research is needed to analyze the potential and innovation of canting batik industry in Central Java, Indonesia. We choose Central Java, based on the fact that the batik industries grew most in Pekalongan, Central Java. The article uses qualitative research. We use Focus Group Discussion and direct observation to map the competitiveness of SMEs. To see the most significant opportunities and challenges, we also use a SWOT analysis. The results of this study indicate that the growth of the canting stamped batik industry is relatively slow. Some of its causes are relatively expensive raw materials, low product demand, and local government support. SME players can use some strategies to make canting as a souvenir product, looking for alternative ways to non-brass raw materials, and cooperating with complementary industries, including the batik industry.

Keywords: strategic development, SWOT analysis, canting stamped batik, industry, SMEs

INTRODUCTION

The types of batik motifs in Indonesia are very varied, and thousands of them have been created by batik craftsmen. Indonesia has diverse local cultures and distinctive and symbolic characteristics in each culture (Kerdiati and Darmastuti, 2019; Syamwil and Kartini, 2021). Batik motifs often look unique in their shape and design because they have their history (Kasim et al., 2017; Ciptandi, 2020)). Batik is made using a canting technique, especially for hand-drawn batik, stamped batik, tie-dyeing technique, printing, and the coloring technique.

One of the techniques which is often used is canting of stamped batik. Canting is a tool to make batik with its main base is a thin sheet of a copper plate. Canting of stamped batik consists of three parts, the front which is an arrangement of copper plates that form a batik pattern. Its base, to attach the face, is called andangan, the stem of the stamp for holding during the stamping process. Copper and iron plate were used to create the stamp. Artisans tried to innovate with the raw material of wood during its evolution. The canting production method is simplified when the wood is used, but it cannot be used for complex motives. Furthermore, the product is not long-lasting, as opposed to copper's material, which may be utilized for many years.

Along with the time, the craftsmen of canting batik were reduced and rare because the orders were deceased. Currently, most of its customers switch to printing, so that their income automatically declines. This problem was experienced by the industry of stamped canting of batik in Landung Sari village, Noyontaansari subdistrict, Laweyan, Surakarta, one of the centers for the largest area canting craftsmen of stamped batik in Central Java. Those craftsmen bought raw materials for their canting tool of stamped batik from collectors or agents so that large capital was needed, but the selling price was cheap. Besides, the skills and innovations of canting artisans of stamped batik were not sufficient to survive in the market (Retnaningsih et al., 2017). Therefore, an in-depth study is needed to analyze the potential and innovation of the canting industry of stamped batik to survive or even reach the lost market again due to globalization. Then, a SWOT analysis is needed to identify strengths and weaknesses as well as opportunities and threats.

There are many problems related to the canting industry of stamped batik, one of which lies in the lack of innovation in this industry so that it cannot follow the market (Retnaningsih et al., 2017). Another factor is the high price of raw materials, minimal skills, and a marketing network that makes it difficult for this industry to survive. Artisans do not have adequate skill following the development era in the development design solution. Meanwhile, some raw materials were obtained from middlemen/ collectors and agents, they were not obtained from main suppliers, so the price is high, while the selling price of canting of stamped batik is low. Some challenges which faced by the canting industry of stamped batik have initiated this research. This study is part of extensive research in creating new innovations that will speed up and simplify the process of making canting of stamped batik and innovations in terms of its distribution and its marketing networks. This research analyzed potential and innovation of the industry of batik canting, especially the canting of stamped batik.

LITERATURE REVIEW

Knowlegde Based Economy (KBE)

The current economic or social order has experienced very radical changes. This is driven by the development of technology and communication as well as globalization. Specifically related to economic governance, the old economy system/ traditional economy system tends to be a resource based system, namely an economy that relies on the wealth and diversity of natural resources, and it will be replaced with a new economy, namely the KBE or a science-based economy which is also often referred to as the digital economy (see Lestari et al., 2017); Al-Maadeed and Weerakkody,2017). The KBE implies an acknowledgment that humans as

resources and technology are as main factors in economic growth. Human resource is the most dominant resource.

The role of KBE in economic growth is reflected in the OECD economic trend, which shows a link between high-technology investment, high technology industry, highly skilled labor, and productivity (Hogg et al., 2007; Al-Maadeed and Weerakkody, 2017)). KBE enables organizations and communities to acquire, create, disseminate and utilize knowledge more effectively to promote economic and social development. The role of science in economic development is, among others, through (1) Knowledge Production, namely developing and providing new knowledge related to production system, (2) knowledge transmission, namely educating and developing human resources and (3) knowledge transfer, transferring knowledge and solve problems (Hogg et al., 2007; Al-Maadeed S and Weerakkody 2017).

Along with the development of KBE, modeling in economic theory also experiences adjustments; for example, regarding the function of production, it is recognized that investment in science and technology is a factor that directly influences production through increased production capacity, product development, and production processes. In the previous theory, science and technology were considered as external factors in production. This happens because investment in science does not apply the law of diminishing marginal return. Science and technology are the keys to long-term economic growth. It is said that science can increase returns on investment (ROI) through more efficient production methods (Thomas et al, 2019). Aggregately, it increases the economic growth of a country. Therefore, knowledge mastery both individually and institutionally becomes very important and strategic in solving various economic problems, unemployment, poverty, availability of goods and services in the economy, limited production capacity, and so on.

Production and Industrial Technology

The technology of making batik canting especially stamped batik has not developed for a long time. This canting is made using a copper plate as raw material done manually by craftsmen with special skills and it needs one week to work. The documentation of the variety of stamped batik canting is rarely done so that the variety of stamped batik canting production is very low. Stamped batik are made using a stamp or some kinds of stamped batik motifs which made of copper, as shown in Figure 1. The stamp is used to replace the function of batik canting so that it can shorten the time of its making process. Some batik motifs in such stamped batik are considered to have less artistic value because all the motifs are exactly the same. The price of stamped batik is quite low because it can be made en masse.

The making process of canting of stamped batik, which was done by Suharto et al. (2016) using a machine is: (1) a much shorter time (from 1 week to 8 hours), (2) the variety of batik design models are documented automatically with the use of engineering software that automatically generates variety files stored on the computer, (3) variations of batik variety can be developed in almost unlimited quantities, quickly, and can follow market taste. (4) The materials of canting of stamped batik are made from substitute materials (aluminum, plate, steel, wood) which are cheaper than copper.



Source: https://bp-guide,id

Figure 1. Making Batik Patterns Using Canting of Stamped Batik

Some basic knowledge that must be understood to run a CNC machine are mastering and understanding computer operation, software design and knowledge of tool path (CAM) software, operation and maintenance of CNC Machines, and knowledge of materials and CNC Tool Bits Workflow Suharto, et al., (2016). For the design of two-dimensional and three-dimensional models using a CNC machine and Aspire Software, using this software through a CNC machine, you can easily cut simply for decorative engraving.

RESEARCH METHODS

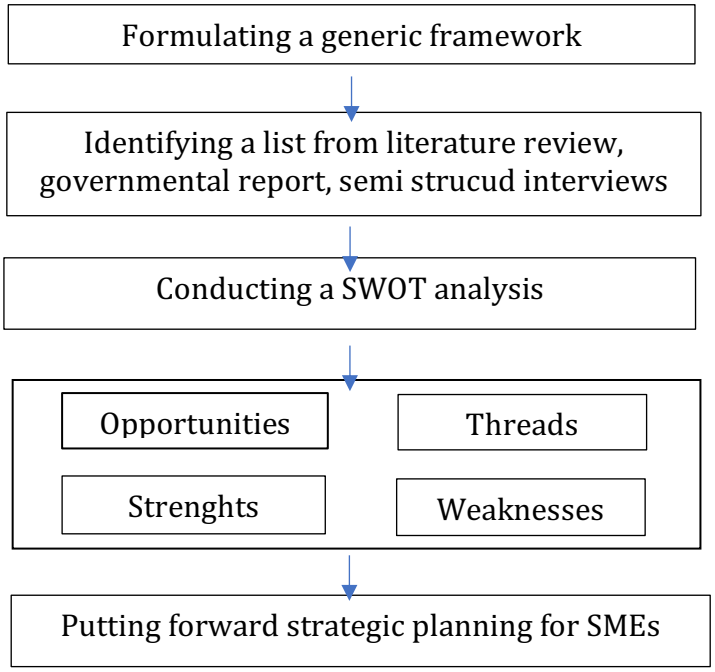
This research is a policy research which used a qualitative approach. This research was also descriptive analytical so that the field of study was not only limited to a description of the object of study but also conducted in-depth analysis (Sururi, 2017). There are at least 3 stages in this research, including:

1. The first stage is problem identification by conducting interviews with business actors or craftsmen, buyers, commercial entrepreneurs, and bureaucrats. After that, a SWOT analysis was carried out. Primary data collection was done using direct observation in the field and FGD (Focus Group Discussion). After the direct observation data in the field was collected, FGD would be conducted to get input on problems and strategies. The main points of chosen strategy were based on product innovation, marketing innovation, and distribution innovation.
    a. Direct observations in the field were carried out to obtain data on the life practices of the Canting Batik Cap Craftsmen or regarding the history of the Canting Batik Cap Crafts community at the research location.
    b. The focus group discussion (FGD) activity was carried out by inviting parties from relevant government agencies, local government, as well as representatives from SMEs entrepreneurs of Canting of stamped Batik in the Landungsari area. This FGD was intended to examine the role which can be done by local government, as well as the expectation and constraints or problems in the development of Canting of stamped Batik in Landung Sari Pekalongan.
2. The second stage was about conducting a benchmark study and designing a prototype from the results, which had been carried out in the first stage.
3. The third stage was about testing the results. After testing, it was evaluated to get input for improving the prototype. In this third year, which was also the end of the activity, a policy

text which was formulated could be used by the Central Java regional government or for business actors.

SWOT Analysis

SWOT analysis (Strengths, Weaknesses, Opportunities, Threats) is usually used to evaluate opportunities and challenges in the business environment or the internal environment of a company (Phadermrod et al., 2019). SWOT analysis is usually used to evaluate opportunities and challenges in the business environment or the internal environment of a company (Kuncoro, 2004). SWOT analysis was used in this study to discover the factors that influence the promotion of SMEs. Weaknesses and threats could be overcome by following the maximization of strengths and exploitation of opportunities concepts (Zhang (2018). On the basis of the work in Jhiang (2017), a framework for SWOT analysis (Figure 1) was provided



Sources: Jianget,al (2017); Zhang et.al (2018)
Figure 2. The basic flow of research

SWOT can also be used to see the economic condition of an area or a company's external environment. SWOT can also be used to see the performance of the batik canting industry. To make it easier in conducting a SWOT analysis, it is necessary to formulate the SWOT matrix in various strategies needed by each element. The SWOT matrix can be seen in Table 1.

Table 1. SWOT Matrix Analysis

	STRENGTH (S)	**WEAKNESS (W)**
OPPORTUNITIES (O) List of all identifiable opportunities	**Strategy SO** Use all the strengths which owned to take advantage of the opportunities that exist	**Strategy WO** Use all the power to take advantage of the strategy of WO opportunity
THREATS (T) List of all identifiable threats	**Strategy ST** List of all threats which can be identified by the ST strategy	**Strategy WT** Suppress all weaknesses and prevent all threats

Source: Kuncoro (2004)

The strategic alternatives which will be taken must be directed at efforts to use the strengths and weaknesses of the touch, take some advantage of economic opportunities, and anticipate threats. Four groups of strategies will be obtained from the SWOT matrix, namely SO strategy, WO strategy, ST strategy, and WT strategy. Through the SWOT matrix strategy, positioning is carried out to measure the performance of the canting industry of stamped batik. After considering the internal and external aspects of the performance of the batik canting industry, the weighting is carried out from the most influential to the least influential. The research location was in Canting Batik Landung Sari Village, Pekalongan. Meanwhile, for the benchmark study, some creative industries that have developed in South Tangerang were chosen.

RESULTS AND DISCUSSION

The SWOT method is widely used to carry out strategic planning, which is used to monitor and evaluate the company's external and internal environment for a particular business goal. To make it easy in conducting a SWOT analysis, a SWOT analysis is needed so that various strategies can be formulated for each element. The SWOT analysis of the canting industry of canting Batik can be seen in Table 2. From the SWOT analysis, four groups of strategies are obtained, namely SO strategy, WO strategy, ST strategy, and WT strategy, then positioning is done to measure the performance of SMEs (Small and Medium Enterprises).

Table 2. The Table of SWOT and Strategy

SWOT	INDICATOR
STRENGTH (S)	1. The resulting products are of good quality 2. Good quality of raw materials used. 3. Little wasted of raw materials 4. Human resource has high skills 5. High artistic value and superior motif design 6. Customer/order oriented 7. Conducting market research 8. Innovate products based on the use-value 9. The selling price of the product is relatively the same between each other 10. Online and offline marketing system. 11. Wide marketing scope 12. Activities are carried out in one place. 13. There is an association that accommodates the craftsmen
WEAKNESS (W)	1. Marketing does not spread widely 2. High raw material prices 3. Advantages of relatively little turnover Low income 4. Inadequate human resources 5. Young people lack interest in the profession of artisans. 6. Human resource is from the non-formal sector 7. The variety of product models is still relatively small 8. Product design does not have the patent right. 9. Limited working capital 10. The technology used is still simple 11. The production process of old canting of stamped Batik
OPPORTUNITIES (O)	1. The consumptive lifestyle of society today. 2. The market share of products have reached abroad 3. The economic rate of SMEs of canting of stamped batik increases. 4. There is competition for the same type of product 5. Product innovation in decorative form 6. Advances in digital marketing technology 7. Stable political conditions 8. There is support from the local government
THREATS (T)	1. Selling price competition 2. Unstable raw material prices 3. Raw materials are easy to obtain, but they have obtained them from outside the region. 4. High production of shipping cost 5. There is competition for similar products from outside the city 6. Technology is still inadequate 7. Unstable economic conditions 8. There is no human resource regeneration yet 9. Making cooperation with government agencies is difficult 10. There is no policy from the local government on this canting of stamped batik; it has a bargaining position, a position of prestige

Source: Data Processed, 2021

The SMEs which is like canting of stamped batik, Landung Sari in Pekalongan, Central Java innovates its model for developing its product to be able to survive preserving its products that decrease in the market and transform the products of canting of stamped batik into commercial one with high bargaining value, artistic value and superior in community. The results of SWOT analysis based on some data sources from the canting industry of stamped batik which had been collected and carried out through FGD can implement four types of strategies for the development of this SMEs of the canting of stamped batik, namely production strategies, marketing strategies and distribution strategies.

Table 2. The Table of SWOT and Strategy

	STRATEGY
SO TRATEGY	1. The results of quality products need to be improved with the use of quality raw materials that can meet the consumptive lifestyle of today's society and meet the market share of foreign products. (S1, S2-O1, O2) 2. Improving HR Skills so that they can produce a larger volume of quality products by optimizing raw materials and existing production facilities, so that they can take advantage of opportunities and the increase of economy. (S3, S4-O3) 3. Always updating the design of motifs with high artistic value and are superior and oriented to customers' orders so that next following fashion developments are the opportunity to compete with other similar products. (S5, S6-O4) 4. Market research needs to be carried out by innovating products based on their use value and selling prices to have the opportunity to find out market tastes, current market trends, and market opportunities to innovate products in other forms and their selling prices to be ready to compete in the global market. (S7, S8, S9-O5) 5. Improving the online and offline marketing system to reach a more comprehensive marketing opportunity by relying on digital marketing technology quickly. (S10, S11-O6) 6. Some activities which carried out in a place need to be balanced with the services and facilities and maximize the opportunity to ask for support from local government with stable political conditions. (S12-O7) 7. Through association, there is an opportunity to coordinate local government to develop the performance of canting of stamped batik as an industry cluster. (S13-O8)
WO STRATEGY	1. Conducting regular and consistent active marketing promotions by utilizing digital technology. (W1-O1, O2, O3, O6) 2. Improving the search for a better primary producer. (W2-O3) 3. Conducting routine HR training to increase skills in both production process and management of SMEs of canting of stamped batik. (W3-O4) 4. Increasing innovation in technology and designing a variety of product variations in the form of canting of stamped batik. (W7, W8, W10-O5)

	STRATEGY
	5. Reviewing the right time, amount, and target for additional capital. (W9-O4) 6. Proposing the local government of Pekalongan to make curriculum lessons or courses on entrepreneurship of the MSMEs of Beautiful products of stamped Batik in every high school/vocational school and university (W6-O8)
ST STRATEGY	1. The use of advances in digital technology to reduce production and promotion costs. (S1, S2, S3-T1). 2. Conducting market research to identify what models, designs are currently trending. (S7-T2) 3. Providing the widest possible distribution by building good cooperation with partners both inside and outside the Pekalongan area in distribution channels (S9-T3, T4) 4. Providing HR training for the development of the Pekalongan area. (S4-T5) 5. Paying attention to the growth of technology to assess the use of appropriate technology (S8-T6) 6. Carrying out continuous promotion in various villages in Pekalongan. (S10, S11-T7) 7. Making efforts to include training of younger generation so that they have skills as a substitute for the older generation. (S13-T8) 8. Approaching with the local government to establish cooperation. (S12-T9) 9. Carrying out the policy formulation by association to propose a policy from local government for this canting of stamped batik to have a bargaining position, a position of prestige (S13-T10)
WT STRATEGY	1. Developing product innovation by following the times (W7-T1) 2. Performing raw material inventory management. (W2, W3-T2, T3, T4) 3. Optimizing human resources to produce superior product quality. (W4-T5) 4. Patented Product Designs to avoid design plagiarism by competitors. (W8-T5) 5. Making new breakthroughs through technology on how to produce products of canting stamped batik to speed up the production results according to orders on time. (W7, W11-T6, T7) 6. Conducting education and training for the canting of stamped batik in the MSME environment in Pekalongan, which involves young people. (W5, W6 -T8) 7. Increasing working capital with the cooperation of local government (W9-O7)

Source: Data Processed, 2021

SWOT Analysis of Production Innovation Strategy

In the product development period of SMEs of canting of stamped batik, the right strategy is needed to produce better performance for the long term, so that the right strategy is strengths opportunities (SO) to maximize its strengths and pay attention to all market opportunities, namely the SMEs of canting of stamped batik, it needs to improve the results of quality products with the use of quality raw materials which have the opportunity to meet the consumptive lifestyle of today's society and meet the market share of foreign products. (S1, S2-O1, O2). UKM Canting stamped batik must continue to update motif designs that have high artistic value and are superior and oriented to customer orders. They have the opportunity to follow fashion developments and have the opportunity to compete with other similar products. (S5,S6-O4). Canting stamped batik SMEs need to do market research, it needs to be done by innovating products on use values and selling prices, having the opportunity to find out market tastes, current market trends and market opportunities in innovating products in other forms and selling prices to be ready to compete in the global market. (S7, S8, S9-O5). The production strategy to take advantage of the strength of the human resources of Canting stamped batik SMEs needs to improve HR skills so that they can produce a larger volume of quality products by optimizing raw materials and existing production facilities, so as to have opportunities along with the increasing economy. (S3, S4-O3). As well as a production strategy to take advantage of strengths and opportunities with local governments, SMEs Canting stamped batik with the association can have the opportunity to coordinate with local governments to develop the performance of the canting stamp industry cluster. (S13-O8).

The production strategy (WO) in taking advantage of existing opportunities by minimizing the weaknesses which exist in the products of canting of stamped batik, namely the canting SMEs of batik stamped need to increase the search for better main producers. (W2-O3). The SMEs of Canting stamped batik also need to increase innovation in technology and design in the form of canting stamped batik. (W7, W8, W10-O5). Canting stamped batik needs to review the time, amount, and the right target for additional capital. (W9-O3). The production strategy related to human resources is that the SMEs of Canting Batik Cap need to carry out regular human resources training to increase skills both in the production process and management of SMEs of canting batik cap. (W3-O4). Then, the production strategy related to local government is that the SMEs of canting stamped batik need to increase their working capital with the cooperation of the local government (W9-O7).

The production strategy (WT) to survive and minimize existing weaknesses and avoid external threats of Canting products of stamped Batik is that the SMEs of canting of stamped batik need to do inventory management of raw materials. (W2,W3-T2,T3,T4). The SMEs of Canting of stamped batik need to develop product innovation by following the era (W6-T1). Then, the SMEs of canting stamped batik also need to patent the product design to avoid design plagiarism by competitors. (W8-T5). They need to make new breakthroughs through technology on how to produce of canting of stamped batik products to speed up the results of production which based on orders on time. (W7, W11-T6, T7). In the pattern of human resource strategy of SMEs of canting of stamped Batik, it is necessary to optimize human resources to produce superior product quality. (W4-T5). The SMEs of canting of stamped Batik need to provide education and training for the canting craft of stamped batik in the SMEs environment Pekalongan by involving young people. (W5, W6 -T8).

The production strategy (ST) in using its strengths to overcome external threats of canting stamped batik products is that the SMEs of Canting stamped batik need to conduct market research to identify what models and designs are currently trending. (S7-T2). The SMEs of Canting stamped batik need to pay attention to the growth of technology to assess the use of appropriate technology (S8-T6). The production strategy with the local government of the SMEs of Canting stamped batik needs to carry out an approach with the local government to conduct cooperation with requests for subsidies of raw materials. (S12-T9)

SWOT Analysis of the Marketing Strategy

The main strategy to promote the products of Canting stamped batik to consumers based on the results of the FGD using the SO (Strength-Opportunities) strategy, namely in using all strengths to take advantage of marketing opportunities; here is the SO strategy that needs to be implemented, namely the SMEs of Canting stamped batik need to improve the marketing system both online and offline to reach a more comprehensive marketing opportunity by relying on digital marketing technology quickly. (S10, S11-O6). The SMEs of canting stamped batik also need to increase activities carried out in one place and need to be balanced with services and facilities that maximize the opportunity to ask for support from local government in stable political conditions. (S12-O7).

The marketing strategy using ST (Strength-Threats) as the results of SWOT analysis from FGD data, here is the ST strategy that needs to be done in the production of Canting stamped batik, the SMEs need to increase the use of digital technology advancement to reduce the costs of production and promotion. (S1,S2,S3-T1). The SMEs of Canting stamped batik need to carry out continuous promotions in various villages in Pekalongan. (S10, S11-T7). Then, the marketing strategy related to human resources, namely the SMEs of Canting stamped batik, need to provide HR training to develop the Pekalongan area. (S4-T5). The SMEs of Canting stamped batik need to make efforts to train the younger generation so that they have skills as a substitute for the older generation. (S13-T8). And the marketing strategy related to local government, namely the SMEs of Canting stamped batik, needs to create formulation of policy with the association to propose a policy from local government to have a bargaining position, a position of prestige for the existence of the canting of stamped batik. (S13-T10).

The marketing strategy using WO (Weakness-Opportunities) as results of SWOT based on FGD data, here are the WO strategies that need to be carried out in the production of Canting stamped batik, namely the SMEs of Canting stamped batik also need to carry out active marketing promotions regularly and consistently by utilizing digital technology. (W1-O1, O2, O3, O6). Then, the marketing strategy related to local Government is that the SMEs of Canting stamped batik need to propose to the regional government of Pekalongan to make a curriculum or course about entrepreneurship in SMEs of beautiful products of stamped batik in every high school/vocational school and university. (W6-O8).

SWOT Analysis of The Distribution Innovation Strategy

The distribution strategy using ST (Strength-Threats) SWOT as the results of FGD data, here are the ST strategies that needed to be done in the production of Canting stamped batik, namely the SMEs of Canting stamped batik need to provide the widest possible distribution by building

good cooperation with partners both inside and outside Pekalongan area as a distribution channel (S9-T3, T4).

CONCLUSION

Based on the results of research and data collection through some FGD interviews and field studies on Canting of stamped batik Landung Sari, Pekalongan. It can be seen that the analysis of the internal and external environment in the form of strengths, weaknesses, opportunities, and threats which owned by the SMEs Industry of canting stamped batik Landung Sari Pekalongan. The strategic environmental analysis was done using SWOT analysis. SWOT analysis could develop four types of strategies, namely S-O Strategy, W-O Strategy, ST Strategy, and W-T Strategy. In this case, a SWOT analysis could provide alternative options in terms of strategies to develop the SMEs Industry of Canting stamped batik.

The results of the data analysis using SWOT analysis showed that the SMEs of canting of stamped batik in Lindung Sari, Pekalongan was in a period of its growth and development. Some strategies which can be applied include the Strengths Opportunities (SO) strategy by maximizing their strengths and paying attention to market opportunities. This strategy needs to be supported by increasing human resources (performance of human resources), market penetration, market development, product development, and product distribution.

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