Supply Chain Strategy for Ayamas Food Cooperation

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Abstract

This paper presents the case study of Ayamas Food Cooperation Sdn. Bhd. (AFC), focusing on the company strategy for its supply chain management (SCM). The data was gathered from the company's official website and related documents retrieved early in the year (2018). The overall information of the strategy was identified from these main segments of SCM: supplier, manufacturer and distribution up to retailer / customer. The types of food product were clearly categorized and many of them were highly demanded as fast-moving items. The SCM strategy across these segments is crucial and therefore communication system is emphasized not only for efficiency purposes, but also responding to the reactive demand. It is identified that there is a clear competitive advantage (CA) strategy for AFC. Although AFC is performing well as indicated by the manufacturing volume, this paper identifies a gap in terms of logistics and distribution. This paper also presents some proposal for improvement.

Keywords

Ayamas Food Cooperation (AFC), Competitive Advantage (CA) strategy, Halal, supply chain management (SCM).

1. Introduction

Ayamas Food Cooperation (AFC) is the first company in Malaysia to breed, process and retail halal chicken-based products (Soong, 2007). It processes 100,000 birds per day to supply to both local and international markets including Singapore, Indonesia, Brunei, Hong Kong and the Middle East (Salim, Zakaria, Hassan, & Zia, 2016). AFC promises its consumers to produce high quality halal products that it spends over RM5 million on research and development annually to fulfil its commitment (Soong, 2007). In addition, it has ISO 9002 certification and is in the process of obtaining the Hazard Analysis and Critical Control Points (HACCP) as an integral part of quality assurance to the market. AFC guarantees all its products are halal since it has 100% control at each and every stage of its' processes ranging from breeding, hatching, slaughtering, processing, packaging and distribution (Hashim, 2010). It owns hatcheries to ensure halal quality from eggs to chicks, breed chicks in a close air conditioned and contained system that chicks are isolating from unclean materials and uses halal feed for the entire system. It also owns abattoirs that functions according to Department of Islamic Development Malaysia (JAKIM) setting standards and processing plant that produces halal chicken products. Moreover, AFC developed a Syariah Advisory Council consisting of distinguished and prominent religious scholars from Islamic institutions that act as an advisory body to advise it on all halal matters relating to its' business. It also maintains close relationships with JAKIM to ensure consistency of producing halal products (Mohtar, Amirnordin, & Haron, 2014).

In this paper, a thematic review of AFC is undertaken to review its SCM development. The data was gathered from the company's official website and related documents retrieved early in the year (2018). The overall information of the strategy was identified from the main segments of SCM: supplier, manufacturer and distribution up to retailer / customer. This paper identifies a gap in terms of logistics and distribution even though AFC is performing well as indicated by its manufacturing volume. The paper also presents some proposal for improvement, as well as the supply chain strategy.

2. Competitive Advantage

The strategies for competitive advantage include differentiation, speed and cost leadership. The ultimate championed in competitive advantage (CA) for AFC production is its' operating in 'Halal' poultry processing with advanced food processing (plant at Port Klang), wholesaling and retailing. AFC operates in accordance with Good Manufacturing Practices (GMP) requirements and has a HACCP and ISO 9001:2000 systems in place within its' Quality Management System (QMS) that ensures food safety and consistent high-quality products.

It is identified that the processing plant in Port Klang, Selangor, which has been operating since 1989, has an onsite ISO/IEC 17025 accredited microbiology laboratory and was the first to receive the Veterinary Health Mark (VHM) logo from the Department of Veterinary Services (DVS) in Malaysia. In addition to that, all three-processing plants (i.e. Port Klang, Bukit Mertajam and Bandar Tenggara, Johor) are fully equipped with an integrated product development and a sensory evaluation facility. Hence, AFC is capable in conducting up-to-date research and development activities. The research and development team is made up of qualified, trained, and experienced food technologists that are constantly improving on the quality of its' products, works on improving current products and innovating new products to meet its' consumers' expectations (Othman, Sungkar, & Hussin, 2009).

3. Vertical Integration

Vertical integration defining in developing the ability to produce goods or service previously purchased or in other words is a measure of how much of the supply chain is controlled by the manufacturer. The said integration may be forward, towards the customer (i.e. acquiring control of distribution channels), or backward, towards suppliers (i.e. acquiring control of raw material suppliers). Consequently, the company can improve cost, quality, and inventory but requires capital, managerial skills, and demand. However, this approach is risky in industries with rapid technological change. Figure 1 below show the diagram related to example industries with adoption of vertical integration. While, Figure 2 simplify the adoption of vertical integration by AFC.

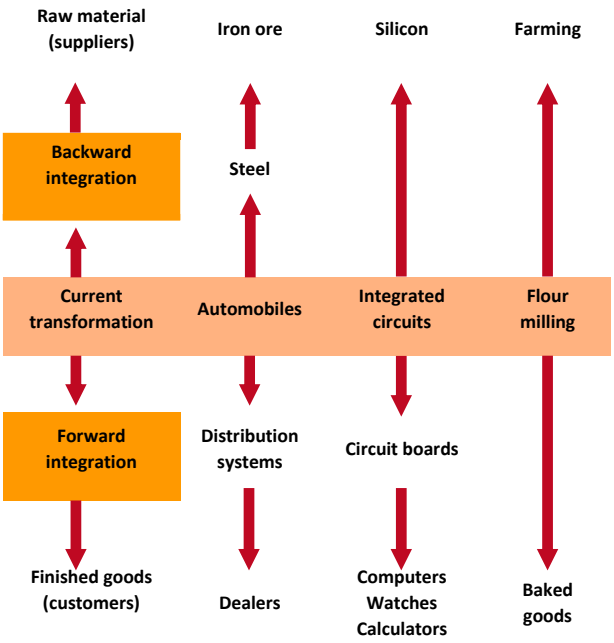

Figure 1. Vertical integration diagram

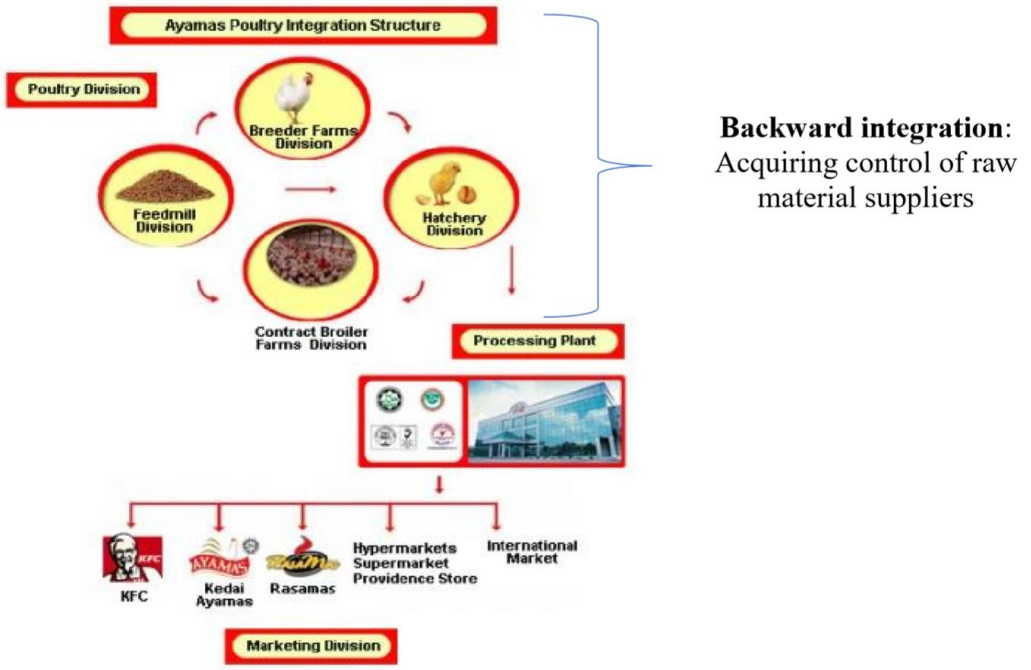

Figure 2. Adoption of vertical integration by AFC

4. Input Process: Suppliers of Raw Material

As of AFC supply chain strategy, backward integration is being used in acquiring control of raw material suppliers as they have their own farms cultivated by their subsidiary, i.e. Ayamas Poultry Integrated industry. They've set up via tier 1, tier 2, tier 3 and tier 4 for contract boiler farm division, hatchery division, breeder farms division and feed mill division respectively as shown in Figure 3. Contract broiler farm division consisting of six poultry farms in Malaysia including Gemencheh, Rantau, Seremban, Alor Gajah, Sungai Petani and Kajang. These six broilers farm supplies chicken to three factory processing plants located in Klang, Bukit Mertajam and Bandar Tenggara. With the function of Ayamas subsidiary, they use a strategic supply method for supplying chicken to their own three plants, to ensure the sufficiency of chicken supply always meet the market demand. Even though these six poultry farms are in concurrent measure in avoiding any possibility of insufficient of supply to the plant, there still risk factors such as weather, illness, government stability, prices, accidents etc. that might affect the volume of supply. This also coincide with the role of subsidiary of Ayamas where quality assurance can be maintained at the designated basis (Zailani, Ahmad, Wahid, Othman, & Fernando, 2010).

Issues regarding quality and Halal process can be handled in tandem and observed from time to time. What is important in the merger of these two important aspects in supply chain processes is that manufacturers can share information accurately and reduce the bullwhip effect to easily adhere to the SCOR model plan, source, make and deliver. The process components of SCOR model are seen in Ayamas supplier level to manufacturer, however, a detail analysis was not carried out due to the lack of public data access.

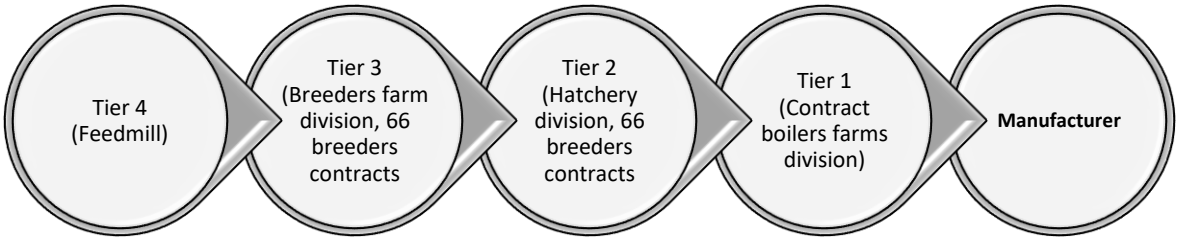

Figure 3. Supplier tier to the manufacturing process of Ayamas product

5. Manufacturing: Poultry Processing Plant

5.1 Stable, reactive and efficient reactive product

The supply chain has also developed its strategies, which are reactive, stable and efficient reactive; the steady supply chain strategy is focused on chains that are focused on execution, efficiencies and cost performance in which the technology and real-time information is much needed (Basodan). Shelf stable can be defined as product characteristics that prevent the growth of pathogenic microorganisms under normal storage conditions (Ingham et al., 2005). For instance of a stable supply chain strategy is a salt manufacturer with commodity-oriented process, new scale production and dedicated capital assets (Godsell, Diefenbach, Clemmow, Towill, & Christopher, 2011). A reactive strategy works well when a chain acts to fulfil demand from trade partner sales and marketing strategies. However, reactive approach represents a significant competitive disadvantage as well as a method that can produce higher risks and threats (Hoover Jr, Eloranta, Holmström, & Huttunen, 2002). An example of the reactive supply chain strategy according to (Basodan) would be the manufacturer of sports team apparel for the fans competing rivals in the world championship tournament. When a team makes it to the new round, all products are needed for the round. However, when a team loses, demand for apparel decreases. However, with efficient reactive supply chain strategy, it focuses on efficiency and cost management on the total delivery of finished goods. So, the example of efficient reactive strategy will be a Supermarket chain where the shops, distribution centers, third-party logistics providers, manufacturers corporate to replace what is sold in the shop within less than 24 hours (Harrison, 2005).

All the process of the supply chain falls into two processes, where the first one was the cycle view for modern supply chain process, i.e. the push and pulls view of supply chain process highly productive against many perspectives of tactful supply chain process. These supply chain processes are actually believed to give the best as supply chain management struggles. In the pull process of supply chain processes, the order is implemented according to the demand of the customers. While in the push process, the order is executed according to the anticipation of the orders of the customers. In other words, in the pull process execution, the demand of the customer is known but in the implementation of the push process demand of the customers (Fabbe-Costes & Jahre, 2008). It is actually not known and is forecasted in any perspective immediately in supply things from one chain to another. Pull process is also known as the hasty process because a response is made according to the customer demand while the push process uses the proactive strategy as they respond to the forecasted demand and not to the actual demand. In addition, this push/pull strategy separates push process from the pull process in a supply chain. It is useful in making a strategic decision that may affect the decision of supply chain in no time. Moreover, the view forces actual perspectives that are globalized paradigm with perfect combination in no time bounded way. These functions are related to the customer order. One example of a push and a pull process can be described as let us take an example of a Dell supply chain company (Basodan).

For AFC, the three SC strategies, (i.e.,stable, reactive and efficient reactive), the products manufactured by the company can be dealt with in three categories; stable category consist of shelf stable products, such as canned curry chicken (original/extra spicy), canned *masak merah* chicken, canned rendang chicken, canned oriental sauce chicken

with mushroom and 100% fresh chilli sauce. Whereas in the reactive category, they consist of chilled whole chicken, chicken parts, deboned chicken meat, and minced chicken meat products such as frozen chicken products, breaded freezer-to-fryer products; such as nuggets, drummets and midwings, breaded chicken parts, burger patties, chicken fingers, chicken meatballs and chicken popcorns. Finally, there are fully cooked or further processed products such as sausages, cocktails, smoked wings, meatballs, meat loaf and pizza toppings. Table 1 shows the types and product details as mentioned above.

Table 1. Types and product details

Type	Product detail
Stable	Shelf Stable products; Canned Curry Chicken (Original/Extra Spicy), Canned Masak Merah Chicken, Canned Rendang Chicken, Canned Oriental Sauce Chicken with Mushroom and 100% Fresh Chilli Sauce.
Reactive	Chilled Whole Chicken, Chicken Parts, Deboned Chicken Meat, and Minced Chicken Meat products, and Frozen Chicken products.
Efficient reactive	Beside KFC and Rasa Mas, Ayamas' fresh chickens are also supplied to hypermarkets and other fast food outlets. This prompted the setting up of outlets where overabundance supply could be sold straightforwardly to shoppers, aside from being diverted to hypermarkets and other fast food outlets. Ayamas more focus on mark quality, freshness, cleanliness and halal factors to rival different providers of crisp chicken in the market. With respect to additionally handled items, Ayamas will keep on churning out variations to its officially settled lines delivering nuggets, chicken meatballs, burgers and drummets.

The chickens from supplier are sent to the factory for processing according to demand. At this stage the manufacturer uses backward and forward vertical integrated strategies. Once this process is completed, the live chickens are to be slaughtered followed by the removal of their interior parts. Concurrently, AFC will also identify the market demand as well as the customers need for stable and efficient reactive product. Efficient reactive is an important part to maintain an appropriate flow of the optimal production equipment, price, and time. The other strategy like the push approach, offer great emphasis on predictions. However, customer predictions are often unpredictable, nevertheless, Ayamas products are always relevant, which made a great deal of preparation for any possible risk of implementing this push strategy (Habib, Abu Dardak, & Zakaria, 2011).

5.2 Processing Plant in meeting the Quality and Halal Standards Procedure

All three (3) processing plants (i.e. Port Klang, Bukit Mertajam and Bandar Tenggara, Johor) only allow chickens which complied with the quality and Halal standards for further processing. This chicken selection process has been carried out from the livestock farms as to ensure quality and process of Halal-ness in all aspect. Here the chickens are processed, starting with the slaughtering operation, which strictly accorded to the standard and rules spell-out in the Halal certification process. The Halal control points are closely monitored throughout the processes and being documented throughout the supply chain. Hence, consumer trusts are engaged as the confidence level are highly benchmarked in the whole Halal supply chain (Wilson & Lim, 2008).

6. Distribution

AFC adopts Vertical Integration in the distribution of their products. Among the subsidiary companies involved are KFC, Pizza Hut, and Rasa Mas. Ayamas also is one of the biggest integrated poultry operators nationwide, specializing in the processing and retailing of chickens for local and export markets.

The company embarks on a RM10 million three-year plan to supply to retail markets in Malaysia, West Asia and the rest of the world. Ayamas do not want to be known only as a supplier to KFC and Pizza Hut, but out there, they are looking for opportunity and assuming that have 23 million people to sell to, as well as supermarkets, mini markets and hypermarkets to distribute to. Ayamas seems to want to capitalize on the industry's potential as their strategy for the long-term mission. After somewhat over a time of usage, the outcomes have been obvious. As such, the necessity

of the warehouse is of essence to store all stocks before going to be transported to customers. It is also a place where all inventory documentations are made to make sure all stocks are in specific quantity and in good condition.

Two types of warehouses, which are public (rented facility) and private (owned facility) warehouses, were identified. The advantages of the private warehouse are such as offering maximization storage of stocks which enable them to fulfil demands at any time plus that having the flexibility of time in utilising the warehouses. Total of the fixed cost shall also be reduced since no expiry period of using the facilities of the warehouses. However, there are disadvantages of owning warehouses since bigger capital expenditure need to be borne by the company. This may also include the costs of utilities and taxes.

Ayamas additionally has items such as Ayamas Crispy Fried Chicken, Ayamas Premium Cheese Frankfurter and Ayamas Premium Black Pepper Frankfurter. Most of the distribution centers claimed by AFC are refrigerated. Therefore, as optimal solution, Ayamas supplies more than 1,000 coolers to shops and retail outlets in rural regions throughout the nation. This is critical to encourage big quantities of raw chicken meats, which was previously handled or sent to the eateries. Cool stockpiling is expected to secure the nature of the meats by keeping the development of microscopic organisms on the crude materials. In this way, the meats will be protected to be consumed after being prepared (Shazalli & Lancendorfer, 2013)

7. Recommendations and Conclusions

For improvement, the importance of these three factors need to be emphasized, i.e. flow of material, flow of financial and flow of information. The flow of material and financial is much affected by the effective and efficient information flow. Information sharing between all stakeholders will enable specific CA strategies for SCM be planned. The flow of information must be accurate and at speed, particularly in the current environment of Industry 4.0 (IR4.0). Technology in informatics and Internet of Things are there for Ayamas to explore and exploit, leading to solutions in logistics between suppliers, manufacturers and distributors. For proper monitoring, database system needs to be developed for records, information sharing, and safer data security, fast and accurate. For example, the BigFarm Net Manager database is a software that can be used in developing ‘smart poultry’, which is aligned with the development of IR4.0 (Zhu, Anagondahalli, & Zhang, 2017). This would also enable the company to monitor and control not only the SCM but the processes at the poultry or farmhouse, like the house atmosphere in controlling and monitoring the settings of water, light, and other requirements suited to the customers. The use of the latest system covers all aspects of poultry supplies, manufacturers and distributors, whereas all the information on the number of poultry, poultry care, the delivery of raw chicken to the factory, and the delivery of the product to the customer could be properly and optimally managed. The system can also be developed to collect the customer's feedback.

The strategies for competitive advantage include differentiation, speed and cost leadership, which in this case, AFC adopts the differentiation strategy. In the supply section, costs, better cost control, and the capacity to supply the quick growing open poultry demand for the local and abroad market are taken care of. Their handling plants process poultry for eateries all through KFC Holding, and spotlight on accomplishing cost-proficiency while keeping up halal and amazing gauges.

Meanwhile, in the manufacturing segment, customers’ preferences need to be alerted by AFC, even though the varieties of chicken-based products were already insight of Ayamas. That is because, change in trend and new recipe demand is part of the culture not only for local people, but must also cater for the global markets.

In the distribution section, there are several measures that could be adopted for instance from Europe, where several refrigerated warehouses are already built with eco-friendly technology. This kind of warehouse releases no cfc gases which will contribute to better environment. If AFCB uses this type of warehouse, they are not just doing their social responsibility but also encourages other company to do the same thing, thus, Malaysia will be a better place to live in. Additionally, another type of modern warehouse is one which is attached with solar panels to the roof. Using solar energy will help AFC to reduce its cost in warehousing especially about reducing the electricity bill.

Finally, AFC should aware that information sharing is important in supply chain management between three (3) segments, i.e. supplier, manufacturer and distribution until to customer or retailer. Smoothness and accuracy flow of information will affect the flow of material and financial in terms of efficiency and effectiveness.

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Biographies

Ir. Mohd Effendi Amran is currently a Senior Engineer and served duty in Engineering Services Division, Ministry of Health Malaysia. Ir Mohd Effendi is a well-trained government officer, where his previous nature of work in leading a group of engineers through managing, planning, designing and implementing the various type of public hospital projects all around Malaysia had gained him with potential engagement among key personnel and organizations locally and internationally. Ir. Mohd Effendi is a Professional Engineer registered with Board of Engineer Malaysia, a Certified Energy Manager (CEM) and a Registered Electrical Energy Manager (REEM) under Energy Commission. He had started his engineering education journey with Certificate of Technology in Electrical Domestic & Industry at Institut Kemahiran Mara (IKM), Beseri, Perlis. He also being examined and qualified for Wireman PW4 in the same Institute. Then, he had further his study and completed a Higher National Diploma (HND) at British Malaysia Institute (BMI), Kuala Lumpur, Malaysia. The opportunity continued where Ir. Mohd Effendi had completed and received his Master of Engineering (MEng) at The University of Hull, United Kingdom. Currently, he's entering a full-time Doctorate program at University Teknologi Malaysia (UTM).

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