

## Value Chain Analysis to Cost Efficiency

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**Abstract:** This study aims to find how the implementation of value chain to achieve competitive advantage and cost drivers on primary activities and support activities at PT Makassar Agirsarana Utama (PT MAU). PT MAU is an exporting company that develops corn cob meals (CCM) business to meet export demand to Orient Generalize Co., Ltd. located in Naoetsu, Japan. This company utilizes agricultural waste that is corn cob to be a commodity with economic value that has not been utilized optimally in production centers in all regions of South Sulawesi Province. Value chain analysis is expected to provide a strategy to perform cost efficiency in achieving competitive advantage. This research is qualitative approach. The result shows that the activity that use the biggest cost is operational 36,36%, followed by out logistic 28,60%, company infrastructure 17,48%, human resource management 10,70%, purchasing 4,01%, and entrance logistic 2,86%. The primary activity in CCM production is the cost of non-value-added activities resulting in non-value-added costs in operational activities, out logistics, human resource management and corporate infrastructure. By using the value chain analysis, the company cannot eliminate such activities because it is important for long-term business of PT Makassar Agrisarana Utama (PT MAU) so that it is necessary to costs reduce consisting of labor costs, machine rental cost, container rental cost, office travel cost and consumption cost.

Keywords: Value Chain Analysis, Cost Efficiency, Competitive Advantage.

### Introduction

The development of the world economy and structural changes taking place in various sectors, has been a challenge and an opportunity for market participants. One thing that is a prerequisite to be able to overcome the existing challenges and capitalize on opportunities is to enhance the competitive advantage. Competitive advantage can be achieved if a company successfully formulate and implement an appropriate strategy.

The concept of competitive advantage in the concept of generic strategies developed by Porter (1985) that the strategy generics excellence consists compete from excellence cost, differentiation and focus to customer. Company to progress and be able to compete with other companies would require cost information system that can produce accurate information, so as to assist management in making decisions related to the implementation of enterprise IT activities to support the development and can achieve a competitive advantage.

The value chain analysis is an analytical tool strategy used to better understand the company's competitive advantage, identify where the value for the customer can be increased or costs can be lowered, and a better understanding of the company's relationships with suppliers, customers, and other companies in the same industry (Blocher, 2010). Its activities cover all steps necessary to provide the competitive products or services for customers. The value chain can be operated in three phases, in succession, namely upstream, operation, and downstream. Porter (1985) and Kaplinsky and Morris (2002) describe an effective value chain is a key competitive advantage that can generate value added to an industry. The value chain analysis also serves to identify the stages of the value chain in which the industry can increase the value added for customers and streamline costs. Industry

is able to become more competitive through cost efficiencies or increase in value added that was obtained through the value chain activities.

PT Makassar Agrisarana Utama (PT MAU) is a company that develops business "corn cob meals" (CCM). The company was founded in 2012 with the intention of using agricultural waste into a valuable commodity economy. As known, the corn cob waste has not been used optimally in the production centers throughout the province of South Sulawesi but can be of economic value by developing market. PT MAU develop business initiatives CCM are expected to help boost economic activities in the region. In anticipation of the competition, PT MAU committed to ensuring the quality of products and maintain continuity of supply CCM every month throughout the year. Therefore, PT MAU will provide competitive prices according to product quality by Japanese buyers' standards and will supply large quantities of export demand to achieve competitive advantage.

Based on the issues mentioned above, the purpose of the author conduct research to determine the role of value chain analysis to streamline costs in order to achieve a competitive advantage.

Value Chain Analysis. Term chain value refer on series activities necessary to deliver a product starting from the conceptual stage, followed by a few stage productions, until delivery to consumer (Kapslinky and Morris, 2001). Definition chain value is based on approach comprehensive look at the various complex activities undertaken by various doer such as manufacturers primary, processors, traders, service providers for bring materials standard through something chain to into a final product that is sold.

Roduner (2007) in research towards the development of a value chain model in Africa suggests that understood as a value chain operational model analysis. The model shows fact that a product almost never directly consumed in place the process of the production process. Generally, these products are involved in activity transformation, that is combined with others through the process of transporting the product packaging and etc. to reaching the final consumer.

According Porter (1994:39-40) activities mentioned be divided into two groups, namely: 1) Primary activities, the activity consists on Inbound Logistics is the activity, relating to receipt, storage, and distribution of raw materials, to the raw material can be used; Operation, the activity to convert raw materials into final products such as for production, product packaging, assembly, equipment maintenance, testing, printing and operating facilities other; Outbound logistics are activities associated with the storage until the delivery of the product; Marketing and Sales, that is activity that related with provision where consumer could buy product and once an activity that affects buyer so that buy the product; Service, is activities related to the provision of services to increase and maintain value product; 2) support activities, divided into four categories as follows: procurement, namely purchasing activity which refers to the purchasing function input covering the entire enterprise; Technology Development, the activities under taken within the company to improve products and processes, whether it be knowledge, procedures or technology contained in the process equipment; Human Resource Management, which is activity that includes recruitment, training, development, and compensation for all the human resources in the company; Firm Infrastructure, is activities which include overall management, planning, finance, accounting, legal activity, legal administration, and quality management.

Cost Efficiency. With the company's cost efficiency, it will obtain the optimal benefits, increased costs distributed more competitive cost to the customer service improvement and health of a company's security will be increased (Mudrajat and Suhardjono, 2002: 569).

Value chain constitute means main for analysis cost because every activity has value structure cost own and behavior the cost could influenced by the relationship and inter-relationship with activity other in the and outside company. Cost advantage happen if cost cumulative that issued by the company in the activities of lower value compared to its competitors and this cost advantage would be viable if many sources the cost advantage is difficult to imitate by competitors.

This analysis is important to the extent to which measure efficiency company in the activity of that nature by analyzing the activity of which is the value of non-value added activities, so it needs to be

eliminated because it is only burdening cost but no add value to the company concerned and activity what that it needs to be strengthened so that a charge will be known role, especially in frame work reach cost leadership.

Competitive Advantage. There are three types of activity plays a different role in creating a competitive advantage. Porter (1985: 44) explains as follows:

1. Direct Activities, activities that are directly involved in the creation of value for costumer.
2. Indirect Activities, activity that enable for done continuous direct activities, including maintenance scheduling, administration.
3. Quality Assurance, activities which guarantee the quality of other activities, including inspection, testing, monitoring, examination, processing, improvement quality.

Determination Strategy. Selection of the right strategy for the company should also be planned from early, because the company's strategy will affect the success of firms in the long term. In the company's strategy contains objectives and programs and activities that will run on the company, so the strategy constitutes guidance that should be formulated, and implemented by the company to achieve the goals of the company.

The strategy is a set of goals and specific action plans, which it can be achieved will give excellence competitive expected (Blocher et.al, 2007).

Strategies that can applied by the company to achieve excellence in other leadership contenders' cost, which is strategy that for push the cost to obtain the cost of production that low so that it can obtain a cheap price, and the company can superior in the market.

Cost Management Strategies. Strategic cost management is the development of cost management information to facilitate function main, that is management strategies. Cost management has been a change, where on management accounting only focus on reporting financial and analysis cost, while on cost management already focus on finance and non-financial, which the non-financial measures such as human resources, quality, and customer satisfaction is also a concern of the company (Blocher et.al, 2007).

Management cost strategy this appears because presence weaknesses in accounting management. Deficiency on accounting management mentioned is a company focused more on the company's internal processes with ignore process external company. The existence of a supplier could determine success on party internal to affect the timely delivery of goods, structure cost on production processes, quality, and price of raw, while existence consumers will affect the internal parties, such as the cost of the customer, delivery on time, and the level of sales.

### **Research methodology**

The population in this study were all involved in the chain of primary activities and supporting the production process consists of raw material suppliers, workers, packers and shippers in PT Makassar Agrisarana Utama. Methods of sampling using snowball sampling is a key respondent provide information on other key respondents in the supply chain pathways.

Researchers conducted direct observation by doing structured interview containing questions systematically arranged and using techniques of documentation by way of recording data and reports that exist in PT Makassar Agrisarana Utama (PT MAU). Documented data is (1) a general description of PT Makassar Agrisarana Utama covering, activities of the company and (2) The cost data on the activities of PT Makassar Agrisarana Utama.

The method used is a qualitative approach. In a qualitative research method, the object of the study will be analyzed, described and illustrated according to the theory that has been collected which will be the theory will result in a conclusion. Stages are used in the data analysis, namely: (1) Identify the value chain analysis of the activity of PT Makassar Agrisarana Utama by dividing the company's activities into core activities and supporting activities. (2) Conduct analysis of activities in the value chain analysis to find out which activities that can provide added value and activities that do not

provide added value. (3) Eliminating or reducing the cost of the non-value-added activities to achieve competitive advantages. (4) Make conclusions and suggestions.

**Results and Discussion**

PT Makassar Agrisarana Utama (PT MAU) develop business "corn cob meals" (CCM) is an effort to increase production capacity to meet demand for exports to Orient Generalize Co., Ltd. located in Naoetsu, Japan. Japan is the biggest buyer of CCM products in the Asian region. They also import these products from various countries. However, as the buyer requests, needs and demand for these products is quite high. Indonesia is a potential producer for the product quality is considered superior to other countries. Therefore, the product's price can still compete.

Intensive business communications with buyers from Japan have been carried out at the beginning of 2011. In fact, specifically the buyer has visited before and during the preparation of the plant operation PT MAU in Kelara, Jeneponto. Then, before the first export, in early August 2012, quality inspection is also done so that the product really fit the Japanese quality standards. Business relationships with Japanese buyers have been well established among others in cooperation with a partner institution Indonesia-Japan cooperation in Surabaya. The agency is "International Multi-Cultural Center" (IMC Center) that facilitate correspondence with a potential buyer.

Company Activities: Corn Cob Meals (CCM) in PT MAU. The production process is carried out by PT MAU starting from the purchase of raw materials such as corn purchased directly from farmers maize famous superior quality of the entire region of South Sulawesi. Then, the corn is processed in the unit of production/ factory with an area of about 5,000 m2 production unit, which consists of production space, warehouse of raw materials and the rest is the raw material drying area. Procurement of raw materials on the basis of capacity warehouse capability, coverage area and ease the transport and raw material quality is acceptable.

Corn superior quality that have been obtained directly processed in a production machine, namely: First, the separation between the whole maize seeds and stems; Second, the seed which has been separated is then carried out the packaging process and immediately sold, while the rod (corn cobs) performed subsequent production processes into products of corn cob meals (CCM).

The corn cob processing process starts from the process of destruction, formation, and drying can be seen in the illustration Figure 1 below:

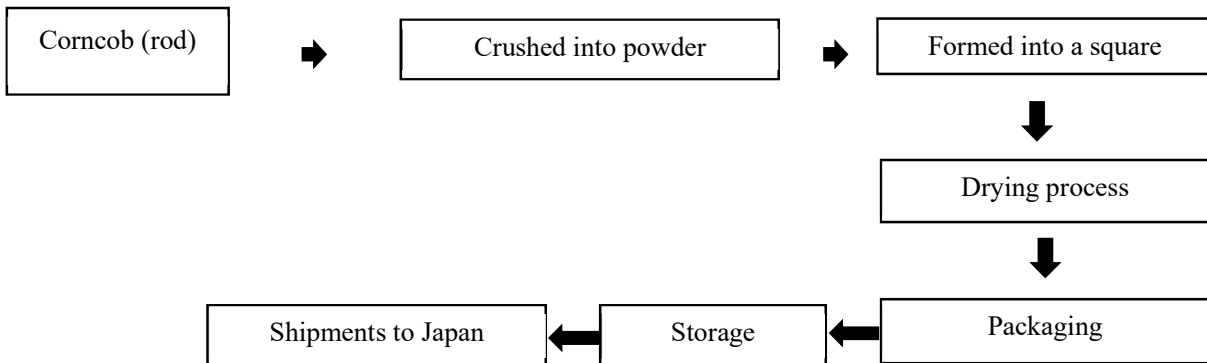


Figure 1. CCM Product Cycle

The installed capacity of the production unit in Kelara CCM-Jeneponto this time amounted to 8 tons CCM / day. During commercial production, are operated by real capacity of about 80% or CCM production approaching 140 tons / month, equivalent to 5 ctn 40 ft HC. The capacity is reached when the generator that is used to supply power to drive the crusher machine capacity 2 ton / hour and the press machine 2 ton / hour simultaneously. While this is still operated alternately, is the concentration

to the crusher machine at the time of abundant raw materials and at a separate time the generator is used to drive a machine press.

As it is known that the corn harvest only twice a year, first at the end of the rainy season in March / April and the end of the dry season around July / August. Production of corn cobs in the first harvest season more than in the second harvest season. In addition, the procurement of corn cobs in the first harvest season allows better drainage.

Packaging process is done after CCM finished product. This packaging uses white sacks which can accommodate CCM products as much as 28 kg per sack or 0,028 tons per sack. If the real capacity of PT MAU produces 8 tons / day, equivalent to 8,000 kilograms, making use about 286 sacks every day. Problems that occur in the process of packaging the CCM is not using a fixed bag size, sometimes using smaller sized sack and larger. Thus, the use of the sack is not fixed any production process is completed. Furthermore, the activity of this packaging ended in storage in the warehouse for export to Japan.

Activities begin delivery of the transport of CCM product from the warehouse to the container for export to the Orient Generalize Co., Ltd. located in Naoetsu, Japan. Export containers totaling 4-5 (ctn) 40 ft HC with export destination port of Naoetsu-Japan, at the request of the buyer "Generalize Orient Co., Ltd." from Gojo City, Nara, Japan. Export is done 2 times a year adjusted for the corn harvest as known at the end of the rainy season in March or April and the end of the dry season around July or August. In the Outbound Logistics activities, quality control processes in the production of CCM generally done per stage. Some workers relying on employees to check, but usually more in check details no seam sack (packaging) at the time the product will be exported.

Identification of Value Chain Analysis Activity Fee. To be able to perform the analysis of the value chain, steps should be done is to identify the activities and current costs at PT MAU value of procurement of raw materials to the export to the buyer Orient Generalize Co., Ltd., Naoetsu, Japan. Then charge incurred in the company to the value of each activity. Grouping activity and charges can be seen as follows:

**Table 1. Activities Cost Data Value Chain Analysis PT MAU**

Activities Value	Amount (IDR)	Percentage Activity (%)
<u>Primary Activities:</u>		
Logistics Sign		
Rental costs Transports Raw Materials	7,625,000	67.57
Wages of Labor Carrier Raw Materials	3,660,000	32.43
Amount	<u>11,285,000</u>	100.00
Operational		
Wages of Labor	56,743,370	39.52
Cost Maintenance / spare part	14,775,444	10.29
Rental costs	61,446,251	42.80
Diesel fuel	10,203,623	7.11
Oil	400,000	0.28
Amount	<u>143,568,688</u>	100.00
Logistics Exit (Handling Fee Chart / Export)		
Cost Car Rental	16,600,000	14.70
Container Leasing Costs	65,670,240	58.14
Expeditionary / Delivery	1,713,030	1.52
Fumigation costs	13,587,400	12.03
Correction BEB	3,766,000	3.33
Forklift Rental Costs	600,000	0.53
Labor Wages Stafel	2,020,000	1.79
Services EMKL	8,627,000	7.64
Etc.	371,800	0.33
Amount	<u>112,955,470</u>	100.00
<u>Supporting Activities:</u>		
Purchase		
Equipment	1,745,100	11.03
Raw material	14,075,250	88.97
Amount	<u>15,820,350</u>	100.00
Human Resource Management		
Employee Salary Costs	14,600,000	34.56
Official travel	27,648,770	65.44
Amount	<u>42,248,770</u>	100.00
Infrastructure Company		
Cost Phone	1,092,000	1.58
Water fees	279,500	0.40
Rental costs	1,700,000	2.46
Cost ATK	1,321,016	1.91
Consumption	10,658,300	15.44
Vehicle fuel Office	4,084,100	5.92
Cost of Accommodation	1,520,000	2.20
Cost Repairs / Maintenance	8,924,784	12.93
Guest	7,048,495	10.21
Cost of depreciation	18,725,384	27.13
Other administrative costs	4,758,500	6.89
Administrative Fees and Taxes Bank	1,436,239	2.08
Loan Interest Costs	7,472,000	10.83
Amount	<u>69,021,318</u>	100.00

Source: Internal Data PT Makassar Agrisarana Utama (2018)

Based on the data table 1 value chain cost analysis activities, then such activity can be classified according to total cost of composition as described in table 2 below this :

**Table 2. Composition of Costs on The Value Chain Activities PT MAU**

Activities Value	Amount	Percentage Activity
	IDR	%
<u>Primary Activities:</u>		
logistics Sign	11,285,000	2,86
operational	143,568,688	36.36
logistics Exit	112,955,470	28.60
Total Primary Activities	267,809,158	67.82
<u>Supporting Activities:</u>		
Purchase	15,820,350	4.01
Human Resource Management	42,248,770	10.70
infrastructure Company	69,021,318	17.48
Total Activity Support	127,090,438	32.18
total Activity	394,899,596	100.00

Source: Internal Data PT Makassar Agrisarana Utama (2018)

Based on table 2 above, it can be seen the analysis of value-added activities or no value added by referring to data value chain cost analysis activities PT MAU and composition of costs in the value chain activities PT MAU, among others:

Purchasing activity is dominated by purchases of raw materials, but it is also the purchase of production equipment used for the production process. Purchasing activity is classified into a supporting activity to absorb the cost of 4.01% of the total cost. Overall this activity has been working with economical, where the raw materials obtained directly from the corn gatherers superior quality, so that this activity can be said that value-added activity efficient. This activity is perfect or ideal use for this activity has been carried out in such a way to keep a business PT MAU in the long term.

Activities warehousing load from the storage of raw materials to be produced into a maize plantation CCM product. Warehousing activities included into the primary activity that absorbs a fee of 2.86% of total cost. Overall this activity has worked with economically, where plantation crops can be accommodated storage and concurrently with the finished product CCM. This is advantageous because PT MAU just issued a check for the cost of storage units, so that this activity can be said that value-added activities.

Activities of production / operations is an activity that has a fairly high cost. This is due to the production activity contains many activities of the company include the use of raw materials and the use of direct labor. Production activities are included in the primary activities that absorb a cost of 36.36% of the total cost. However, companies need to revisit to the use of direct labor cost is quite large. A problem with PT MAU has actual work force for the crusher units as many as 3 people, 2 people weighing unit, press unit 2, and a generator unit 1. If the result of abundant corn production, the PT MAU hiring additional workers, which each CCM production of direct labor are not fixed any production period. This is because the labor for production units sometimes had to play her in a packaging unit and warehousing unit. Therefore, PT MAU should make the recruitment of permanent workers is not the system of labor (workers) be separated in order to work more efficiently by saving costs. So, the activity is classified as value-added activities that are inefficient and lead to non-value-added cost. This activity should not be required in the production process, but it has a chance to do a repair so that it becomes an efficient value-added activity. So, the activity is classified as value-added activities that are inefficient and lead to non-value-added cost. This activity should not be required in

the production process, but it has a chance to do a repair so that it becomes an efficient value-added activity. So, the activity is classified as value-added activities that are inefficient and lead to non-value-added cost. This activity should not be required in the production process, but it has a chance to do a repair so that it becomes an efficient value-added activity.

Activities logistics out absorb the cost of 28.60% of the total cost. This cost is relatively large because the company sent products export to Japan by container. It can be seen that the costs for container large enough influence this activity. Those problems because in the process of sending a lot of experience constraints. Problems that occur in this activity are: 1) Labor made a mistake in arranging a sack containing products. This led to the first container carrying sacks with different numbers, there are more and less; 2) Block buffer in the container is not strong so that sacks containing products usually fall and usually buyers in Japan immediately return the product (return); 3) When the CCM product has arrived, the buyer Orient Generalize Co., Ltd. discovered a foreign object in the bag products, thereby directly return the product (returns) and product are not paid. So, the activity is classified as non-value-added activity and lead to non-value-added cost. Leading to waste and add little or no value to the product, such as rework or the returned goods, and produce output that is unnecessary or undesirable.

Human resource management activities to absorb the cost of 10.70% of the total cost. The overall costs are already well underway. But there is a cost that should be deductible from the activity that this activity could be more efficient, the official travel costs significantly. The official travel arose because the branch office of PT MAU is located in Surabaya, office units located in Makassar, and production units / factories CCM Mccini in Baji, Village Kelara Jeneponto. This makes the directors to travel to perform quality control, in addition to the board of directors is also to travel to Orient importing companies Generalize Co., Ltd., Naoetsu, Japan. So, the activity is classified as value-added activity that is efficient and lead to non-value-added cost.

Activities infrastructure companies absorb the cost amounted to 17.48% of the total cost. The overall costs are already well underway. But there are some costs that should be deductible, so that activities can be more efficient corporate infrastructure. Consumption costs absorb a cost of 15.44% of the company's infrastructure activities. These costs arise because of the regular meetings with the board of directors of the company's customers. So, the cost is classified as value-added activity that is not efficient. This activity should be reduced because it does not add value for the consumer and activities that do consume resources beyond the truth. The corporation should create a policy for a meeting or conference held if there is a need.

## **Conclusion**

Based on the results of research and discussion, it can be concluded as follows:

1. The main activities of the value chain (value chain) on the product "corn cob meals" (CCM) PT Makassar Agrisarana Utama (PT MAU) covers the activity of purchasing raw materials and major equipment, such as corn and sacks; production activity involves the separation of grain and corn cobs, destruction of corn cobs, corn cob formation, drying, and packaging of the CCM; shipping activity starting from the transport of CCM product from the warehouse to the container for export to the Orient Generalize Co., Ltd. located in Naoetsu, Japan.
2. Activities that use the largest expense that is, Operational 36.36%, followed by the logistics out 28.60%, 17.48% the company's infrastructure, human resource management 10.70%, 4.01% purchasing, and logistics entrance 2,86 %.
3. The main activity in the production costs of the CCM is still a value-added activity, causing no value-added costs (non-value-added cost) on operational activity, out logistics, human resource management and infrastructure companies. By using the value chain analysis of the company cannot eliminate such activity because it is important to long-term business PT Makassar Agrisarana Utama (PT MAU) so it is necessary to reduce costs consist of labor costs, the cost of



renting the machine, the cost of exports of container rental, travel expenses and consumption costs.

In essence, researchers suggest that the analysis of the value chain can be implemented by companies as an alternative evaluation and cost efficiency to improve the company's competitive advantage. This analysis specifically looked at the company as a series of interrelated activities and sort out any activity such that activities that do not provide added value can be identified by determining and streamline the cost of each of these activities, so that cost efficiency is achieved. Optimizing the activity which has the highest added value to more efficiently manage their production costs and the company should be sustainable in evaluating each stage of the activity of the value and cost-efficiency in the value chain, so any value-added activity can be eliminated as well as reducing costs and identify cost control in order to achieve maximum cost efficiency without degrading the quality and performance at every stage of the value activity. Lastly, maintain cooperative relations with the Orient importer Generalize Co., Ltd., so intertwined partners Indonesia-Japan cooperation agencies.

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