Implementation of Strategic Flexibility in SMEs of Snack Industry for Capacity Optimization. Is it possible?

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Abstract—The Government of Indonesia is currently paying great attention to the development of the national economy that puts forward MSMEs. In this MSMEs’ development effort, the academic community formed an activity called Business Coaching. Business coaching is now closely related to the empowerment of Micro Small and Medium Enterprises (MSMEs). MSMEs are believed to have a significant role in national economy by contributing to the gross domestic product (GDP) and decreasing the unemployment level. With this capability, MSMEs become the economic pillar of a superior government. In dealing with contributing in GDP, the MSMEs’ business actors must be able to implement its business strategy more flexibly in order to survive in the face of competition. Karin Kukis’ experience in responding to the holiday demand was not good. They produced dry cakes with insufficient amount. Karin Kukis felt that their production capacity was not optimal, so they were unable to meet the demand so that their target was not achieved. Therefore, a business strategy is needed to sustain Karin Kukis’ business. In response to these challenges, Karin Kukis operates a flexible business strategy. Strategic flexibility is the ability of a company to respond to variations in demand from a competitive and dynamic market environment [2]. In the face of this uncertain market demand, Karin Kukis will improve its production capacity so that Karin Kukis can achieve capacity optimization, compete with other competitors, and achieve the goal of increasing revenue from sales.

Index Terms—strategic flexibility, capacity, optimization, MSMEs, business coaching

I. INTRODUCTION

The government is currently paying great attention to the development of national economics that promotes MSMEs. In MSMEs’ development effort, academics form activities called Business Coaching. Business coach itself is a relatively new profession that helps business owners to make better planning, take better action and increase their profitability. Business coaching is a process that can help guiding people in large or small business, as well as organizational environment to further develop their professional skills and increase effectiveness, productivity, value, and marketing—which will eventually increase productivity and profit of the organization or company [1].

Business coaching is currently closely related to the empowerment of Micro, Small and Medium Enterprises (MSMEs). MSMEs are small companies that are owned and managed by someone or owned by a small group of people with a certain amount of wealth and income. In general, MSMEs have characteristics of independent capital, stand-alone management, small company assets, small number of workers and local marketing (Septiawan (2012)).

MSMEs are believed to have a significant role in national economy by contributing to the gross domestic product (GDP) and absorbing more employment. (CNN.com) With this capability, MSMEs are the economic pillar favored by the government. MSMEs’ contribution to GDP has increased from 57.84% to 60.34% in the last five years (Kemenperin (2016)). Over the years, the number of MSMEs in Indonesia has also continued to increase. This causes the level of competition among entrepreneurs to be increasingly high.

Currently, food business industry has developed rapidly. From the data obtained, the growth rate of food and beverage industry in Indonesia in the second quarter of 2017 was 7.19% and above the growth of other industries at 4.71 in the same period (Kemenperin, 2017). This results in a high level of competition in food industry. In addressing this, MSMEs’ business managers must be able to implement their business strategies more flexibly in order to survive in the face of competition. The producers are competing to offer not only competitive prices and good taste but an element of novelty in making food. Karin Kukis, as one of businesses in food industry, specifically Pastries, faces several challenges namely intense competition and uncertain demand.

Looking at Karin Kukis’ business more deeply, we will know that it is very dependent on holiday events such as Lebaran, Christmas, New Year, Chinese New Year and Valentine’s Day as a source of demand. Beyond this, the demand for Karin Kukis is very little. The experience of Karin Kukis in responding to the demand for holidays was not good. They produced insufficient amount of cookies. Karin Kukis felt that their production capacity was not optimal, so they were unable to meet the demand and in turn, their target was not achieved.
Therefore, a business strategy is needed to support Karin Kukis' business. In responding to these challenges, Karin Kukis ran a flexible business strategy. Strategic flexibility is the company’s ability to respond to variations in demand from a competitive and dynamic market environment [2]. From this strategy, a new concept which focuses more on the internal capabilities of a company was developed. This is called resource flexibility, which has the concept that the flexibility of resources to develop products is based on the worth of time and cost to produce a new product [2].

In the face of this uncertain market demand, Karin Kukis should improve its production capacity so that Karin Kukis can compete with its competitors and achieve its goal of increasing sales revenue. In the concept of strategic management, there are two views to face competition, namely Market Based View and Resource-Based View. This paper will focus on the Resource-Based View of Karin Kukis’ operational management. Resource-Based View is a theory where competitive advantage will last long and perform best depending on the contribution of resources that the company has to distinguish it from its competitors [3]. The contribution of resources should be valuable, rare, non-imitable and non-substitutable, making it difficult for other competitors to imitate [4].

Through the concept of Capacity flexibility, which is defined as the company’s ability to directly increase or decrease the level of production [5], Karin Kukis tries to answer the challenge. From this flexibility concept, factors which can be changed to be flexible in the context of Karin Kukis MSME can be seen through the concept of strategic management. Capacity factors that can be optimized in the flexibility framework are machines, equipments and human resources [6].

To support this, MSMEs such as Karin Kukis must be willing and ready to make changes to be able to compete with its competitors. This pastry business is usually run by MSMEs’ entrepreneurs with limited capital capabilities. Although this business has a huge potential, the competition is very high as there are so many players engaged in this field. As an illustration of this potential, Cupreme Cookies as one of the players engaged in the pastry industry has employed ten employees with an income of 38 million rupiah per month. This income will increase by ten times during holiday such as Lebaran. Looking at this potential, it encourages Mrs. Monika Dyah as the owner of Karin Kukis to enter the pastry business.

II. LITERATURE REVIEW

Strategic flexibility is the company’s ability to respond to variations in demand from a competitive and dynamic market environment [2]. From this strategy, a new concept is developed which focuses more on the internal capabilities of a company. This is called resource flexibility, one of which has the concept that the flexibility of resources to develop products is based on the worth of time and cost to produce a new product [2].

In the concept of strategic management, there are two views to face competition; the first one is Market Based View and the second is Resource-Based View. This paper will focus on the resource-based view of MSMEs regarding operational management. Resource Based-View is a theory where competitive advantage will last long and perform best depending on the contribution of resources that the company has to be different from its competitors [3]. The contribution of resources should be valuable, rare, non-imitable and non-substitutable, making it difficult for other competitors to imitate [4].

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In a production process, there are several activities that can determine the amount of production. According to Aguilar-Savén, business processes are a set of combinations of several activities of an organization which has a logical sequence and aims to produce the desired output [7]. When talking about output, this is certainly related to capacity. Capacity itself is the result/output that can be achieved by the system throughout the period [5].

The two things mentioned above, namely output and capacity, will form what is called utilization. Utilization in the operational process is determined from the balance between demand and long-term ability to fulfill the demand. Therefore, the right operating strategy is to focus on capacity decision areas [8]. Besides that, the productivity of an organization also plays a role in determining the output. Heizer and Render suggest that productivity is the ratio of output (goods and services) divided by one or more inputs (including labor, capital or management) [9]. In calculating productivity, there are two calculations, namely single factor productivity and multifactor productivity, which includes all inputs in the form of capital, labor, material, and energy.

III. RESEARCH METHODOLOGY

Implementation of business coaching must be based on a structured framework. This framework is needed so that business coaching activities run effectively and include the initial process of data collection methods until the final process stage, the action plan. This study uses a qualitative method in which the object of research is the Karin Kukis MSME’s businessman.

The qualitative method aims to get a thorough and in-depth understanding of the ongoing situation whether it involves consumers’ feelings, emotions, motivations, perceptions or behavior. In general, qualitative methods are designed to find out how the process is and why it happened. In this method, several techniques can be carried out to draw data from the community (individual/group) or institution (company) such as written document data, in-depth interviews (individual/group) or direct observation [10].
The first activity in the data collection of this business coaching research used in-depth interview techniques to business owners, namely Mrs. Monika Dyah and husband. This is done to explore more about the intricacies of this business that is carried out both internally and externally, the business process, the desires or expectations that the owner wants to achieve, current business conditions and fundamental problems that hinder business owners from achieving their goals.

Some of the questions raised by the author while doing business coaching to Mrs. Monika Dyah as the owner of Karin Kukis include: (1) How was the beginning and background of starting the Karin Kukis business?, (2) What goal do you want to achieve from this business?, (3) What is the biggest obstacle so far?, and (4) What is the business process of Karin Kukis? (5) What activities are carried out?

In addition to conducting interviews, data collection in the form of direct observation was also done. This technique was used to obtain other supporting data and was carried out by direct observation and assessment of business conditions and surrounding environment. The purpose of this observation is to deepen the information that is not captured from the interview process to help find problems and identify key components of the problem (Cooper and Schindler (2014)).

In this business coaching process, observation were carried out in an unstructured manner. Observation was made by looking at all activities starting from order handling activities (Open Purchase Orders), production, distribution, resource management, and financial processes. Primary data such as sales data, Cost of Goods Sold data, and production process time data are the results of observation. Observation was also made to conduct comparative studies and benchmarking of similar MSME baking businesses, namely “Pesan Tampah” in Bintaro, South Tangerang. This is done to see and compare business processes from similar businesses.

The data obtained in the interview and observation stage will be selected and adjusted so that it can be more focused for use in this business coaching research. The data that has been selected and sorted is presented in the form of graphs and tables to describe the business conditions that occurred in the Karin Kukis business. After these data were presented, business analysis was carried out.

Business analysis conducted in this business coaching includes external and internal analysis, namely PESTEL, SWOT, VRIN analysis, canvas business model, Porter’s Five Forces, and gap analysis (GAP). In this business coaching, the gap that occurs must be eliminated or minimized. Therefore, it is necessary to look carefully at priority issues which have been identified before so that the gap can be minimized. In addition, the level of urgency and the impact of the problem for the Karin Kukis business were identified by using the calculation of the problem contribution or Pareto Analysis.

MSME’s performance depends on how they can coordinate and their knowledge in their business processes. From here, the factors that can be obstacles for the competitiveness of Karin Kukis can be identified. These problems were identified through GAP analysis that has been done before. Based on the GAP analysis, there are several main problems. This main problems focus on the operational management aspects faced by Karin Kukis. Through GAP analysis, we obtained the main problems faced by Karin Kukis. The weighting and assessment...
Specifically, data analysis on business coaching activities was carried out using Pareto charts. Heizer and Render explained that Pareto charts is a method and tool for identifying problems, errors, or defects for a product/service that focuses on solving the root of the problem [9]. Analysis using Pareto charts will identify problems based on the degree of importance or level of urgency of a problem. This level of urgency determines the decision making and solution.

The weighting was carried out on a scale of 1 to 4 which explains that number 1 shows the least significant impact, while number 4 shows the most significant impact and this problem must be addressed immediately. Likewise, on a scale of 10-100, number 10 shows the most difficult thing to do, while number 100 represents the easiest thing to do.

Based on the results of the weighting as seen in the table above, the main problem of Karin Kukis business is related to increasing production capacity. Given the limited coaching time and based on the urgency and importance, the solution to this problem will be resolved during this business coaching process.

Another thing that should be noted is that we analyzed the sales data of Karin Kukis. We analyzed the sales data because the problem presented by Mrs. Monika as stated in the introduction is the capacity when approaching holiday. Therefore, through the sales data, we identify whether there is really a surge in demand on holidays as expressed by Mrs. Monika. By looking at the sales data, we see patterns that occur in these problems. This pattern will form a behavior over time so through that, we can find out whether the sale of Karin Kukis rises on holiday as stated by Mrs. Monika.

In the following graph, we can find out Karin Kukis’ sales distribution. Sales of character cookies appear to be very dominant in certain months. This is interesting because this indicates that a period of sales boom as expressed by Mrs. Monika is indeed true during holidays such as Idul Fitri, Christmas and New Year.

IV. RESULTS

The indicator of success of this implementation is to make Karin Kukis achieve a production capacity of 1500 jars per month so that they can fulfill the demand on holiday. They decided to increase production capacity because they did not want to lose their customers if they are unable to produce their products on schedule as experienced previously on Christmas.
Day. Last Christmas in 2017, from the results of interviews with the owners, they obtained data that they were able to produce 850–900 jars with the size 250 gram each jar in one month.

Reflecting on the 2017 Christmas experience, Mrs. Monika is optimistic to increase her production capacity to 1500 jars per month. They also believe that the demand for Eid will increase twice as much as Christmas. However, they are not sure whether they can produce that much. This doubt was seen in the interview session conducted by the author against Mrs. Monika and Mr. Ari. They both seemed less confident with their production capacity to reach 1500 jars per month.

One of the things that are of concern is the capacity of the production machines in the form of ovens and mixers. In doing this, several calculations need to be done. To simplify, the flow of the production process in Karin Kukis can be described as follows.

From the results of the interview with Mrs. Monika, factual data that can be collected are as follows:

Looking at Karin Kukis’ production capacity from the data above, we can see that Karin Kukis’ production capacity per month is 40 jars per day multiplied by a productive working day of 25 days. Thus, the production capacity per month reaches 1000 jars. The assumption used for productive working days is made based on the interview with Mrs. Monika who stated that Karin Kukis carried out its production process for six days a week. On Sunday, Karin Kukis stopped its production process.

It is important to note that the installed capacity of Karin Kukis is currently 1000 jars/month. However, Mrs. Monika Diah has plans and expectations to increase her production capacity to 1500 jars/month. Therefore, there is a gap or a
difference of 500 jars/month. This difference is what we try to solve so that Karin Kukis can increase the expected capacity. If they want to increase production capacity, they must achieve a daily production of 40 to 60 jars with a calculation of 1500 divided by 25 working days so that the results of 60 jars are obtained. The assumption of productive working days is the same, which is 25 working days. From these calculations, we can calculate cycle time and takt time. According to Heizer, et al. cycle time is the time needed to produce one product unit from the start to finish [11]. The formula is:

\[
\text{Cycle time} = \frac{\text{Production time available per day/unit produced per day}}{\text{Production time per day}}
\]

According to Brioso, et al., takt time is the time needed for a product to be produced to meet customers’ needs [12]. In a theory put forward by Heizer, et al., Takt Time is the total work time available to meet customers’ needs [11]. The formula is:

\[
\text{Takt Time} = \frac{\text{The net amount of time available}}{\text{Demand}}
\]

Cycle Time and Takt Time have a correlation where cycle time must be smaller or equal to takt time so that an organization can meet customer needs. The results of cycle time and takt time calculations by the formula that has been stated assuming a working time of 18 hours minus 3 hours of non-productive time are: Cycle time = \((15 \times 60 \text{ minutes}) / 40 = 22.5 \text{ minutes/jar}\)

Takt Time = \((15 \times 60 \text{ minutes}) / 60 = 15 \text{ minutes/jar}\)

To note, the assumption of 3 hours of non-productive time is obtained from the interview with Mrs. Monika. Even in the interview, Mrs. Monika could only estimate the non-productive time of 3 hours.

The results of this calculation explain that Karin Kukis is unable to meet customer demands because the cycle time is more than the takt time. Therefore, it can be said that with the existing production capacity, Karin Kukis will not be able to meet customer demand. Therefore, a strategy is needed—a strategy of flexibility in capacity optimization concerning the production process, layout, and human resources.

V. DISCUSSION

A. Production Process

In this production process, we can see the operation process chart (OPC) that has been going on. Below is the OPC which has been used in Karin Kukis to produce pastries. From the OPC 1 image, it can be seen that with a production lead time of 195 minutes, it will produce 6 product jars (we consider one production lot). This means that with a production time of 18 hours (= 1080 minutes), it will produce 5.5 lots, which is equal to 33 jars. To reach 40 jars, the process of making one lot can be started before the previous lot has been finished, (i.e., while waiting for the cooling process), so that it will be more efficient in terms of the use of human resources.

To increase production capacity, there will be changes in OPC that can be applied at any time depending on the needs. From the OPC 2, it can be seen that there will be two production lines, with the same number of manpower, each one having the same task. Grilling Process 1 is carried out in parallel with the process of making icing.

From here it can be seen that with the same lead time (195 minutes), they can produce 12 jars, which theoretically means that in 18 hours (= 1080 minutes), they can produce 66 jars. As a result of the implementation of this OPC change, a mixer has been added to be used if additional capacity is required.

B. Production Layout

Given the strategy of flexibility in increasing capacity, we cannot override the design of the production site layout. In theory, Jacobs and Chase recommend to achieve flexibility in capacity which involves changes in factories/production sites—changing the design of the layout/flexible plants [5]. In the framework of the Karin Kukis MSME, the layout of their production sites allows for a change in layout design so that they can increase their production capacity before the holidays.

From the results of direct observation to their production site, the layout of the production site can be changed by adding several production equipments such as large ovens. As shown
in Figure 4, it is possible to add an oven in the layout to increase the capacity if at any time there is a surge in demand such as during holidays, including Lebaran and Christmas and New Year. Figure 4 illustrates that location number 7 in a form of table is an important point in the application of this flexibility strategy. Items in location number 7 can be easily moved or replaced if needed to add an oven. Thus, in production layout, the flexibility strategy is possible to be implemented.

C. Human Resources

In a paper made by Holtewerta and Bauernhansla, it was argued that one of the things needed in capacity flexibility is calculating the use of human resources [6]. In this case, we calculated the productivity needed in producing character paintings at Karin Kukis. Information obtained during the process of data collection through interviews and observations found that their productivity:

Output: 40 jars per day; Number of workers: 2 people; Working time 18 hours per day.

From the results of the interview, it was revealed that Karin Kukis had added one worker so that the total number of workers was three people. The worker is their child who is 16 years old. Karin Kukis had added employee to achieve their production targets when welcoming the Christmas holiday. The data they provided are:

Output: 55–60 jars per day; Number of workers: 3 people; Working time 18 hours per day.

The results obtained are the same with the previous results in which productivity of two and three people is 1.1 jars per hour per day. This happened because the production equipment has reached its maximum limit. Without the addition of production equipment in the form of ovens and mixers, the addition of human resources will not increase the productivity of Karin Kukis. If they want to implement a strategy of
Fig. 9: Existing layout.

Fig. 10: Modification layout.

Sehingga produktivitas mereka : 40

2 orang x 18 jam per hari

= 1,1 toples per jam per hari
flexibility to optimize capacity, the strategy of adding human resources before holiday proved to be able to increase output even though it is not too significant, which is from the output of 40 jars per day to approximately 55–60 jars per day.

VI. CONCLUSION

The results of the analysis provide a finding that Karin Kukis can flexibly increase its production capacity. The conclusions that can be drawn from the implementation of this business coaching are as follows:

First, with the change or modification of the operation process chart, Karin Kukis can meet the demand when facing peak season. Before the business coaching is implemented, Karin Kukis’ production capacity was only 40 jars; while after doing the operation modification process, the chart capacity increased to 60 jars. This modification requires the addition of production assets in the form of a mixer that has been done by Karin Kukis. The resource flexibility applied in Karin Kukis by adding one mixer makes the mixer’s production capacity compatible with the oven capacity. Secondly, changes in the layout of production sites also have an impact on the addition of production capacity. Changes in the layout cause the production process to be more efficient by reducing lead times. Finally, modification of the operation process chart from a single line to two lines requires coordination flexibility. It can be seen from the modified operation chart process that the human resources involved in Karin Kukis must be able to coordinate different tasks well. The actors involved in it, Mrs. Monika and Mr. Ary, must be able to exchange roles quickly so that the production process goes well.

REFERENCES