Developing business strategies using SWOT analysis in a color crackers industry

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Abstract. This research was conducted in color crackers industry in Indonesia. Color crackers are snacks colored in red and white, found as additional in many Indonesian traditional foods. The used traditional business strategies are not appropriate for the market condition in the industrial 4.0 era. The aim of this study is to develop business strategies in this market condition. This research was conducted in several steps using SWOT Analysis, weighting assessment for SWOT questions, Internal Factor Analysis Summary, External Factor Analysis Summary, and Creating SWOT Matrix. Data were collected through interviews and questionnaires with internal and external stakeholders. The result of this research is the business positioned in the first quadrant. This gives the explanation that the traditional strategies used already inappropriate with the current condition. They need to use mixed SO (Strength – Opportunity) strategies or called as the aggressive strategy to win the market competition. The developed SO strategies are: creating distribution network with the customers and utilizing renewable technology.

1. Introduction
From a worldwide perspective, it has been recognized that small and medium enterprises (SMEs) play a vital role in economic development, especially in Indonesia, where they have been the primary source of job/employment creation and output growth [1]. The SME also play a vital role in the rural income because they scattered widely and very labor-intensive in the rural area [2]. Tambunan identifies several key issues for improving SME competitiveness in Indonesia, they are human resource, working capital, management and technological skills. These key factors are important to improve SME’s business performance [3].

One of the management skills required is developing the appropriate business strategy [4,5]. In developing appropriate business strategies, management has to know the market condition well so that strategies developed can provide benefits as well as preparing the company to anticipate business risks that will be faced [5,6,7]. Implementing a marketing strategy should begin with a SWOT analysis of strengths, weaknesses, opportunities, and threats [5,6]. Many researchers and businessman usually develop business strategies using environment in industrial 3.0 era such as research undertaken by Tulus, Setiawan, and Ariska [2,3,6]. Nowadays, business is running in an open network system or usually called the industrial 4.0 era. The most fundamental difference between the traditional and industrial 4.0 era is the production basis. In the traditional strategies, a number of production was
based on production planning-generated and usually, the product is ready-made. Meanwhile, in the industrial 4.0 era, a number of production is based on customer and the product is customized. This era has a different condition and giving significant impact to the growth of a company.

This research was conducted in color crackers business in Indonesia. Color crackers are snacks colored in red and white, found as additional in many Indonesian traditional foods. Traditional business strategies used is not appropriate for the market condition in this industrial 4.0 era. Rapidly market changes compared to traditional market conditions cause business need to be more flexible in defining the strategies. The aim of this study is to develop business strategies in this kind of market situation.

2. Method and equipment
This research was done in one of the biggest crackers in Asahan using several steps of SWOT Analysis. Give weighting assessment for SWOT questions, Internal Factor Analysis Summary (IFAS), External Factor Analysis Summary (EFAS), and Creating SWOT Matrix [8, 9, 10, 11, 13, 14]. Data were collected through interview and questionnaire with several stakeholders.

Research was created using several steps as below: [11, 12, 15]

- Identify Internal Factors
  Internal Factors Analysis was created together with internal stakeholders in the company such as production, marketing, labor union, research, and development, and also the top management of the company. Qualitative data was collected through Focussed Group Discussion (FGD) for Strengths and Weaknesses.

- Identify External Factors
  External Factors Analysis was created together with external stakeholders such as business observer, distributor, customer, and also marketing and top management of the company. Qualitative data was collected through Focussed Group Discussion (FGD) for Opportunities and Threats.

- Internal Factors Data Collection
  IFAS is Internal Factor Analysis Summary by weighting and rating strengths and weaknesses so that we can determine the total score of strengths and weaknesses. IFAS was created through FGD with the internal stakeholders. Steps of determining IFAS are:
  - Creating questionnaire using Strengths and Weaknesses. Respondent can choose 1 (disagree) to 4 (very agree). Collected data was treated as the value of the variable.
  - Interview with internal stakeholders and marketing to set weighting for each variable.

- External Factors Data Collection
  EFAS is External Factor Analysis Summary by weighting and rating opportunities and threats so that we can determine the total score of Opportunities and Threats. EFAS is calculated with the same steps as IFAS.

- Creating IFAS and EFAS Analysis and plotted to SWOT Matrix Diagram
  Calculate the total score for each IFAS and EFAS and plot into SWOT Matrix Diagram. (1) When the total score created from IFAS and EFAS plotted in the first quadrant, then the company need to use aggressive strategy; (2) when it plotted in the second quadrant, then the company need to use conservative strategy; (3) when it plotted in the third quadrant, then the company need to use defensive and; (4) when it plotted in the fourth quadrant, the company need to use competitive strategy.

- Develop Chosen Strategy Mix within SWOT
  Chosen strategy, then developed into several business strategies, that need to be developed by the company into programs and activities or usually in Key Performance Indicator.

The Block Diagram for each process in this research can be simply described in Figure 1.
3. Results and Discussions

3.1. SWOT Analysis
SWOT qualitative data was collected through Focused Group Discussion with internal and external stakeholders. Based on the collection, condition for each SWOT is as follow:
- Strengths determined are: strategic location, product quality, lower price, huge capacity, payment method, delivery service and fast complain procedure;
- Weaknesses are natural drying process, limited drying places, undisciplined labor, high production cost, less promotion, and huge capital needed;
- Opportunities are smooth customer access, lower competitor’s product quality, new technology, growth of product demand, good promotion skill, loyal potential customer, easy bank loans;
- Threats are new competitors, customer losses, price competition, changes in customer taste, and nonperforming loan.

3.2. IFAS (Internal Factor Analysis Summary)
Strengths and Weaknesses then gave value and weight based on the results of questionnaire and interviews with internal departments. The result of IFAS is recapitulated per department as can be seen in Table 1.
### Table 1. Internal factor analysis summary.

| Dept.          | No | Factor                     | Attribute | Value | Weight | Value x Weight |
|---------------|----|----------------------------|-----------|-------|--------|----------------|
| Production    | 1  | product quality            | S         | 4     | 0.08   | 0.32          |
|               | 2  | huge capacity              | S         | 4     | 0.06   | 0.24          |
|               | 3  | The natural drying process | W         | 2     | 0.08   | 0.16          |
|               | 4  | limited drying places      | W         | 3     | 0.08   | 0.24          |
|               | 5  | high production cost       | W         | 2     | 0.08   | 0.16          |
| Finance       | 1  | huge capital needed        | W         | 3     | 0.08   | 0.24          |
| Marketing     | 1  | strategic location         | S         | 3     | 0.08   | 0.24          |
|               | 2  | lower price                | S         | 4     | 0.08   | 0.32          |
|               | 3  | payment method             | S         | 4     | 0.08   | 0.32          |
|               | 4  | delivery service           | S         | 4     | 0.08   | 0.32          |
|               | 5  | fast complain procedure    | S         | 3     | 0.06   | 0.18          |
|               | 6  | less promotion             | W         | 3     | 0.08   | 0.24          |
| Human Resource| 1  | undisciplined labor        | W         |       | 0.08   | 0.16          |
| Total         |    |                            |           |       |        | 1.00          |

S refers to Strength, W refers to Weakness

As per shown in above table, we can see that the greater impact to a factor is, the higher weighting be. The rating was given based on comparison to main competitors. The higher this business position, the higher total value be. As can be seen in the above table, natural drying process, high production cost, and undisciplined labor is the lower position of this business (serious weaknesses) compared to the main competitor. The difference between strength and weakness is 1.94-1.20=0.74.

#### 3.3. EFAS (External Factor Analysis Summary)

Opportunities and Threats also proceed with the same steps as in IFAS. The result of EFAS is recapitulated per department as can be seen in Table 2.

As per shown in above table, we can see that new competitors, price competition, and changes in the customer taste is the lower position of this business (serious threats) compared to the main competitor. The difference between opportunity and threat is 1.94-0.91=1.03.
Table 2. External factor analysis summary.

| Dept. | No | Factor                        | Attribute | Value | Weight | Value x Weight |
|-------|----|-------------------------------|-----------|-------|--------|----------------|
| Production | 1 | lower competitor’s product quality | O         | 4     | 0.08   | 0.32           |
|        | 2 | new technology                | O         | 4     | 0.07   | 0.28           |
| Finance | 1 | easy bank loans               | O         | 3     | 0.07   | 0.21           |
|        | 1 | smooth customer access        | O         | 3     | 0.07   | 0.21           |
|        | 2 | the growth of product demand  | O         | 4     | 0.10   | 0.40           |
|        | 3 | good promotion skill          | O         | 3     | 0.08   | 0.24           |
|        | 4 | loyal potential customer      | O         | 4     | 0.07   | 0.28           |
| Sales  | 5 | new competitors               | T         | 1     | 0.10   | 0.10           |
|        | 6 | customer losses               | T         | 3     | 0.10   | 0.30           |
|        | 7 | price competition             | T         | 1     | 0.09   | 0.09           |
|        | 8 | changes in customer taste     | T         | 2     | 0.09   | 0.18           |
|        | 9 | nonperforming loan            | T         | 3     | 0.08   | 0.24           |
|        |    | Total                         |           |       |        | 1.00           |

O refers to Opportunities, T refers to Threats

|          |     |                             |
|----------|-----|-----------------------------|
| O        |     | 1.94                        |
| T        |     | 0.91                        |

3.4. SWOT Matrix Diagram Analysis
Based on calculated data from IFAS, Strength is 1.94, whether Weakness is 1.20 and the differences between them are 0.74. Based on the EFAS, Opportunity is 1.94, whether Threat is 0.91 and the differences between them are 1.03. These data were then plotted to Diagram in Figure 2.
As per shown in Figure 2, the chosen strategy is in 1st quadrant (aggressive / SO strategy) and the strategy needed to be executed as follow:

- Creating distribution network with the customer, which has sub-strategies such as: improve payment method, delivery service, complain procedure, and increase marketing area.
- Utilizing renewable technology, which has sub-strategies such as: using new technology (especially for network information system based) to reduce ineffective and inefficiency, and increase production quantity.

The implementation of this strategy, especially the programs and activities developed will make the business survive in the industrial era 4.0 by reducing production cost, easy to access, easy payment method, and efficient delivery service. This will create a strong position for this business in this era.

4. Conclusions
The result of this study is the business positioned in the first quadrant. This gives the explanation that the traditional strategies used already inappropriate with the current condition. They need to use SO (Strength – Opportunity) strategy or called the aggressive strategy to win the market competition in the industrial 4.0 era. The developed SO strategies are: creating distribution network with the customers and utilizing renewable technology.

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