

The Application of Environmentally Friendly Technology-Based System through Three Holistic Marketing Components: A Case Study

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Abstract: The roles in enhancing environment sustainability of a company producing gloves was studied. The objectives were to know the application of environmentally friendly technology-based system through internal marketing, societal responsible marketing, and integrated marketing concepts. The research questions: (1) how is the implementation of internal marketing regarding the waste handling; (2) how the societal marketing is implemented in all manufacturing processes; (3) how in accordance with integrated marketing, the green chemistry is carried out through clean technology, friendly environment and availability of raw materials. A case study design with data triangulation was employed. The analysis showed that the company hired and provided an excellent health service for 798 workers from the surrounding areas, fulfilled SR8600 standard and used eco-efficiency machines in its operations. Besides, it adopted ISO 14000, proactively performed societal marketing by producing biodegradable hand gloves, carried out eco-efficiency activities, and managed mutually satisfying relationships with key stakeholders. Finally, to create a green environment, the company performed waste treatment management, adopted energy efficiency measures, ensured the availability of raw materials to make products rapidly degraded by microorganisms hence better environment, and followed the stringent formal rules. The study inductively generated concepts and formulated a set of propositions leading to a proposed model.

Keywords: internal marketing, societal responsible marketing, integrated marketing, corporate social responsibility, green chemistry

World economic crisis in 2008 does not only affects the United States, a country with the largest capitalization in the world economy, but also other countries. People have become a world of consumers connected at the time of the full change. Even though America and Europe suffered from economic slump countries in Asia, especially China and India, are experiencing rapid economic growth resulting in new customers and set as guidance to be one of the richest nations in the world (Daniels, Radebaugh, and Sullivan, 2009).

Hayden (2009) argued that, for decades the United States led the world in consumption, followed

by other industrial countries. Now their position began to be replaced by new economic giant in Asia. China and India are in the top 10 in world consumption; 106% increase in global oil consumption will occur if the consumption styles of Chinese citizens become like Americans. Surprisingly, 75% of world populations live in countries whose level of consumption is moving faster than the level of environmental reform.

In urban areas, there are significant demands in the consumption of energy, minerals, water and forest products. This tendency can lead to worse due to the releasing of a large scale carbon dioxide and methane gas resulted in the global warming and climate change. The threats of decreasing energy supplies, natural resources and climate change are waiting for the real action of man (Hayden, 2009).

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Industrial activities have been blamed as the main cause of all the environmental problems. Demands from communities, NGOs and other international agencies for companies to pay attention to environmental issues, are strengthening the argument that environmental conservation is very important in maintaining the viability of the company (Widjaja & Pratama, 2008).

The driving factors that generate problematic situations in this research undertaking related to ecology and its benefit to the company. The study was conducted at ALO (The real name of the company cannot be revealed due to the the agreement between researchers and the company), a glove-manufacturing company in Indonesia. The research questions are:

- how is the implementation of internal marketing concept shown by ALO and its employees regarding the waste handling?
- how is the societal responsible marketing implemented in all manufacturing process?
- how is the green chemistry carried out through clean technology, friendly environment and availability of raw materials in accordance with integrated marketing?

Literature Review

Corporate Social Responsibility/CSR

Nursahid (2006) defines social responsibility as a moral responsibility of a business organization to the stakeholders affected by the company's operations, either directly or indirectly. Furthermore, Elkington (Susanto, 2009) states that a company demonstrates its social responsibility by giving attention to the improvement of quality of the company (profit), the surrounding community, and environment (planet). The issues cover in social responsibility range from the environment, good operating practices, consumer protection, social development, organization governance, human rights, and labor practices (Solihin, 2009).

The Holistic Marketing Concept

Kotler (2006) introduces the holistic marketing concept based on development, design, and implementation of programs, processes, and marketing activities that interdependent one another. This

concept includes: relationship marketing, integrated marketing, internal marketing, and societal responsible marketing. This study limits to three components.

Societal Marketing Concept

The conceptual definition of marketing continues to change from time to time due to the dynamic marketing context. The societal responsible marketing concept is used within the framework of sustainable marketing. In a sustainable marketing, a company will look at marketing as a tool to bring together the current needs of consumers and businesses and focus on the needs of future generations.

To understand the societal responsible marketing within the framework of sustainable marketing, companies need to understand the scope of corporate social responsibility first. Social responsibility can be viewed as a social bond, the bond among company stakeholders; as corporate ethics in determining right and wrong, and as a managerial process. The next step is to link marketing strategy with social responsibility itself either defensive or offensive (Hooley, et al, 2008).

The defensive corporate social responsibility strengthens a company to have a good relationship with consumers, B2B customers, suppliers, non-profit organizations, communities, employees and managers. By strengthening the relationships with its stakeholders, a company will protect the competitive position of its brand reputation. On the other hand, an offensive social responsibility means that a company aims at creating a competitive advantage. Porter and Kramer (Hooley, Percy, and Nicoulaud, 2008) states that company's action to fulfill its social responsibility is not just a form of affection of a company to its stakeholders, but social responsibility can be used as a source of opportunities and innovations in creating a competitive advantage.

Integrated Marketing

Kotler (2003) states that an integrated marketing is the result of work of all departments in the company to serve the needs of consumers. Integrated marketing is implemented in two levels. First, each function of marketing (product vendors, part advertising, customer service, product management, marketing and R

& D) works together. All these marketing functions must be harmoniously coordinated in accordance with the consumer viewpoint. Second, marketing must also cooperate with other functions within the company. The marketing department should have 'consumer thought patterns'. According to Packard company (Kotler, 2003) marketing is not only the job of a special department within a company. Marketing must be part of every job description in the company and the results of each activity will have an impact on customer service.

Thus, Kohli and Jaworski (Hooley, Piercy, and Nicolaud, 2008) emphasize the importance of market orientation. Kohli and Jaworski argue that the market orientation involves one or more related departments in an activity together to develop for current and future consumer demand and the factors that influence it. One or more of these departments also share this understanding into cross-departmental and eventually some departments are united in an activity designed to bring together the needs of consumers. In other words, market orientation refers to the whole body of the company and based on market intelligence.

Internal Marketing

Kotler & Keller (2006) refer internal marketing as marketing that plays a role in recruiting, training and motivating employees so that they can serve buyers well. Kotler & Armstrong (2010) classify the internal marketing into three forms of marketing services, that is, internal marketing, interactive marketing, and external marketing. Unlike the internal marketing in order to orient and motivate employees to provide good services, interactive marketing aims at training employees to be able to well-interact with customers and satisfy them. If the internal and interactive marketing aims directly into the scope of a company (employees), then the external marketing aims directly outside of a company (buyers). A marketing manager who has skills and looks at the internal marketing activities within the scope of the company is important things. The skill manager will balance and even more focused on marketing activity outside (external) of the company. It is impossible to a company to promise a satisfactory service before its employees are ready to meet it.

Sustainable Development System

A sustainable development system is an industrial system that brings the need of the present by thinking about the need for future generations as well.

The challenge is how the system would be applied in a growing industry without giving bad ecological and social impacts (Fiksel, 2009). Protecting the environment has become a major issue in every form of industry today. Previously, this issue is still spinning in the preservation group; health and environmental safety are isolated by a company from strategic planning and business operations. However, the roles of conservation groups, health and environmental safety have shifted, and the concept of environmental conservation which once considered exoteric (only taken by some parties) has now been transformed into a comprehensive business strategy to create a competitive advantage.

The concept that emphasizes the creation of a corporate competitive advantage is eco-efficiency. Eco-efficiency is a concept whereby companies adopt an environmental performance in its overall production system. World Business Committee for Environmental Development (World Business Council on Sustainable Development), a global coalition of several companies in the world, defines the eco-efficiency as a form of delivering goods and services to the consumers. It supports consumer satisfaction with a competitive price and reduces the negative environmental or the natural resources impacts progressively (Fiksel, 2009).

Eco-Friendly and Sustainable Chemical Industry

The usage of renewable resources is not for fuel and raw materials. It happens through the release of pollutants from the plant during the production processes until the disposal of products. This also contains hazardous waste. In each stage of the manufactured product's life cycle by the chemical industry may have a negative impact on humans and the environment.

In green chemistry, chemists and researchers encourage the industry to develop chemical products and chemical reactions that take into account aspects of environmental impacts that may arise. Green

chemistry is defined as a condition in which a company engaged in the chemical industry to produce environmentally friendly products that minimizes waste and implement programs and industrial's ecology as demanded by the public (Garcia, et al., 2005). The movement is known as sustainable chemistry. The practice involves a variety of techniques, among others (Fiksel, 2009):

- use an alternative reaction conditions that involve pressure and lower temperature
- use a solvent that has a minimal impact on human health and the environment such as water-based solvent
- improve selectivity and reduce waste and emissions from industrial processes
- design chemicals that have low toxicity to the consideration of security aspects.

RESEARCH METHOD

This research used a case study design. Hair, et al. (2007) states that a case study is the description documented from a person, a group, organization or specific condition. Individual or group behavior, reaction, response and effects toward others is compared then described extensively to get a conclusion.

This study used documentation, interview and direct observation. The main document was *Dokumen Pengelolaan Lingkungan* (DPL), which covers industry's activities, information of industry's environment quality, and the way to manage waste inside the environment. The observation conducted as a part of case study's protocol. Moreover, in-depth interviews and probing technique were conducted to gain the expert's insight. All the data recorded.

The unit analysis was organization, where as the unit of observations were individuals in three departments: marketing, technique, and environment. They were parts of the latex gloves production process, the marketing staff, electric engineer in technique department, production technician and K3 environmental staff. The primary and secondary data collected were further analyzed.

Hair, et al. (2007) states that validity in qualitative study is how far the qualitative discovery represents studied phenomenon accurately. In this study, construct validity was used, that is, multisources of proof with three keyinformen in three different departments

(technique, environment, and marketing). Besides, study protocol was used to develop the database.

RESULT AND DISCUSSION

ALO entered the glove business in 1988. This company is one of manufacturing companies engaged in rubber and vinyl gloves production. The founder has a clear vision for the development of eco-friendly latex and vinyl gloves. Latex gloves, made from natural latex rubber, contain chemicals that are safe and resistant to acid compounds, alkalis, and detergents. Latex film provides flexibility and it cannot tear. In addition, latex also can pull through biodegradation and it is environmentally friendly. Vinyl gloves are made from Polyvinyl Chloride (PVC). Vinyl gloves provide flexibility and convenience with the formulation to make smooth vinyl. These gloves are ideal for individuals who are allergic to natural latex proteins. Vinyl gloves also have resistance to acid and alkali compounds, as well as having anti-static properties.

In producing rubber and vinyl gloves, ALO observed the existence of increasing global demand on environment-friendly facemask. Therefore, the company developed a new product line, 3-ply disposable facemask that applies the quality standards. ALO has been certified ISO 9001 in its efforts to improve efficiency in operation and customer service. Furthermore, ALO has also renewed its ISO 13485 certification to continuously maintain the global quality standards. It also earns CE certification and FDA 510k which increase the reputation of the company as an excellent medical device manufacturer.

The Implementation of Internal Marketing Regarding the Waste Handling: First Research Issue

To optimize internal marketing, the company must have positive impact on the labor absorption from communities close to the company operation. ALO has good relationships with the neighborhood residents of Depok, Sukmajaya Sukamaju District and has the following impacts:

- The presence of ALO improves on the welfare of society, as most villagers Sukamaju become employees in ALO

- The operation of the plant provides an opportunity for local community members to be active in the informal sector, such as running shops and small grocery stores for daily necessities which boost the economy of local communities. The relation between company and community is good enough. People do not feel disturbed by company activities, although they expect no activities cause negative impacts, such as noise or the disposal of industrial liquid waste that may contaminate the surrounding environment
- ALO provides regular health service for employees
- The company provides a canteen and 15 toilet facilities for its employees
- ALO implements community programs such as social assistance to the underprivileged community members and improves public facilities in Sukamaju, Depok.

Furthermore, ALO has fulfilled the local regulations and conducts the social audit periodically. Its foreign customers (wholesalers) usually require social audits by appointing a third party. However there was an occasion where by an internal social auditor was asked to audit the company. The social auditors were researchers from LIPI (Indonesian Institute of Sciences). Earning the SR8600 certification indicated that ALO fulfilled its social responsibilities criteria, in terms of: fire extinguishers, toxic products, machineries and heavy equipments, electrical installations, medical care and equipment to support health; refrain from employing underage workers, interview with employees; working hours and wages which focused on Human Rights.

ALO did many activities to meet the needs of its customers. Taking into account the articles of ISO 14000, the company had engaged in more practical matters in its production processes to be in line with regulations, such as preventing toxic gas generated from the production process (CO and H₂S) by using water condenser.

To create superior customer value, the company carried out in-house experiment and research. The management encouraged employees to find out and solve problems. Those who were not suitable for the job are transferred to an uncritical area which did not

negatively impacted on the process of innovation and continuous learning.

The above mentioned results showed that in fulfilling social responsibility, the followings were worth considering: internal marketing, performance of the management, employee's corporate learning, and corporate social responsibility. The linkage among variables will be elaborated through propositions.

The Implementation of Societal Responsible Marketing in All Manufacturing Process through Defensive and Offensive Societal Responsible Marketing: Second Research Issues

Defensive societal responsible marketing of a company aimed at protecting the excellent position of its brand. ALO was struggling to provide a positive image in the market by giving clear information to its customers on how to dispose the products properly.

In addition, it also focused in strengthening good relation with its stakeholders such as: customers, suppliers, employees, and managers. To prove it, ALO provided clear explanation and information on the gloves packaging, so that the stakeholders believed that the gloves were already fulfilled the requirements, such as: how to use, the advantages over substitute products, the raw materials, size, and how to dispose the gloves. To maintain the trust of consumers and workers, ALO used not harmful raw materials and auxiliary materials in the manufacturing processes. In producing latex gloves, 99.5% of the materials used in were powder and liquid form, such as: calcium carbonate, Calcium Nitrate, Antioxidant, Accelerator, Sulphur, Zinc Oxide, Dispersing and wetting agent, Emulsifier, Caustic Postach, Corntrach, Casein, Silicone, Antiform, Triform X-100, and Ammonia. Raw materials and auxiliary materials for vinyl gloves were PVC Resin, DOA Dioctyl Phthalate, Dioctyl adipate DOP, DINP Plasticizera, Plasticizera PVC, PVC stabilizers, oil Soyabeam Epoxy, PVC Additives, and Catton Flock line. Considering that several of those materials were toxic and corrosive, ALO required employees to follow the safety standard by using masks while taking the materials from the warehouse and involving in production process.

ALO also adopted offensive marketing strategy in creating a competitive advantage by using the green

and environmentally friendly technology. The key respondent stated this by showing the whole catalog of ALO depicting societal responsible marketing. For implementing the offensive societal responsible marketing, the company needs to perform eco-efficiency that creates a competitive advantage. Eco-efficiency could be achieved through reducing waste, efficient use of raw materials as well as energy. ALO implemented recycle, reuse, and recovery outcomes for each production, performed efficiency programs to reduce the ratio of 1/0 with the efficient use of energy and equipment. To improve efficiency, ALO replaced mercury lamps with fluorescent lamps, minimized the use of lights and engine at 19.00 to 21.00, carried out maximum production in the morning, and also used natural gas instead of coal.

The results showed that in fulfilling the societal responsible marketing, the defensive societal responsible marketing and offensive societal responsible marketing are needed. The linkage among variables will be elaborated through propositions.

Integrated Marketing and Innovation Management for Value Creation as the Tool: Third Research Issues

Every company is aware of the importance of innovation management in order to survive in the global competition. Innovation happens in many ways. One way of doing it is by creating eco-efficiency in waste. ALO created a system that solid, liquid, and gas waste could be prevented.

For air pollution (gas), ALO used pollution controls by installing water condenser to prevent harmful air emissions. Moreover, the company also minimized the use of coal that causes harmful emissions in the air and maximized the use of natural gas.

For solid waste, ALO recycled residual of latex production by selling it to recyclers to be converted into other products that were more valuable and usable. One of the key respondents said the solid wastes were unused packaging cartons, cardboard and latex sediment derived from the production processes.

The two kinds of the liquid waste were the waste after the production process and the waste from toilets. For waste after the production process, the key respondent explained that ALO used its own

sewage-treatment facility. It separated with nine tubs that are mixed with lime and run with the compressor between rubber and water. Then, it processed from nine tanks and flows into the cooling tower, later on could be discharged into public sewers. Moreover, ALO performed laboratory testing for liquid waste every six months. For liquid waste from toilets, ALO used standardized septic tanks. The regular tests are performed in the laboratory.

Besides handling the waste, ALO also undertake energy efficient innovations and developed a sustainable chemical industry to achieve the green chemistry condition. The energy savings was currently implemented in its operation. The easy way to implement it was to turn off of lights or air conditioning while none of the worker inside the rooms, workers who work near windows did not switch the light on during the day, the workers did not run pumps on at 18:00-23:00, kept the air-conditioned rooms close, checked the lights that forgotten to be turned off during the day in the hall, streetlight and park light.

In developing the green chemistry condition, ALO increased the public awareness and professional through the green environment and the health environment. As the implementation, the company began to implement a waste minimization programs, used the environmental friendly technologies and used tools such as chemical principles green to reduce the environmental that could give impacts after chemical industry operations.

The above mentioned results showed that in integrated marketing and value creation, the followings were worth considering: the market orientation, the eco-efficiency, the application of integrated marketing management, the innovation management, and the application of green chemistry management. The linkage among variables will be elaborate through propositions.

Taking into account the above mentioned results, 14 propositions are proposed that leads to a model, as follow:

- Proposition 1 : Internal marketing influences the performance management
- Proposition 2 : Internal marketing influences employee's corporate learning
- Proposition 3 : Social responsibility influences the defensive societal responsible marketing

- Proposition 4 : Social responsibility influences offensive societal responsible marketing
- Proposition 5 : Integrated marketing influences market orientation
- Proposition 6 : Integrated marketing influences eco-efficiency
- Proposition 7 : Integrated marketing management influences innovation management
- Proposition 8 : Application performance management influences the green chemistry in the company
- Proposition 9 : Learning of employees in the company influences the green chemistry
- Proposition 10 : Defensive societal responsible marketing influences green chemistry
- Proposition 11 : Offensive societal responsible marketing influences green chemistry
- Proposition 12 : Market-oriented company influences green chemistry
- Proposition 13 : Application of eco-efficiency influences green chemistry
- Proposition 14 : Management of innovation in the enterprise influences the green chemistry

CONCLUSION AND SUGGESTION

Conclusion

The application of social responsibility ALO is by recruiting mostly Sukamaju villagers as its employees. ALO applies internal marketing related to the environmental sustainability, by providing good training and guidance in recycling and using eco-efficiency engine.

ALO fulfills requirements of its stakeholders, by making bio-degradable gloves and applying eco-efficiency industrial activity; conducting periodic health examination for employee; supplier offers using the machines efficiently and then produces more output, and for local communities, implement community programs around the plant environment such as social assistance to the underprivileged population and improvements public facilities in the village of Sukamaju.

ALO adopts the defensive and offensive societal responsible marketing aiming at protecting the excellent position of its brand, creating the positive

image, using raw materials and auxiliary materials that are not harmful to consumers and employees in its manufacturing processes. The implementation is applying an eco-efficiency activity with continuous treatment to reduce waste and using raw materials as well as in energy efficiently to create competitive advantage. ALO produces environmentally friendly products and quality. Integrated marketing form is directed in accordance with the statement of the planning who determined more innovation in energy efficiency and the head of production who candidly convey that societal responsible marketing is a form of social responses to consumer demands.

Suggestion

For the suggestions, top management will do the communication process and also all stakeholders who have the capacity to share knowledge of the environmental system. Later on, the company can create a recycling system that can be learned by the employee to manage the solid waste. So that the workers can help the company to create competitive advantages and also gives more profit to the company. For further research, the study can gain the information regarding the effective recycling and the way to provide competitive positioning within the companies. ALO continues in striving to meet all of the articles of ISO 14001. One of the ways is to fulfill the Environmental Management System (EMS) as stipulated in the ISO 14001 to form a competitive position in global competition.

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