

CHAPTER V

RESEARCH FINDINGS AND ANALYSIS

This chapter presents findings from the qualitative, in-depth interview research and observation of five large EE factories located in the central provinces of Thailand. It describes the negative and positive features of the plant locations, surrounding environment, corporate structure, as well as the influence of export markets on corporate CSR implementation and environmental management. For confidentiality, the five EE manufacturers shall be referred to by letter as Case studies A, B, C, D and E.

5.1 Background to the Case studies

Interviews were conducted with managerial personnel in various departments at each of the five selected factories, including administration, production, logistics, general and environmental management. Case study A was based on information collected from two interviewees: one from human resources and the other from the environmental management department. For Case study B the respondent was a manager in the logistics and services department whose diverse responsibilities encompassed facilities and industrial engineering research & development (R&D), plant support and maintenance, as well as physical and material distribution and planning. Data for Case study C was obtained from a key environmental engineer at the factory, and from a plant manager on trade-related matters. For Case study D information was obtained from both the special products manager at the plant's head office, and the factory administration manager responsible for environmental management. Finally, the respondent for Case study E was the factory's general manager in charge of operations and corporate management.

Field research interviews were conducted over a three-month period from September 25th to December 20th 2007, and primary data was gathered from a single interview with each respondent that lasted approximately 1.5 hours.

The five manufacturers that were selected as case studies include two multinational corporations (MNC), one transnational (TNC), and two Thai-owned corporations. The difference corporate structure resulting in a difference corporate policies, COD and management structure. In Case study A, a Japanese TNC had established a subsidiary¹ as well as manufacturing plants in Thailand, to manufacture products for export worldwide and to act as a regional hub for Southeast Asian markets. In case studies B and C, MNCs were formed through merger and acquisition² with existing Thai manufacturers, consequently bringing corporate governance in-line with parent company policies while maintaining existing management executives and decision-making authority. This structure lends itself to enhanced business capabilities through technological and financial transfer.

In each of the five case studies, key management executives are Thai citizens whose possess decision-making authority for the best interest of the corporation.

All five manufacturing plants for the case studies were visited to gather data and to assess air, water, and waste management practices. Due to time constraints on the part of the respondent for Case E however, although a thorough interview was conducted on-site, it was not possible to observe waste management practices at that plant.

The Case study A factory is located on an industrial estate, while the remaining four case study manufacturers are located on private grounds with

¹ A subsidiary is a corporate entity that is created and controlled by a bigger and more powerful entity. The controlled entity can be called a company, a corporation, or limited liability company, and the controlling entity is called the parent company.

² Merger & acquisition is a term that refers to the corporate strategy of buying, selling and combining different corporations to improve financing options, or to help a company grow in a given industry without having to create another business entity.

convenient proximity to main roads. In terms of the latter four factories, it is important to note that surrounding residential and commercial areas developed gradually after the plants were established, thereby imposing additional social and environmental responsibility pressures on these manufacturers. According to the interviewees the selection of plant location is in accordance with corporate policies.

In contrast with the aforementioned cases, being part of an established industrial estate provides manufacturers like Case A with a supportive industrial infrastructure and the opportunity for such businesses to purchase pre-zoned areas³ for their factories. These estates also feature localized environmental controls that are specific to the needs of a particular industry, thereby helping to facilitate manufacturing operations while also controlling the social and environmental impact of industrial activities. For example, the estate must ensure water pollution controls as required by law, and develop a central water treatment system to process the water used by all factories on the property. In turn each manufacturing plant on the industrial estate will have to absorb a monthly fee for this service, in addition to the cost of its own internal environmental management system. This estate environmental management fee is determined by the amount of pollution from each plant that the central treatment system is required to process. Depending on the nature of the enterprise therefore, operating on an industrial estate can be expensive.

Case study A is the only plant of the five considered here that is located on an industrial estate, as directed and financially supported by its foreign head office, in order to best minimize environmental impact. The MNC cases here that were formed by merger and acquisition with well-established Thai manufacturers had never operated as part of an industrial estate. Respondents at these companies asserted that it was unnecessarily expensive to operate on industrial estates because their factories were independently capable of being environmentally and socially responsible (e.g. Case D). Furthermore, not being part of an industrial estate provided greater

³ This includes legal rights on the land which one has purchased for one's factory, but does not include the estates common areas and facilities such as roads and green spaces.

flexibility in choices of location for each business, as well as better options for future corporate expansion.

On the other hand, plants that were not part of an industrial estate expressed concerns over rising costs associated with increasing social and environmental responsibilities to other property developments in the areas surrounding their factories. Case B for example, was established in a remote location more than ten years ago, but has gradually encountered increasing social and environmental pressures from new residential and commercial activities located 'next to the plant'. Management has consequently been obliged to replace the factory's original surrounding concrete walls with more transparent fencing that is lower in height and provides new residents with a less obstructed natural view.

5.2 Framework for Analysis

The analysis is based on the five case studies, the EE manufacturer's perception of the CSR concept, and the impact on industry of the following key factors: government regulatory efforts, social pressures, and the role of buyers and manufacturers. Most importantly, the rationale for implementing CSR policies is considered, as well as obstacles encountered in the course of such implementation. Environmental management practices are examined to demonstrate that business reflects purposeful social and economic behavior based on rational choice theory: that action is directed by choices governed by a system of aims or goals and incentives (Heckathorn 2000). Manufacturers' rationale is assessed from the perspective that all action is fundamentally 'rational' in character, and that people calculate the potential costs and benefits of any action before making a decision (Scott 2000).

The in-depth interviews were conducted with following objectives:

- To ascertain each respondent's level of CSR comprehension.
- To examine the views on effectiveness of the roles and responsibilities of each key player.

- To determine the level of each manufacturer's environmental awareness and sense of corporate responsibility.
- To identify what factors affect each manufacturer's sense of environmental responsibility.
- To examine what manufacturers do to increase their environmental efficiency.
- To identify the obstacles faced by manufacturers in the implementation of more efficient environmental management strategies.

Interview questions were divided into four sections in accordance with the conceptual framework for key players, with a variety of discreet questions and an additional prelude section on CSR comprehension. Not all questions were answered by respondents however, due to sensitivity about confidential information, and some answers covered more than one question.

5.3 Interview Questions

5.3.1 Re: CSR Comprehension

- 5.3.1.1 In your view, what is CSR?
- 5.3.1.2 What is your opinion of CSR?
- 5.3.1.3 What influences CSR the most?

5.3.2 Re: Manufacturer's CSR and Environmental Management

- 5.3.2.1 To what extent do you think EE manufacturers impact the environment in terms of water, air and the creation of waste products?
- 5.3.2.2 To what extent do you feel that EE manufacturers are interested in environmental protection and conservation?

- 5.3.2.3 What factors influence manufacturers in terms of their environmental responsibility?
- 5.3.2.4 What factors influence the efficacy of a manufacturer's environmental protection policy?
- 5.3.2.5 What are the most important factors in implementing a corporate environmental code of conduct (COD)?
- 5.3.2.6 How does factory location impact environmental COD?
- 5.3.2.7 Are factory employees affected by environmental problems?
- 5.3.2.8 How effective are EE manufacturers in terms of implementing their COD?
- 5.3.2.9 What are the obstacles for manufacturers in protecting the environment?
- 5.3.2.10 Overall, to what extent do manufacturers contribute to environmental conservation?
- 5.3.2.11 In your opinion, what do you think manufacturers can do to further help protect the environment?

5.3.3 Re: Government Rules and Regulations

- 5.3.3.1 Does your factory know the official rules & regulations (R&R) governing corporate environmental responsibility and practices?
- 5.3.3.2 To what degree does your factory comply, and why or why not?
- 5.3.3.3 How effective are environmental rules and regulations?

5.3.3.4 To what extent do environmental R&R affect your operations?

5.3.3.5 What is the government doing to promote and encourage environmental responsibility beyond the current R&R?

5.3.3.6 In your view, how do you view the current R&R and the government's role in their implementation?

5.3.3.7 What would you like government to do with regards to environmental protection and conservation in the industrial sector?

5.3.4 Re: Social Pressures and Civil Society

5.3.4.1 Do you work with other organizations regarding environmental issues? What are the names of these organizations? In which areas, what kind of projects and why?

5.3.4.2 Do you receive complaints regarding your operations? What kind? And from whom?

5.3.4.3 How do you handle such complaints?

5.3.4.4 In the future do you think such complaints will increase or decrease? In what areas?

5.3.4.5 To what extent are your complainants satisfied with your management of their complaints?

5.3.4.6 How do you keep your clients/customers satisfied with regards to your environmental policies?

5.3.5 Re: Buyers and Global Market Pressures

- 5.3.5.1 In what areas would your buyers like to see you take greater environmental responsibility?
- 5.3.5.2 Are your international or your domestic buyers more concerned with environmental issues, and why do you think this is?
- 5.3.5.3 Are environmental issues a factor for your buyers when purchasing from your company, and do they have specific requirements beyond those of their domestic regulations?
- 5.3.5.4 For which of your buyers is CSR a factor in buying your products?
- 5.3.5.5 Are you aware of the reasons for your buyers' concerns?
- 5.3.5.6 Which market has the most stringent regulations and how do you respond?
- 5.3.5.7 Is following regulatory requirements/requests your buyers' worth the level of your investment?
- 5.3.5.8 Are your buyers willing to accept higher prices due to increased costs in implementing CSR policies? If not, do you receive any support from destination market governments for your efforts to do so?
- 5.3.5.9 What exporting countries are your main competitors and do they implement CSR policies?
- 5.3.5.10 In the future will CSR be an important factor in developing countries and is it important in Thailand yet?
- 5.3.5.11 Does the global market force producers to implement CSR policies, and which market factors affect your operations?

5.4 Case Study A: Findings

Case study A is a subsidiary of a leading Japanese transnational company that produces a wide variety of popular consumer products, from home appliances and electronics to IT items. The majority of these products are manufactured and/or assembled locally in company-owned facilities in Thailand, which serves as the manufacturing base for southeast Asian markets. The corporation strives to produce the best possible products to serve its consumers' needs, while operating under a "green" environmentally-friendly corporate philosophy that stresses conservation and management efficiency.

Manufacturer's Profile:

Export proportion: 90 % of production

Services provided: Manufacture of international brand E & E consumer products

Export markets: Japan, EU, Russia, ASEAN, the Middle East (e.g Egypt)

Factory areas: Located on an industrial estate with a total area of 140,000 sqm:

Production area 45%, Roads & other 30%, Green area 25 %

Employees: 2,900 employees, 50/50 Male/Female, Sub-contractors 1,100

Average age 25-35, Education: High school 40%, Post-secondary 60%

Two interviews with the following management personnel were conducted and are presented below:

Mr. H : Human resource management. Interviewed on Nov. 17th, 2007.

Mr. E : Environmental division. Interviewed on Nov. 22nd, 2007.

5.2.1 Re: CSR Comprehension

Both interviewees perceived CSR as a duty rather than a responsibility in response to consumer demands requiring manufacturers to develop innovative green products and efficient production processes. They officially embraced the concepts of morality, personal awareness and environmental consciousness as key factors

influencing the CSR policy and practices of manufacturers. Case A interviewees stated that their corporation was genuinely committed to the welfare of society and the environment overall, as demonstrated by responsible corporate practices beyond the production of quality goods.

5.3.2 Re: Manufacturer's CSR and Environmental Management

5.3.2.1 According to the respondents, the level of environmental impact depends on the industry, products and management control. Although the manufacture of EE products does not typically involve procedures that are highly degrading to the environment, stringent management control throughout the production process was identified as an important means of reducing the manufacturer's environmental impact.

5.3.2.2 To find and use the best measures, each production process is carefully evaluated to determine how to minimize its environmental impact. Air pollution generated from color processing for example, is filtered through a waste scrubber system, while separate garbage bins are used to dispose of plastic, paper, metal and hazardous materials. Such processes can be considered as part of LCA but according to Mr. E, "LCA focuses on the product and not the process". At their company the internal pollution emission benchmark has been set below the legal allowance in all areas, especially to reduce chemical and non-chemical waste generation. Case A has been shown to have the most stringent internal pollution control policy, requiring the subsidiary to submit monthly reports to the parent company in Japan detailing the emission levels of byproducts such as CO₂, and to undergo annual audits of pollution data. "These internal benchmarks are very difficult to meet" (Mr.E). Environmental responsibility in Case A extends even further to audits of third parties who are contracted to dispose of and recycle e-waste.

5.3.2.3 Factors that influence manufacturers in terms of environmental responsibility are awareness and the requirements of importing markets. Increasing

domestic environmental problems, worldwide natural disasters, as well as concerns about climate change have made individuals as well as corporations realize the cost of damaging the environment. Out of such awareness, countries like Japan, the E.U. and the U.S.A. have established environmental regulations which exporters must comply with in order to sell industrial products in these major markets. As noted by Mr. E and Mr. H, "Don't do – can't sell". However, according to business rationale, awareness of corporate policy by buyers as well as company employees, and financial support for environmentally-conscious practices, determines the level of participation and cooperation with green initiatives (Mr. H). Thus awareness is a critical factor that influences manufacturer production guidelines and corporate environmental responsibility

5.3.2.4 Factors that influence the outcome of manufacturer environment management are the level of financial investment in best practices, and employee cooperation. Activities involved in creating green products include infrastructure and technological development, as well as human resources management to ensure cooperation. All of the above initiatives involve substantial investment costs that directly affect corporate income, making it all the more important to effectively encourage employee cooperation with management policy. "Our beyond compliance environmentally-friendly infrastructure cost over 10 million baht, which the parent company provided and gave us free reign to use," says Mr. E.

5.3.2.5 Although corporate investment is vital, the most important factor in implementing effective COD is employee cooperation. "In our case we have a coherent environment protection policy and full financial support, therefore our main challenge is ensuring employee cooperation in order to make our COD efficient" Mr. E. The human resources management necessary to accomplish this is not easy especially with as many as 2,900 employees. There are those who do not know what to do, as well as those who understand and are fully willing to cooperate with corporate policy, but some employees simply do not comply in spite of both incentives and disciplinary measures that are in place. For example, although smoking areas are provided with penalties for smoking elsewhere, cigarettes butts are

still found in unauthorized places everyday according to Mr. H. In addition, having large factory areas makes the efficient monitoring of employees very difficult.

Awareness through knowledge-building therefore, is the main principle in gaining effective employee cooperation from all levels, in addition to advocacy, incentives and disciplinary measures. In Case A for example, informational posters and notices on environmental facts, impacts, measures and outcomes are posted around the factory. Alternatively, smaller signs that say "Help save energy. Turn off 1 lamp to reduce Co2 by 120cc" are placed on light switches. As an incentive to further consciousness, the company also gives each employee a plant to take home every World Environment Day¹. Each factory division must submit a monthly environmental performance report, and top management executives also conduct regular random inspections to check for organic and inorganic environmental contaminants.

5.3.2.6 The Case A manufacturing plant is located in an industrial estate that provides operational convenience thanks to industry-friendly surroundings. As Mr. E notes, "There is no residential community in our surrounding environment" which substantially reduces concerns about manufacturing effects on the public. The main difference for factories that are not located in an industrial estate is the level of impact and control. For example, the industrial estate has a central water treatment facility which, when combined with the independent treatment from a plant on the estate, results in less pollution. Nearby residential areas can create pressures on manufacturers to have more stringent pollution controls because there is less room for mistakes. However, selecting a factory location involves extensive considerations such as associated costs and corporate ownership. "Some manufacturers already have their own land, and being on an industrial estate has additional costs" Mr. E.

¹ World Environment Day held on June 5th every year was established by the United Nations General Assembly in 1972 to promote worldwide awareness of environmental issues, and to encourage political action.

5.3.2.7 Employees were found to be affected by environmental issues depending on the production process they were involved with (e.g. noise pollution from molding machines, and exposure to potentially harmful chemicals used in manufacturing). As required by law however, manufacturers are responsible for putting appropriate measures in place to ensure employee health and safety (e.g. by providing ear protection equipment and regular health checks).

5.3.2.8 While Case A's environmental COD is the most stringent of all the case studies considered here, the COD of EE manufacturers remains a matter of concern. This is especially true among small-to-medium size factories due to lack of awareness, limited investment in such protocol, and inconsistent government enforcement of regulations. Small factories in the area where the researcher lives for instance, regularly dump all their industrial and non-industrial waste in a hole they have dug behind their premises, seriously damaging surrounding soil quality. Although residents exposed to these potential toxins have shared their concerns with local officials, according to Mr. H the cost of bribing these authorities to ignore this problem remains much lower than the cost of installing effective environmental management systems.

5.3.2.9 The main obstacles stressed by Case A are the financial capability and employee cooperation. Although the company has awareness but without the two factors it is impossible to effectively implement CSR policies. Employee awareness directs cooperation of which makes policy and COD possible, and investment postulate structural improvement as well as R&D (Mr.E,H).

5.3.2.10 The extent to which manufacturers can contribute to environmental conservation depends on each manufacturer's awareness, corporate financial capabilities, and the enforcement of government regulations. Small and medium size factories often do not know what to do², and/or they do not have the means to

² As per interview conducted with The Industrial Environment Institute of FTI on September 27th, 2007.

implement effective environmental protection strategies. According to Mr. E, government subsidies and support therefore, would seriously enhance the capabilities of such manufacturers to comply with regulations and recommended best practices.

5.3.2.11 The minimum contribution that manufacturers should make is full legal compliance. There is an urgent global need for all manufacturers to pay attention to environmental issues and to commit to environmentally-friendly manufacturing practices. In Thailand there continue to be numerous cases of illegal dumping of industrial toxins and polluted water, thus it is important that everyone do their part to help protect the environment.

5.3.3 Re: Government Rules and Regulations

5.3.3.1 Because it is imperative to be aware of government rules and regulations (R&R), Case A has established a legal division to oversee such matters: to stay abreast of R&R updates through Ratchakitcha³ membership, to evaluate the relevance of any changes, and to officially notify relevant departments and divisions. Unfortunately however, the government does not effectively communicate R&R to manufacturers, thus requiring them to make own efforts remain aware of any regulatory updates. Furthermore, while there is little to no governmental support for manufacturers to institute new policy changes, factories are held responsible for failing to do so.

5.3.3.2 Case A's corporate policy clearly supports full compliance with domestic R&R. Nonetheless, while the company does its best to comply with most environment protection requirements, some laws have been found to be conflicting and unrealistic.

³ www.ratchakitcha.soc.go.yh (available in Thai only). Members will be informed of government policy changes and R&R announcements.

5.3.3.3 Generally speaking environmental R&R are inadequately effective: the authorities only require an annual report with no regular inspections for monitoring on-site measures and controls. Thailand's unstable political situation at present also affects environment policies. With newly inaugurated governments, environmental policies are often changed in terms of both regulatory content and the State's roles and responsibilities, resulting in the lack of coherent long-term action plan. At the national level for instance, there is presently no clear policy for reduced energy consumption to alleviate global warming, in terms of regulations, directives, or information on how to obtain carbon credits.

5.3.3.5 The current Thai government provides some support in the form of awards and incentives, but it offers little in terms of knowledge-building activities for manufacturers. The serious problem of global warming for instance, is caused by excessive energy consumption, but there is no direction or support from the Ministry of Energy to help manufacturers reduce their usage. Case A has independently undergone extensive infrastructural changes to manage this issue, and to participate in various environmental award campaigns. According to Mr. E, this has been done under the belief that such initiative will not only enhance corporate competitiveness in the market, but will also encourage other manufacturers to follow suit.

5.3.3.6 The Thai government's role is to govern, monitor and control, but in terms of managing environmental issues, it is also imperative that the government supervise manufacturers and provide more support such as subsidized technology, R&D, as well as knowledge-building. Says Mr. E, "I know many SME manufacturers that do not have the ability to establish efficient internal environment protection systems, and only a few large corporations can do so with transparency."

5.3.3.7 The desire for a coherent government policy on the environment and subsidies for manufacturers - especially SMEs - to improve and control their environmental impact, is clear. Such a policy should address energy consumption with regards to global warming, provide a supporting action plan, control oil and electricity prices, and support the development alternative energy sources (e.g solar).

5.3.4 Re: Social Pressure and Civil Society

5.3.4.1 The corporation in Case A has chosen to work with other organizations on environmental matters that require support, in recognizing that it cannot perform efficiently alone. Initiatives include those which provide for technological education and knowledge-building for instance, as well as an independently-organized annual corporate 'forest planting' campaign that has been on-going for 10 years now.

5.3.4.2 Complaints with regards to 'false product quality' are considered common in the EE industry. Case A has never received direct complaints about its negative environmental impact according to Mr. E. It has received such feedback indirectly however; through the industrial estate's investigations of water pollution claims by a nearby community claiming that fishes died in common canal, and have also been informed of employee noise pollution and air pollution from boiler smoke (Mr. H). Complaints at Case A are handled in accordance with ISO 14000 specifications to take action for correction explained Mr. E. It is the responsibility of the estate however, to receive and handle complaints about its industrial activities by conducting assessments, and by facilitating communication between manufacturing plants, the appropriate municipal government representatives, and the community (Mr. H). Although the cause of complaints has often been found not to be the result of their industrial activities, as a matter of policy Case A has earnestly cooperated with inspections and has taken whatever corrective measures were necessary.

3.3.4.6 Case A builds a positive consumer impression and corporate image by having its own 'green' logo as a guarantee of energy saving products, environmentally-friendly production processes, and the safe disposal of waste byproducts. A waste buy-back system was also established due to Japanese legislation on the parent company, to promote recycling, the appropriate disposal of waste, and also act as a marketing tool to stimulate public environmental awareness. Such messages are communicated effectively through advertising and other mass media which are highly visible but also very costly (Mr. E).

5.3.5 Re: Buyers & Global Market Pressures

5.3.5.1 Many international buyers and trading partners are concerned first and foremost about product pricing, rather than environmental or social issues. Consequently, manufacturers must be able to offer their customers competitive prices while also meeting regulatory production requirements.

5.3.5.2 It is apparent to Case A that many international buyers are also concerned about environmental issues, as evidenced by the regulations importing countries impose on corporations (e.g. having a waste buy-back system) and the increased public demand for environmentally-friendly products. Such pressures are brought to bear by the purchasing power of end consumers who are willing to accept higher product prices due to increased costs in producing green products. In Thailand however says Mr. E, products are being sold cheaper which affects the quality of both original manufacturing materials and production processes.

5.3.5.3 Manufacturers are subject to the mandatory environmental requirements of importing countries, such as RoHS, as well as additional product specifications needed by buyers. At the international level, environmental issues are factors in purchasing or importing EE products. In Singapore and Taiwan for example, manufacturer facilities as well as overall management are audited prior to a purchasing order, to determine the factory's abilities to meet environmental and other specific requirements.

5.3.5.4 Buyers from Japan require CSR as a factor in purchasing products, based on specific corporate requirements such as a coherent company policy covering employee health, safety and welfare, community involvement, as well as philanthropic activities.

5.4.5.5 Manufacturer management personnel are shown to have certain perceptions of international buyers' concerns for environmental issues. According to Mr. H, this is related to each individual's level of education and national experiences

from historical industrialization development, while Mr. E believed that these perceptions were based on both national regulations as well as public awareness described in 5.3.5.3.

5.3.5.6 Case A found the Japanese market to have the most stringent regulations, mainly due to the difference in conformity assessment and monitoring systems there, compared to the self-declaration system in the USA and EU. The business priority in Japan is to survive “As a manufacturer we survive based on sales and profits, therefore we must do what is needed to sell” (Mr. E & Mr. H).

5.3.5.7 In following buyer’s requirements Mr. E felt that the investment was worthwhile since it helped to increase market share, trust from buyers, consumer satisfaction and product branding. Furthermore, Case A also found that environmental management systems can help reduce production costs by maximizing efficiency while enhancing competitiveness in the world market.

5.3.5.8 Recalling that Case A products are priced differently for international and domestic markets implies that international buyers are indirectly accepting higher prices due to the increased costs associated with implementing desired CSR policies. As noted by Mr. E “Currently our buyers are aware and accept the price of our products but nevertheless still face intense competition. We must therefore be able to produce environmentally-friendly quality products at competitive prices”. If the governments of importing countries like Japan do provide support to manufacturers with CSR in terms of import tax relief.

5.3.5.9 Case A’s main competitors are based in Korea and China respectively which are believed to implement CSR to a certain level because “They have the same clients which means that they must be subject to the same requirements as us” (Mr. H). Although China’s advantage is low prices, manufacturers there have problems delivering quality products. “China has not been open very long as a manufacturing country, and has developed this sector with inadequate attention to

environmental impact. Albeit domestic RoHS is in place there, but it is a less demanding action plan” (Mr. E).

5.3.5.10 In considering CSR it is clear that environmental issues will be an especially important factor in developing countries in the future due to the magnitude of continuous environmental problems worldwide. At present Thailand is at the forefront, but must continue to be an industrial pioneer in order to counter increasingly intense competition.

5.3.5.11 The global market mechanisms that influence manufacturers to implement CSR and environmental policies are competition, pressure as a result of accidents, and advocacy, but specifically ‘product specifications’ from importing countries and buyers because “Don’t do - can’t sell” (Mr. E & Mr. H).

Conclusion

Data from Case A revealed that global market pressures from importing countries and international buyers are the main CSR driving force on a TNC manufacturer operating in Thailand. The findings also suggest that domestic environmental regulations are at a lower standard than the international level, and that the majority of Thai citizens have less awareness as well as purchasing power for green products. According to Mr. E however, “I believe that buyers and consumers will accept higher prices as they increase their awareness of the environmental issues the world is facing. For example, I would buy home appliances with a No. 5 label because I know it is more energy efficient although it is more expensive”.

In order to stimulate public awareness in support of CSR and greener living, Thailand needs a coherent domestic environment policy. The government needs to effectively educate both the public and the private sector that the environment is at stake. As Mr. E. notes, “I never knew about the global warming problem until I started working here and had access to all of the information from our Japanese head

office. This kind of support is what Thailand lacks, not to mention information accountability”.

5.5 Case Study B: Findings

Case study B is a MNC created from a merger between an existing Thai electronics manufacturer and a transnational corporation from the USA and Japan. The production focus is exclusively on memory storage devices for products such as cell-phones, cars, printers, televisions, games and networking equipment. Management and corporate structure was transformed in accordance with the US headquarters policy, but the business has continued to be operated by the existing Thai management team. The group is publicly traded on NASDAQ and manufactures electronic products for Original Equipment Manufacturers (OEMs), including the top ten handset, consumer electronics and automotive OEMs around the world with four main manufacturing plants in the Asian region.

Manufacturer's Profile:

Export proportion: 100 % of production

Services provide: Original Equipment Manufacturer (OEM)¹

Export markets: Worldwide - ASEAN² 63%, EU 14%, USA 12% and Japan 11%

Factory areas: Production 30%, Green area 70%, total 45,000 square meters

Employees: 1,465 employees (84% in production), 57.5% female, Average age 25-35

Education: Masters degree or higher 8%, Bachelors 19%, Diploma 19%, High school 54%.

An interview with the Logistics & Services manager was conducted on December 20th, 2007 as well as manufacturing plant observation.

5.3.1 Re: CSR Comprehension

¹ OEM is a custom-made production according to specifications from the buyer including technical details, material input, design and packaging.

² China, Hong Kong, Taiwan, Korea, & Singapore

CSR is perceived as a duty directed by the multinational group policies with a focus on “Environment-Health-Safety” (EMS) issues. At Case B it is seen as a corporate responsibility not to have a detrimental effect on the environment, and to assist in development with an aim to over-perform legal performance requirements.

5.3.2 Re: Manufacturer’ CSR and Environmental Management

5.3.2.1 The level of environmental impact depends on the product and its production process, as distinguished by the materials used, the chemical substances involved, and the waste that is generated. Industrial air is filtered through a moisture barrier in conjunction with other processes. Water management involves separating industrial and other common-use water for reuse and appropriate treatment. A certified third party such as Jengo is contracted to recycle and dispose of sediment extracted from industrial air and water, along with e-waste. E-waste is separated, stored, and contracted out for disposal as well as offered on open auction to recyclers.

5.3.2.3 Factors that influence the manufacturer in terms of environmental responsibility are management vision and customer requirements. The corporate group has highly prioritized the environmental issue by developing a coherent policy and COD to continuously meet increasing consumers’ and buyers’ requirements.

5.3.2.4 Factors that influence the outcome of the manufacturer’s environmental management are investment capability and employee participation. Corporate CSR and environmental policies must be effectively communicated to employees in order to gain cooperation and justify the investment. Collecting garbage as part of an employee beach trip in order to stimulate awareness is considered an indirect investment return in the form of good employee health, happiness, high performance and loyalty.

5.3.2.5 The most important factor in implementing COD is employee cooperation and participation. The success of activities such as training, factory

maintenance, environmental campaigns and philanthropic activities largely depends on employee involvement. According to the respondent, "We already have the vision and full financial support to fulfill it, so the next step is to educate and train employees to be disciplined and environmentally responsible in order to perform". Case B believes in developing human capital by strategically building individual awareness as well as responsibility based on the ethical foundation of "What is right". There is a positive focus on knowledge, physical and mental health, as well as spirituality and social responsibility (morality). Various services and welfare are provided for employees including English language lessons, library access, training, gymnasium (free of charge), a clinic, eye-checkups, a basketball court, two tennis courts, ping-pong tables, a canteen with low-cost hygienic food, and an employee family day. Examples of disciplinary measures are corporate online ISO specifications for employee accessibility, remedial training and workshops, as well as small cards citing COD that must be held in hand as a reminder for each employee.

5.2.3.6 The current manufacturing plant was established by an existing Thai manufacturer on the outskirts of Bangkok which was deserted at the time, but in close proximity to commercial areas and main transportation routes. Since that time however, new development has brought residential homes right next to the plant, obliging the corporation to invest millions of baht to adapt to the recently inhabited surrounding area. The plant wall for instance, has been replaced with a lower transparent fence; small green areas with tall trees have been established along the inner side; new machines were installed as well as rovers to reduce the level of noise pollution that is already up to standard; a front garden was constructed with ponds, fish and a fountain to complement a new foot path that was opened as a common area for nearby communities.

5.3.2.7 Employees are minimally affected by environmental problems because most of the manufacturing operation is done by machines that only require trained personnel to operate. Training involves technological knowledge in machinery operation as well as safety procedures, in combination with external safety equipment such as ear and eye protectors.

5.3.2.9 Case B is one of Thailand's prominent pilot projects for CSR in environmental issues as recommended by interviews with EEI and FTI on September 25th and 27th 2007 respectively, as well as being quoted by other case studies. The factory enjoys full financial support for the implementation of policy from its corporate group as well as exceptional employee management schemes, and thus faces no obstacles in advancing its environmental protection program. In the words of the interviewee, "I am confident to say that we do not have any concerns, difficulties or obstacles because we have full financial investment from headquarters of millions of dollars (USD) per year, and we also have satisfactory employee participation. No one has opposed the implementation of these policies or resisted following suit so far".

5.3.2.10 The extent to which manufacturers can contribute to environmental conservation is based on the level of R&R compliance, which in turn depends on the collective efforts of all employees. Regardless of the size or nature of a company, if every manufacturer complies with domestic R&R, the path towards environmental conservation and protection will be far more promising.

5.3.2.11 It is imperative for businesses to understand that some investment must be made to sustain the environment and preserve the society in which we live in for future generations.

5.3.3 Re: Government Rules and Regulations

5.3.3.1 An EMS officer is responsible for overseeing legal issues by researching, collecting and updating R&R data to report at the EMS committee's monthly meeting. Case B is also subject to the more advanced US environmental regulations that govern corporate policies, such as COD requiring that all outsourced activities be contracted to a professional certified third party only. Transportation and shipping partners must be specialized in hazardous substances handling to prevent any damage outside the factory area, with regular audits of these services by the group.

The challenge to Case B therefore, is to comply with corporate policies. Again, some domestic laws and regulations have been found to contain unrealistic or inappropriate guidelines for implementation, that were perhaps drafted by inexperienced personnel.

5.3.3.3 Environmental R&R appears to be effective in controlling accidents, such as excessive pollution that might substantially affect the environment and local residential communities. Problems can also be brought to attention by media, and responsible polluters will be heavily penalized.

5.3.3.5 The government promotes and encourages CSR in the form of award incentives for campaign competitions, as well as recognition. However, there are no knowledge-building supportive activities or schemes for manufactures

5.3.3.6 As part of the growth of industrial activities in Thailand, the problems noted are inadequate monitoring inspections with too much flexibility, as well as too many inappropriate exemptions. According to the Case B manager, "The government authorities claim that they do not have enough personnel to be effective, however I believe they simply do not perform earnestly". Thai environmental R&R may not be at the same level as some foreign countries, but concerns stem from a lack of enforcement that is partially the fault of ambiguous regulations. Case B observed that certain legal requirements appear to resemble US regulations which are inapplicable in Thailand due to inexpedient technology, professionals and personnel in the government as well as the private sector. For example, one regulation states that the government is to perform real-time online monitoring of manufacturer waste water to measure 'Chemical oxygen demand'. At this time however, while Case B has already invested over two million baht to set-up the system, they are still waiting for the ministry to complete theirs.

5.3.3.7 It is urgent that the government promote environmental issues and tighten monitoring as well as enforcement systems to ensure compliance. The penalty system needs to serve its purpose as a meaningful punitive disincentive to negligent manufacturers. It needs to be applied strictly as per the case where a US authority

found that toxic chemicals leaked from a manufacturing plant had contaminated the soil, and heavily fined the company as well as revoking its operating license. Such cases for deterrence are certainly unprecedented in Thailand.

5.3.4 Re: Social Pressure and Civil Society

5.3.4.1 Over the past 10 years Case B has continuously organized independent projects such as their annual “Forest planting” campaign at Ratchaburi province. They have also collaborated with other organizations on various environmentally-relevant activities when opportunities have arisen, such as joining H.M Princess Sirinthorn’s project at Nann province, and a “mangrove planting” project at Bang-Kung. Socially, in addition to providing a wide variety of impressive resources for the welfare of their employees, the corporation also engages in regular philanthropic activities such as building schools, houses and restrooms in rural areas.

5.3.4.2 With the development of the surrounding environment residential communities have been built close to the factory leading to a conflict of interest and putting new pressure on manufacturers. Although Case B’s environmental performance has gone beyond domestic legal requirements, they have nevertheless received complaints about machine noise pollution generated approximately 50 meters from newly-developed residential homes. As directed by corporate policy, an investigation was conducted and solutions were proposed to the headquarters. In keeping with CSR, the corporation consequently invested over two million baht to completely eliminate this noise pollution, to the extent that no machine noise was heard during field observation.

5.3.4.5 Case B exists as a socially and environmentally responsible corporation, functioning effectively and harmoniously be part of the community.

5.3.5 Re: Buyer & Global Market Pressures

5.3.5.1 The group's corporate international buyers' main concern is to purchase low-cost quality products that meet their specifications on social and environmental issues. Thus, the manufacturer has to meet both the buyer's specific requirements and remain competitive on the open market.

5.3.5.2 Although Case B exports 100% of its production, the company appreciates that as international buyers are becoming more concerned with environmental issues due to increased regulations and public awareness, buyers have the purchasing power to impose additional requirements on manufacturers and suppliers.

5.3.5.3 In addition to the requirements of importing countries, buyers express their concerns on both social and environmental issues through product specifications such as the elimination of specific chemical substances, and manufacturer selection base on performance recognition as well as reputation. Specific issues and the level of responsibility demanded vary according to purchasers own interests, reflecting the development of CSR and environmental conservation movements at the international level.

5.3.5.4 Large corporations such as Sony Ericsson are initiating CSR requirements specifically as a factor in purchasing products, in addition to requiring environmentally-friendly operations. One of the group's corporate buyer's audit process went beyond the regular assessment of production lines to examine and evaluate the company structure and management systems: from policy and COD to governance for CSR implementation, and fiscal transparency.

5.3.4.6 The EU and US environmental regulations are respectively found to be the most stringent, due to advanced environmental regulations and public awareness. In the EU history and population congestion have shaped this development priority,

while the US has responded to growing civil society pressures. Furthermore, such demanding standards have been influenced by global warming effects that have captured corporate as well as public attention worldwide.

5.3.5.7 It is imperative to abide to buyers' requirements in order to sell products. Case B regards investment in CSR and environmental issues as an obligation. Nonetheless, the company faces challenges in a competitive market that requires technological R&D for product innovation, as well as cost-effective operations that will enable the manufacturer to reduce production costs while improving product quality.

5.3.5.8 Buyers are willing to accept "reasonable prices" due to meeting CSR and environmentally-friendly specifications from a wide selection of suppliers. Manufacturers therefore, must be able to comply as well as compete.

5.3.5.9 The group's main competitors are companies like Samsung and Intel (from Korea and the US respectively) that also practice CSR, due to the fact that they are subject to the same purchasing requirements from same potential trading partners.

5.3.5.10 In the past out-sourcing was practiced to reduce production costs but it was revealed that lower costs were due to human and environmental abuse, including extortion such as child labor. At present movements towards sustainable development are apparent in every part of the world. In the future social and environmental pressures from business corporations and importing countries will also help to relieve this problem in developing and underdeveloped countries.

5.3.5.11 The rampant global warming effect is of great concern to the world and thus has become one of the main global market mechanisms influencing CSR and environmental issues. As the manufacturer's main priority is to sell their products however, market requirements and competition remain the most influential mechanisms because those who don't do, won't sell.

Conclusion

Case B findings revealed that the requirements of importing countries and buyer product specifications significantly influence the corporate CSR and environmental policies that govern manufacturing activities. Commendable social and environmental practices of the MNC group revealed the fact that corporate policies through MNC are an effective mechanism to instill CSR in Thailand. The group's coherent COD and financial support enables its manufacturing plant in Thailand to perform efficiently, and establish Case B as one of CSR pilot projects in the Thai EE industry. Nonetheless, corporate vision and policy are subject to the market and its mechanisms, specifically customer demand and competition with regards to price and quality. One can conclude therefore, that global market pressure remains the main driving force for CSR implementation in Thailand.

5.6 Case Study C: Findings

Case study C is a MNC that was created in 2006 from a merger between an existing Thai electronics equipment manufacturer and an international investment group¹. The group employs as many as 9,000 people worldwide, with subsidiaries in the US and throughout Asia that provide testing and assembly services. The Thai manufacturing plant produces primary and secondary products for the group and its global trading partners, to produce EE finished products such as refrigerators, washing machines, and fans.

Manufacturer's profile:

Export proportion: 100 % of production
 Services provide: Manufacturer of electronic equipment
 Exporting markets: 100% production; USA 80%, EU 15%, Japan 5%
 Factory areas: Production 80 %, Green area 10 %, Other 10% total 11,000 sqm
 Employees: Over 1,000 employees, 70% female. Minimum education: High school, Diploma. Minimum height 155cm (fit for machinery use)

An interview with environmental engineer personnel was conducted on November 14th, 2007, in addition to observation of manufacturing plant environmental management systems.

5.3.1 Re: CSR Comprehension

CSR is perceived as the responsibility of the manufacturer to produce products with minimal environmental impact, as a means to contribute to environment conservation, a healthy society, and the welfare of employees. According to one respondent, CSR is a good and appropriate concept. "Businesses should not only aim

¹ Corporate culture and ownership resembles a publicly traded company featuring a decentralized management structure involving diverse stakeholders, with a board of directors and executive committees.

for profit, but should also give back to the society they are part of and help to sustain the environment for future generations”.

5.3.2 Re: Manufacturer’s CSR and Environmental Management

5.3.2.1 Every production process has an environmental impact which can be assessed based on the seriousness of the effects, frequency, and a consideration of regulatory controls.² Although the amount of waste generated may appear to be the most important issue, it is not necessarily a priority given an effective management system. When chemical substances are an essential element of production, it is much more difficult to determine appropriate restrictions. Case C has eliminated lead substances from its production processes, e-wastes are contracted to a certified third party such as Jengo or Entec for appropriate disposal and recycling, and as part of CSR paper waste is donated to the Friendly Earth Foundation.

5.3.2.2 The group’s priority is full legal compliance, with CSR policies strongly designed to perform beyond legal requirements in order to reduce environmental impact. Maximizing profit is not the sole corporate focus. Although Case C always had pollution control management strategies, in 1998 it was granted ISO 14000 certification status in conjunction with the implementation of CSR specific to environmental issues. Case C is currently part of the Ozone and Global Warming friendly project for choosing fire extinguishers that use a chemical compound that doesn’t damage the ozone layer.

5.3.2.3 A key factor that influences manufacturers in terms of environmental responsibility is awareness of the detrimental effects of manufacturing activities, and an appreciation of the important societal role that manufacturers can play to minimize such impact. Case C specifically demonstrated its commitment to environmentally-

² More regulatory controls of a substance reflect the seriousness of the threat it might pose. Substances that are not controlled may not have a detrimental impact on the environment, or might not have been the target of any complaints yet.

conscious practices by forming an Environmental Management Specialist (EMS) committee.

5.3.2.4 Factors that influence the outcome of a manufacturer's environmental management are investment capability and employee participation. Financial investment provides environmentally-friendly infrastructure as well as management systems to ensure that employee participation makes such investment worthwhile. Human resources management also generates costs in stimulating employee awareness, skills and knowledge-building that is fundamental in gaining employee cooperation.

5.3.2.5 The most important factor in implementing COD is employee participation. As stated by one interviewee, "Beautiful policy with full management support produces no results unless people actively apply the policy, which is certainly true in our case". Case C promotes employee participation through encouragement and incentives such as their "leave for a donation" program whereby the company "donates" 2,000 baht to fund a day of leave for an employee who has received enthusiastic feed-back. Case C also arranges regular community involvement activities, company religious donation trips, as well as philanthropic activities.

5.3.2.6 Due to the longevity of the existing manufacturing plant, the city has grown around it such that the factory is now in the town center surrounded by residential and commercial areas. The development of these surrounding inhabited areas has created additional pressures for corporate social and environmental responsibility as reflected in various additional regulations. Restrictions on truck road use, the hazardous substance they are allowed to carry, and e-waste transportation limitations are some examples. While the observed location was the original factory, Case C has since established two new plants on the outskirts of Bangkok areas, further away the public, in order to carry out processes there that generate more waste than allowable at the first site. Hence, there are various factors that influence factory location. While a central area may be most convenient from a logistical standpoint

(e.g. close to airport) such a location is more expensive, whereas outer areas incur higher transportation costs but with less social and environmental pressures.

5.3.2.7 Employees are minimally affected by environmental factors, mainly from the odour and handling of chemical substances. Case C provides employees with an internal comments/complaints system, regular health check-ups, and a green area with trees and tables for recreational use.

5.3.2.8 The corporate culture at Case C seeks to create a positive rapport between employees in the workplace and a family-like atmosphere. Pregnant women are transferred to less labor-intensive departments away from chemical substances so that they can work safely. The field visit observation showed employees to be mentally healthy and happy in a harmonized setting, suggesting that Case C was able to enjoy a high level of employee participation in support of corporate COD. This observation was corroborated by the assertion of a respondent that, "In my view I am highly satisfied with our company COD and its effectiveness".

5.3.2.9 The main obstacle for a manufacturer in protecting the environment is the level of investment requirement. Environmentally-friendly infrastructure, machinery, technology, management systems and maintenance are very costly which affects overall production costs as well as product prices.

5.3.2.10 The extent to which manufacturers can contribute to environmental conservation depends on every manufacturer's efforts, compliance with legal requirements, and the efforts of employees as well as citizens to help protect the environment.

5.3.2.11 The integration of LCA can help considerably to protect the environment. Various manufacturers are implementing eco-designs for environmentally-friendly products while maintaining economic aspects. Case C for instance, has introduced a new, smaller microchip that uses less chemical compounds

and has already proven not only to help protect the environment, but also control management and enhance market competitiveness.

5.3.3 Re: Government Rules and Regulations

5.3.3.1 It is essential to have complete knowledge and understanding of legal requirements in order to ensure full compliance as obligated by corporate policy and ISO certification. The Case C legal division acquires and updates R&R through Ratchakitcha membership.

5.3.3.2 Government R&R is a crucial mechanism for environmental protection due to its mandatory nature, however it is often found to be confusing and complicated. Manufacturers have to independently interpret such legislation as well as to comply with it. At Case C full compliance is encouraged by the company philosophy of "Do what must be done" and the through the support of the corporation.

5.3.3.3 The respondents at Case C were under the impression that there is more advocacy than implementation. According to one interviewee, "To me PCD monitors rather than implements R&R", reflecting concerns over the level of environmental R&R effectiveness as well as enforcement.

5.3.3.5 The government promotes and encourages environmental responsibility through awards but not in the form of knowledge-building. There are further supportive activities from BOI such as tax reductions for efficient machinery and for being ISO certified, although the latter status is related more to economic performance factors than to environmental issues. However, as the corporate group CSR policy clearly states "To give not to take", Case C does not participates in BOI schemes.

5.3.3.6 Currently the government is performing inadequately in terms of its duty to supervise, control and enforce the law. "They only promote but provide little

support". There appears to be little to no official inspection to ensure manufacturer compliance.

5.3.3.7 The government should advocate and provide knowledge-building and supporting activities such as workshops, events, seminars, and consultancy services. These should especially examine international market requirements that significantly affect a manufacturer's market accessibility, as well as tax exemption or concessions for environmentally-friendly firms. There was no government support or even a supervising department for example, for Bazel COD. Thailand can also contribute to the reduction of global warming by assigning carbon credits with specific direction to manufacturers. The government should formulate domestic regulations to stringently control waste production and its disposal, in order to prevent Thailand from being used as a dumping ground for various pollutants.

5.3.4 Re: Social Pressure and Civil Society

5.3.4.1 The corporation works with other organizations on technical environmental issues, based on the potential value of each solicited cooperation and coordination. Case C is recognized as a pilot project on water management, and participates in a "Thai RoHS" network as well being a member of EEI.

5.3.4.2 Complaints with regard to product quality are considered common in the EE industry. In terms of environmental issues, Case C has received complaints from residential houses next to the factory about smoke and noise pollution. They responded by installing new ventilation systems and by replacing old machines with new. Such a satisfactory response was only possible due to the corporation's CSR awareness, and its ability to invest considerable funds into infrastructural elements that already comply with legal requirements.

5.3.4.3 Every complaint is initially registered at the security guard's office before being passed on to the Environmental Engineering Department, which will

respond within 10 working days. Corrections must be formally signed for acceptance by the complainant. This process is applied to both internal and external complaints and has proven to be effective.

5.3.4.4 The continuous control and improvement of production processes through R&D helps to identify, evaluate and apply appropriate preventive measures, thereby effectively reducing the rate of complaints.

5.3.4.6 Case C strives to build a positive corporate image through CSR philanthropic activities such as an annual drawing competition for community schools in the province.

5.3.5 Re: Buyer & Global Market Pressures

5.3.5.1 The main concern of international buyers is “product price and quality”. Each manufacturer is responsible for producing quality products according to specifications such as RoHS and other chemical restrictions, while maintaining competitive product pricing.

5.3.5.2 Given that Case C manufactures exclusively for export, international buyers are certain to be more concerned with environmental issues due to more advanced R&R and purchasing power. They might say, “If you don’t do—we won’t buy”.

5.3.5.3 Environmental issues are a factor in purchasing products. Requirements vary according to each buyer through product specifications in addition to compulsory requirements from importing countries. Corporations such as Sony and Samsung consider manufacturer ISO certification as well as other aspects of environmental management with regard to the production process, and require ‘by-analysis’ of chemical substances prior to purchasing orders, which can be time consuming.

5.3.5.4 Case C is subject to various requirements and product restrictions with regards to environmental issues from importing countries, as well as international buyers, but not specifically under CSR concepts.

5.3.5.5 Dramatic worldwide environmental damage due to human activities has increased environmental awareness across the globe, resulting in social pressure from consumers with purchasing power in developed countries such as the USA, to demand for more environmentally-friendly products.

5.3.5.6 Case C found the EU to have the most stringent regulations, such as RoHS, which prohibits non-compliant products from being sold in the EU. While the EU requires manufacturers to perform a self-assessment of their regulatory compliance, will soon have an even more stringent and disciplined monitoring system by forming certified subsidiary companies to monitor and supervise every trading partner's environmental management. Manufacturers are obliged to pioneer and develop their operations to meet such requirements in order to sell their products.

5.3.5.7 Case C found that complying with buyer's requirements is worth the investment in terms of gains in market share. "The supporting rationale for ISO accreditation is to help gain product market share, to reduce third party pressures,³ and for legal credit". As a prelude to future global market trends towards environmentally sustainable production such as the RoHS restriction on lead that has eliminated it from 90% of EE products in the world market, those opposing such trends will not be able to sell their products.

5.3.5.8 Buyers are willing to accept higher product prices in complying with environmentally-friendly specifications due to importing countries regulations, however both importing countries and international buyers do not provide support or assistance with compliance.

³ Pressures such as stakeholder demands, criticism from environmental organizations, as well as media scrutiny.

5.3.5.9 Case C's main exporting competitors are Korea and China as well as other countries within the Asian region such as Vietnam, which is believed to practice a certain level of CSR environmental controls as it is subject to same importing market requirements.

5.3.5.10 In the future non-tariff barriers will become an influential CSR and environmental conservation stimulant through market mechanisms in the form of consumer demands, purchase requirements, product specifications, market competition, and media attention.

5.3.5.11 The most influential global market mechanism at the international level is the legal aspect and market, or social pressures from consumer demand. However in Thailand with weak legal and social pressures, buyers and importing countries requirements are the main influential factors.

Conclusion

Findings from Case C infallibly imply that global market pressures significantly influence MNC CSR and environmental policies of Thai manufacturing plant, pushing them to be socially responsible and to produce environmentally-friendly products as demanded by end-market consumers. "Domestic government and consumers do not create much pressure. What matters more is manufacturer's efforts and commitment". Case C also supports the significance of management's vision as the key that determines a manufacturer readiness to invest in environmentally-friendly infrastructure and management systems, as well as human resource management. Global market pressures that are reflected in MNC corporate policies are the main CSR driving forces affecting Thai manufacturers.

5.7 Case Study D Findings

Case study D is a domestic Thai-owned company established in 1989 to research and develop, as well as manufacture, local brands of electronic and telecommunication equipment. During its nineteen years of operation the company has successfully become a publicly-listed company on the Stock Exchange of Thailand (SET), and has evolved into one of the main distributors in the Thai telecommunications industry. The corporation has undergone extensive strategic transformations as well as a relocation of its manufacturing plant to a larger site that better facilitates the transportation of merchandise.

Manufacturer's Profile:

Export proportion: 90 % of total production

Services provided: Manufacture EE products under local brand 10% production. OEM 90% of production. The remaining 10% is manufactured under a local brand which divided proportion of sell as 90% domestic for market and export 10%.

Export markets: EU, USA, Japan, Myanmar, Malaysia, the Middle East, Laos, The Philippines, Sri Lanka, Pakistan, and Australia.

Factory areas: Production 43%, Storage 37 %, Green area 10 %, Other 10%
Total 10,000 sqm

Employees: 950 employees, 70% female, 4-6months training,
Minimum education: High school, Diploma, Bachelors

Two interviews with the following management personnel were conducted at the company head office and are presented below:

Mr. P: Factory Administration Manager, interviewed on Oct. 17th 2007.

Mr. S: Special Product Manager, interviewed on Oct. 19th 2007

5.3.1 Re: CSR Comprehension

CSR is perceived as the duty of a manufacturer to be aware of the social and environmental impact of its operations, and to minimize such impact. It is the social and environmental responsibility of every manufacturer to acknowledge their part and role in society by respecting the environment and contributing back to society.

5.3.2 Re: Manufacturer' CSR and Environmental Management

5.3.2.1 EE industrial activities have considerable impact on the environment primarily in terms of water pollution and e-waste generation. These byproducts are improperly disposed of by dumping without treatment in unregulated countries, thus Thailand should enforce stringent e-waste management legislation in order to avoid being a dumping ground.

5.3.2.2 Case D, having awareness of its environmental impact, has invested millions of baht in environmental management systems including an air management system that filter hazardous substances from industrial smoke, and a water treatment storage system to add microorganisms and oxygen to water preventing spoilage before disposal. The corporation is currently preparing for ISO 14000 accreditation based on announced environmental policies and COD, as well as the appointment of an Environmental Management Representative (EMR) to oversee issues of concern. Although the company had long been environmentally-friendly it only recently pursued ISO14000 accreditation due to its corporate complexity "We were not ready in terms of our human resources" states Mr. P.

Although Case D has not yet obtained ISO 14000 certification, lead has been completely eliminated from its production processes in compliance with RoHS standards found acceptable by other trading partners such as Japan. Training preparation can take as long as six months depending on individual ability, and one year to stabilize operational processes. Seventy percent of employees are female due

to better performance on detail-oriented tasks required in electronic equipment manufacturing to RoHS specifications.

5.3.2.3 Factors that influence the manufacturer in terms of environmental responsibility are buyers' requirements and manufacturer awareness. The business priority is to meet and satisfy customer demands in order to survive, but self-awareness is imperative in determining manufacturer CSR policies. "It is a duty to be socially and environmentally responsible and not just something we should be told to do by others" says Mr. P. Respect for buyers requirements such as RoHS is mandatory because "Don't do, can't sell" according to Mr. S & Mr. P) but awareness determines CSR anticipation as well as implementation.

5.3.2.4 Factors that influence the outcome of manufacturers' environmental management are investment capability and employee participation. A manufacturer cannot improve its operations to make them more environmentally friendly without money to invest in appropriate infrastructure and machinery. Top executives who direct corporate vision possess the authority to approve budgets for such funding and COD support. Employee awareness will spontaneously result in employee cooperation, thus awareness raising and knowledge-building activities are also very important.

5.3.2.5 The most important factor in implementing COD is employee participation. Regardless of policy perfection and governance, if the messages do not reach employees it can lead to a lack of participation thus a determined educational campaign, training, and disciplinary measures are imperative. "Employee management is also part of CSR" says Mr. S. Case D promotes an amiable working environment offering low-cost hygienic food, by placing restrictions on the canteen and offering a daily milk quota¹ in the name of employees physical and mental health. (Mr. P).

¹ It is scientifically believed that milk helps clean the liver, and therefore should be consumed by those who closely handle lead substance to protect their health.

5.3.2.6 Case D relocated its manufacturing plant to an industrial zone on the outskirts of Bangkok in order to expand facilities from 260 sqm to 10,000 sqm, and re-established the plant with environmentally-friendly infrastructure. The corporation chose not to move onto an industrial estate with confidence that the plant could operate efficiently independently. Although an industrial estate has certain advantages, there are also additional rules as required by law which were seen as limitations with unnecessary costs. Industrial zones on the other hand, may have residential areas nearby, but with suitable distance not to be problematic.

5.3.2.7 The elimination of lead substances in combination with regular health checks has resulted in minimal negative environmental effects on employees.

5.3.2.8 According to Mr. S, Case D is content with its current environmental management. "We foresaw the importance of standardized systems in global trade and designed our plant infrastructure to be environmentally-friendly from its inception".

5.3.2.9 The corporate CSR awareness as well as anticipation believes that there are no obstacles as long as there is determination.

5.3.2.10 The extent to which manufacturers can contribute to environmental protection depends on everyone's awareness; the manufacturer, as well as individual employees or citizens. Often the cause of pollution comes from community water as well as from waste disposal. If both manufacturers and communities are responsible for their activities there will be less environmental problems, but unfortunately this is not always the case.

5.3.3 Re: Government Rules & Regulations

5.3.3.1 The corporate EMR and legal division is currently building a database with regards to international and domestic environmental R&R as required by ISO

14000 certification. Domestic R&R data is mainly acquired through Ratchakitja membership.

5.3.3.2 Case D operates in compliance with DIW under the MOI regulations and is confident that it is environmentally-friendly beyond legal requirements. "Because of our awareness of the issues we have gone beyond compliance so that our operation is internationally acceptable, however many still do not recognize our efforts in Thailand" (Mr. S).

5.3.3.3 Unfortunately environmental R&R is found to be complicated and only moderately effective due to lack of enforcement. Manufacturers are required to submit an annual report but there are no inspections to monitor performance. According to Mr. S, "I believe officials are prompt and capable of doing anything, but the system needs more discipline. R&R are quite loose and confusing and only regulate pollution control not the actual management practices".

5.3.3.5 Case D is not aware of any supporting activities or advocacy from the government. "We are willing to cooperate with the government sector but there has been no support such as campaigns, seminars, training or knowledge-building on environmental issues by any government agency" state Mr. P and Mr. S.

5.3.3.6 It is perceived that the government does not fully comprehend the real need and impact of environmentally-relevant activities, or manufacturers' capability and need for support to comply. This results in disturbing levels of compliance and in some cases inappropriate R&R

5.3.3.7 A stringent and disciplined penalty system is urgently needed in Thailand so that there shall be less room for flexibility. The government should also formulate domestic standards that are internationally acceptable to deal with increasingly diverse non-tariff barriers from international markets, and support manufacturers to comply with these. "Thai manufacturers produce a large quantity of

reliable products for the world market, but need support in building human resources proficiency for R&D” state Mr. P and Mr. S.

5.3.4 Re: Social Pressure and Civil Society

5.3.4.1 Case D is currently using an independent environmental consultant but has never worked with other organizations regarding environmental issues, for lack of both opportunity and necessity to do so. There is however a high probability in the future of community involvement and knowledge-building activities inline with corporate CSR and ISO policy. At the same time there is lack of rapport and understanding between manufacturers and civil society. According to Mr. S, “I’m rather skeptical of the intentions of some civil society groups. Some create a commotion to attract funding and can be uncompromising to deal with. They often don’t understand business rational and don’t try to understand it either.”

5.3.4.2 Although Case D’s manufacturing plant is not in proximity to disturb community areas, it nevertheless affects the surrounding environment such that the plant once received a complaint about employee noise pollution at night. This complaint was addressed by notices.

5.3.4.3 In the event of complaints, an investigation must be conducted and an appropriate response decided on a case-by-case basis. Case D initiated a waste pipeline project to drain community waste water directly into the main public floodgate, with the aim of maintaining the purity of the local pond which was being used for disposal. The community however, strongly opposed to the project on the grounds that the pipe had inadequate capacity, in spite of the manufacturer’s relentless effort to explain the intended environmental benefits. Ultimately the corporation responded by cancelling the project in the midst of construction.

5.3.4.4 Case D has never received other complaints since the plant relocation due to continuously improved environmentally-friendly operations, and consideration for the social environment.

5.3.4.6 The corporation builds its consumer image by producing environmentally-friendly products for both international and domestic markets. A lack of stringent environmental controls and consumer environmental awareness has subjected the Thai market to a low-quality standard of goods. Thai consumers cannot generally absorb higher product prices caused by environmentally-friendly manufacturing due to level of education, income, living standard and government advocacy, but Case D willingly absorbs additional costs out of CSR to provide international equivalent standard in the domestic market. Case D however encounters challenges in being recognized for its efforts as noted by Mr. S, "Under our local brand, although we offer a pricing advantage on standardized products thanks to no import tax, we encounter challenges from the domestic market in terms of their perception of our brands quality".

5.3.5 Re: Buyer & Global Market Pressures

5.3.5.1 The buyers priority is to acquire low-cost quality products that meet specific requirements. While these specifications do not directly require manufacturers to be either socially or environmentally responsible, they necessitate production functions that are environmentally-friendly. "Payment will only be received upon full compliance" as Mr. P notes, therefore "Can't do, can't sell" says Mr. S.

5.3.5.2 International buyers are more concerned with environmental issues due to their stringent domestic regulations.

5.3.5.3 Some buyers have additional specific requirements on chemical restrictions in addition to importing countries regulations. Prior to business contracts, detailed specifications will be provided and examined by an audit team.

5.3.5.4 International buyers do not specifically request CSR but communicate such concepts through purchasing conditions and product specifications such as demanding that a manufacturer have ISO 14000 certification. "The main reason to attempt to obtain ISO accreditation is because of buyer pressure asking when will we have it" (Mr. S).

5.3.4.5 Global natural phenomenon have captured world attention with regards to the level of environmental degradation, and have precipitated movements for conservation.

5.3.5.6 Case D's major buyers are from Japan and include Sony, Pioneer, Toshiba, Hitachi, and Daikin which export their final products to the majority of end-users in the EU markets, as well as US buyers like Microsoft. EU regulations are thus the most influential and are found to be the most stringent, followed by US and Japan respectively. "The reason why we changed all of our operational processes to RoHS is because most of our buyers are from Europe" (Mr. P). Self-declaration conformity assessment has proven to be highly effective as Case D was once rejected for a shipment that was mistakenly mixed with non RoHS products. The damage cost was so great that the corporation decided to change the whole operation to RoHS compliance. In the long-term however, such changes of policy have proven worth the investment by providing a competitive market advantage. "At the time many companies weren't capable so we had a competitive advantage for a couple of years, but now the market has re-balanced because everyone had no choice but to comply," (Mr. P and Mr. S).

5.3.5.7 Following buyer's requirements is worth the investment because "Don't do, can't sell" (Mr. P & Mr. S). In addition, since the corporation considers fulfilling CSR a duty, it is willing to sacrifice its financial capital to do so.

5.3.5.8 International buyers from EU, the USA and Japan are willing to accept higher prices due to increased costs in complying with product specifications, and in some cases provide raw material as an alternative. This is not the case in some other

countries however. A secondary industry producing raw materials for other products is not eligible for support from importing countries, only from direct trading partners.

5.3.5.9 Case D's main competitors are China, Malaysia, India as well as domestic manufacturers and the corporation is confident to implement CSR to a certain extent because it is subject to the same importing countries and buyers' requirements.

5.3.5.10 At present Asian countries and countries in the Middle-East are not concerned with CSR and environmental issues because developing countries are not ready in terms of their development priorities and citizen's standard of living. "One must be stable to be able to contribute back to society regardless of the level of awareness" (Mr. S). In the future however, global environmental issues will eventually capture everyone's attention.

5.3.5.11 Global market forces significantly influence CSR and environmental conservation pressures through non-tariff barriers and competition market mechanisms. For example, an automobile sold in the US is of much higher standard than one that is sold in Thailand, therefore market restrictions are the main determinant. Environmental accidents such as oil-tanker shipwrecks can dramatically raise public awareness, attract media attention and compel government disciplinary action.

Conclusion

Recalling that the business priority is to generate revenue by meeting customer demand, it is apparent that non-tariff barriers from importing countries and buyers' requirements conceptualized as Global Market Pressures, are the main factors driving CSR efforts by Thai manufacturers. Again those who "Don't do can't sell". Although market pressures direct environmentally-friendly production processes, the level of implementation and effectiveness depends largely on manufacturer awareness and

resolution determined by corporate vision to administer CSR, environmental policies and COD as well as employee cooperation.

Thailand essentially needs to develop internationally recognized domestic standards, and stringently regulate industrial activities for the nation's sustainable development. Failure to do so can result in continuous environmental degradation and the risk of becoming an e-waste dumping ground. The government can enhance Thai manufacturer competitiveness in world markets by providing knowledge and technological R&D support, and by increasing public appreciation for environmentally-friendly products.

5.8 Case Study E: Findings

Case study E is a domestic Thai-owned company established in 1978 to manufacture quality electrical home appliance products with an aim for total customer satisfaction and a response to international standards worldwide. Products include jar rice cookers, electronic rice cookers, electric thermos pots, electric dry irons, water heaters, toaster ovens, blenders & grinders and washing machines. Case E is also an exclusive sole manufacturer of home appliances for a prominent trademark of Japan, as well as OEM for overseas markets. With 30 years of extensive expertise in the field, a commitment to excellence, and technological support from the trademark corporation, the company has become one of the biggest rice cooker manufacturers in Asia.

Manufacturer's Profile:

Export proportion: 60% of production

Services provide: Manufacturer of electrical home appliances under a global well-known trademark and OEM

Export markets: Malaysia, ASEAN, Japan, the Middle East

Factory areas: Production 95 %, Green area 5 %, Total 30,000 sqm

Employees: 1,400 employees, 700 sub-contract¹ 50 % female, Average age 20-35, Education: Bachelor, Diploma, High school

An interview with the General Manager was conducted on December 7th, 2007 however the researcher did not have an opportunity to observe the manufacturing plant's environmental management due to the respondent's time constraints.

¹A subcontractor is an individual or a business that is hired to perform specific partial task of the whole operation.

5.3.1 Re: CSR Comprehension

CSR is perceived to be a manufacturer's duty to operate without causing harm to society and the environment. Social responsibility includes respect for internal social environments in terms of employee welfare, and external concern for the surrounding communities and society as a whole. Environmental responsibility is to produce green products that have minimal detrimental impact on the environment. CSR is a concept that induces manufacturer awareness of its significant role in development. "We are part of the society while maintaining the priority of business survival." Quality relationships among all parties are required given increasingly scarce resources and intense competition, requiring more and more understanding and compromise. The key to stimulate CSR awareness therefore, is to communicate the message as well as evidence that CSR can be cost-effective in the long-term through publicity and advocacy to the public as well as the private sector.

5.3.2 Re: Manufacturer CSR and Environmental Management

5.3.2.1 Although the manufacture of electrical products generates only moderate environmental impact, production nevertheless consumes energy and natural resources such as oil, electricity and paper which must also be considered in terms of conservation and pollution control. Prevention of harmful substances to human health and the environment in input materials and production processes will not only help to conserve, but can also minimize the level of pollution. With an integration of various new and clean technologies, manufacturers can successfully increase product efficiency through utility maximization, thus reduce energy and natural resources consumption as well as waste generation.

5.3.2.2 Even though Case D's operation does not significantly harm the environment, the company has taken conscious measures to reduce any impact. "Although none of our processes are detrimental to the environment, we have management systems in place". Apart from corporate awareness another reason for

environmental management is for business survival. The corporation was ISO 14000 certified, but due to excessive costs discontinued this certification while continuing to operate in accord with a coherent environmental policy, COD, and an environmental committee and team to oversee such issues.

5.3.2.3 Factors that influence the manufacturer in terms of environmental responsibility are management vision and consumer demand. Company policy directs management structure and governs its operating activities. "Our company's principle policy is to fully comply with R&R and to operate with minimum social and environmental impact". Management vision therefore determines corporate anticipation and the level of responsibility towards CSR, as well as legal compliance. Businesses are also obliged however, to respond to buyer and consumer demands in order to sell their products. Thus, products specifications which generate minimal negative environmental impact are preferred by consumers. As per the respondent, "We must meet clients' requirements for business survival".

5.3.2.4 Factors that influence the outcome of manufacturer environmental management are investment capability and employee participation. Investment determines the level of environmental management and employee participation determines the level of effectiveness. "To go beyond what we have now requires additional substantial investment which is decided by executives". A combination therefore of management vision, determination, systematic structural management and employee cooperation, are mutually essential factors.

5.3.2.5 The most important factor in implementing COD is employee participation because although COD and disciplinary measures can impose mandatory pressure to a certain degree, voluntary participation generates a long-term commitment for environmental conservation within and beyond the workplace. Case E strategically promotes participation through awareness and knowledge-building rather than enforcement, by advocating company environmental policy and providing information on why and how to protect the environment. Information is also provided as well concerning the impact on both the company and individual's well-being.

Posters and signs are placed throughout the factory, training is provided, and inspections and evaluations are regularly conducted to ensure policy performance.

5.3.2.6 Thirty years ago an empty area in close proximity to the city center was most suitable for the establishment of a manufacturing plant. Since then urban development had brought residential communities near the factory, and an airport behind it has created additional pressures on Case D to be more careful in its operations in order not to detrimentally impact the surrounding environment.

5.3.2.7 Employees may be affected by environmental problems in some circumstances, for example because of the unpleasant smell from color spray processes especially given a strong wind, but a filter installment has solved the problem. Case D's operation involves both delicate and detailed processes (small parts) as well as labor-intensive (mold, color, assembly) processes. Employees are hired based on the tasks and skills needed for each type of operation, resulting in an equal number of female and male employees.

5.3.2.8 Corporate prevention and control management has successfully eliminated heavy metals and lead substances from the manufacturing operation, resulting in cleaner waste water and non-toxic colors. Industrial air is also filtered before disposal.

5.3.2.9 The main obstacles for the manufacturer in protecting the environment are financial investment and the availability of technology. Environmentally-friendly infrastructure, machinery, maintenance and awareness-building as well as R&D for product innovation, require substantial financial investment of which management's vision cannot match. Business financial capability comes from revenue generation, however competitiveness in the world market restricts profit margins. Manufacturers

are thus facing increasing CSR and pressures to lower product prices. A possible solution is “shifting the focus to economies of scale”.²

5.3.2.10 The extent to which manufacturers can contribute to environmental conservation are legal compliance and the collective contribution from everyone in the society. The impact of industrial activities depends on the nature of the industry, resource consumption and the chemical substances involved, which are monitored and supervised by PCD in combination with manufacturer independent additional management. Nevertheless, communities and residential estates have a duty to be responsible as much as manufacturers. Industrial enterprises for example, have R&R to monitor and control levels of water pollution while a 100,000 households can freely dispose of unfiltered and untreated water from cooking. This domestic waste water contains sediments and chemical substances that are dumped directly into the environment every day, resulting in both contamination and public drain blockage. All sources of pollution, need to be well-evaluated.

5.3.3 Re: Government Rules and Regulations

5.3.3.1 Case E builds its legal database through interactions with government organizations and NGOs such as Ratchakitcha and TEI, and can comply with almost every section of the law because environmental R&R is considered a minimum company requirement. Due to CSR awareness though, the corporation has taken measures to outperform legal requirements. As stated by the interviewee, “As a matter of fact our factory over-performed legal requirements on various issues such as levels of water and air pollution emission”. Case E also participates on the drafting committee for various standards such as electrical usage, environment, and Thai RoHS.

² Technically, economies of scale refers to the savings in resources made possible by increases in the size and scale of production facilities. When these economies are possible the result will be a greater output per unit of input.

5.3.3.3 While environmental R&R is of great concern, legal content is vague and confusing and enforcement is weak. Authorities claim they do not have enough personnel to conduct regular, systematic and efficient inspections.

5.3.3.5 The government provides several CSR and environmental responsibilities supporting and promoting activities such as 'Environment for Samutprakarn' and 'Clean canal pure water' project (Klong-sa-aad, Nam-sai) by PCD. Manufacturers were encouraged to participate in these as part of society, to help push forward such collective movements. The indirect incentive mechanism through manufacturers' cooperation tends to generate a better outcome than that of enforcement.

5.3.3.6 According to the respondent, "In my view, the current R&R and the government role in their implementation is normal". This could imply that Case E is both skeptical about the government's role and responsibility to regulate and govern industrial activities, and is content with the current level of weak enforcement and intervention.

5.3.3.7 "Overall, the government is currently doing what they can but in their style, e.g. slow and not to the point, maybe because of rules and restrictions but they do try to involve manufacturer participation" This statement by management suggests two important points. First, is a refusal to comment on a sensitive issue. Second and more importantly, is Case E's distrust of the following government statements: "The question I think should be what should businesses should do? What should society do? Because impact doesn't sprinkle from the government". Nevertheless, the government has a different vision and purpose from that of business and too much enforcement could jeopardize business operations, eventually leading to bankruptcy and negatively affecting the national economy. Alternatively, giving business free reign will hinder the nation's sustainable development. Therefore, there must be mutual understanding, compromise and support.

5.3.4 RE: Social Pressure and Civil Society

5.3.4.1 Regarding environmental issues, Case E works with various organizations by joining known networks and groups to participate in activities such as the “Clean Technology Programme” of Samutprakarn province, and “King-Kaew Association”.

5.3.4.2 Case E receives complaints approximately once every two years, mostly about noise pollution because residential houses are next to the factory. The the complaints are of trivial and do not always relate to manufacturing operations. Nevertheless, out of corporate commitment to the community and caring for their well-being, Case E does its best to respond to phone calls from the community and to help resolve any problems.

5.3.4.3 Complaints are first received and recorded by a department that then informs the Facility Management Division which examines the claim, investigates the cause, then notifies the appropriate division to take action. Information about the corporate response and any operational adjustments are provided to the complainants upon completion.

5.3.4.4 Communication is an important factor influencing the potential and frequency of complaints. Establishing a positive rapport between communities and manufacturers through effective communication will enable collective environmental management. Case E welcomes community notification of any issues of concern and vice versa: for example by notifying the community a week in advance about a fire evacuation practice.

5.3.4.5 The complainants are satisfied when the management of a complaint involves an amiable interaction based on respect and responsibility to the community.

5.3.4.6 Case E develops positive consumer impressions by prioritizing product quality, but does not promote itself with regards environmental issues. This is because at present Thai consumers are unwilling and unable to pay increased prices for merchandise that is environmentally-friendly. For case E therefore, promoting environmental issues could create the wrong impression and compromise sales volume.

5.3.5 Re: Buyer & Global Market Pressures

5.3.5.1 Buyers are concerned about price as a first priority, and environmental considerations vary depending on the importing country requirements with which the manufacturer must comply. Manufacturers must be able to produce products that meet specific requirements at reasonable or competitive prices therefore.

5.3.5.2 Although the true driver of change is from both domestic and international R&R, the more stringent environmentally-friendly requirements from international markets significantly influence the way in which businesses operate. For example, EE Japanese firms operating overseas are mandated to establish a waste buy- back system. This is where consumer demand for environmentally-friendly products puts pressure on the government as well as the private sector. Unfortunately consumers in developed countries such as the USA, Japan and EU have far greater environmental awareness plus the purchasing power to afford green products.

5.3.5.3 The requirements from buyers as well as importing countries experienced by Case E are with regard to product standards and not necessarily production processes. According to the interviewee, "They don't specify or really pay attention to production processes just as long as the products do not contain restricted chemical substances". As a result the RoHS self-declaration system may not

effectively reduce environmental impact as much as an institution like SA8000³ with an auditing process.

5.3.5.4 Case E has never encountered CSR as a factor in purchasing conditions. The current environmentally-friendly specifications and low prices already impose numerous pressures on the manufacturer to the extent that without adjustments as well as R&D such enterprises may not survive.

5.3.5.6 Although, the corporation manufactures for a prominent Japanese trademark, products are mainly sold in ASEAN markets such as, Malaysia, Vietnam, Japan and Singapore. The prospect exists of expanding into others parts of the world (e.g. EU, US) thus international requirements and regulations from the EU like RoHS and WEEE are becoming essential and will requiring Case E to undergo certain production changes.

5.3.5.7 Meeting the requirements of buyers and importing countries is perceived as a necessary investment because “Don’t do, can’t sell”. It is also noted however that many environmentally-friendly technologies are cost-effective by enhancing efficiency resulting in less resource consumption and lower production costs.

5.3.5.8 Buyers want low prices for quality products that meet their requirements. Japan for instance, requires non-foam packaging resulting in higher production costs, but manufacturers can only raise product prices to a certain level due to market competition. “Buyers are not willing to accept higher prices due to increased costs in implementing environmental management strategies”. Therefore manufacturers can only transfer a small amount of additional costs from implementing CSR and environmental management to product pricing, and the

³ SA8000 Social Accountability Standard promoting worker’s rights is a leading labour and human rights standard that incorporates third-party monitoring and innovative management systems.

difference must be independently managed and absorbed with little support from buyers

5.3.5.9 Case E's main competitor is China due that nation's ability to produce inexpensive products, but with an aim for a different market willing to accept low quality at a low price. The rapid growth of China as a force in the world market however will eventually lead to more environmentally-friendly industrial operating standards as required by the international buyers and importing countries of Thailand.

5.3.5.10 At present CSR is not an important factor but the enactment of new environmental R&R at international and domestic levels will steadily force manufacturers to be more socially and environmentally friendly in the future.

5.3.5.11 Global market mechanisms do substantially impact business operations such as non-tariff barriers, inflation of oil prices and input materials, all of which directly affect the cost of goods sold. Manufacturers are facing increased costs and product price suppression, while having to change their operations in favour of CSR and environmentally-friendly global market trends to survive. Since the international realm is beyond domestic control, the focus should be on what can be done locally such as improving human capital and utility maximization. Taking such steps will not only enhance manufacturer competitiveness, but will also stimulate environmentally-friendly movements that support national sustainable development.

Conclusion

The main business priority is survival which falls into two categories: legal compliance and business rationale. The level of compliance in the Thai context depends further on the two mutual factors of government enforcement and the voluntary cooperation of businesses, both of which are clearly areas of concern based on this research. The business rationale to survive is profit generation which depends on consumer preferences and market mechanisms. The findings of Case E revealed

that Thai manufacturer CSR and environmental responsibility are driven by global market pressures in the form of non-tariff barriers from buyers and import requirements. "If detrimental impacts are generated, the consequences will eventually jeopardize business survival, therefore we must also look after our clients' interests".

Nevertheless, consumers also play a crucial role in stimulating environmental R&R, in addition to the social and environmental responsibilities of the private sector. Since such responsibility affects a company's long-term image, the crucial role of consumer awareness and demands for environmentally-friendly products create powerful pressures on businesses for legal compliance as well as transparency. Ultimately then, awareness and knowledge-building at community and society levels are important factors in creating domestic pressures on manufacturers to commit to greener production practices.

5.9 Example of Case Studies Environmental Policy

Example 1: We strive to provide healthy environment for our employees, and the communities in which we operate. We shall continuously improve our environmental performance through:

- Use of environmentally friendly materials
- Tactics on of pollution prevention especially in our handling management
- Adherence to resource conservation practices; and
- Commitment to comply with applicable environmental and other requirements.

Example 2: “The earth is irreplaceable asset and duty of our existing generation is to transfer the healthy condition of the earth to the next generation”. We are committed to manufacture and deliver products in the manner that minimize the environment impact that its activities have on the environment, and committed to the society. These activities are undertaken and promoted within our technological and financial capabilities by the content mentioned below;

1. Promotion of Environmental Protection
2. Duty to compliance with relevant legislations and regulations.
3. Promotion of efficient use of natural resources, based on the recognition of fitness of its resources. Promote environment conscious products that environment impacts shall be reduced:
 1. Promotion energy saving (Electricity , water)
 2. Reduction of materials and parts that can be difficult to recycle
 3. Reduction of disassembly time when product dispose
 4. Promotion of non-global warming potential substances instead of existing HFC (Refrigerant, Blowing agent & Insulation).
 5. Promotion to the European RoHS Directive

4. Promotion of environmental protection, activities for environmental impact reduction concerned about environmental aspects of operation activities and services:
 1. Management, reinforcement and reduction of restricted chemical materials.
 2. Reduction of Industrial waste, such as paper, steel and plastic.
 3. Promote Energy saving
5. Promotion of total environmental protection activities throughout the group, including relevant external organization, and committed to the society:
 1. Encouragement, support and guidance of suppliers and contractors to establish Environmental management section (EMS)
 2. Cooperate and joint with local community and society.

5.10 Research Limitations

During primary data collection several noteworthy limitations were encountered. First, the fact that certain practices and strategies employed by the manufacturers in this study were kept confidential consequently limited the collection of data which might have made a difference in the overall analysis. The non-disclosure of specific technologies related to utility maximization, product innovation and marketing strategies are relevant examples here. Such factors are significant in terms of both product quality and price competitiveness, and thus can play a major role in determining a company's market share/sales volume. Furthermore, such concerns with confidentiality also restricted field data collection with regards to manufacturing processes and environmental management systems, as all of the case studies firmly refused to allow the direct observation of their production lines.

The selection of an EE industry is largely based on its future potential growth and the environmental impact of such corporate development, specifically with regards to e-waste generation. It is important to note however, that the level of domestic regulation and government intervention varies according to the

environmental impact of each particular industry. As shown in Table 1.6.1 which describes the levels of environmental pollution according to industrial categories, petrochemical and oil refinery industries are highly polluting of water and air. This appears to be the most stringently regulated sector by the Thai government, whereas the findings of this research show that the government pays far less attention to EE industrial activities. Furthermore, the selection of large factories may not reflect each conceptualized key players level of influence in the case of SMEs. As well, the examination of case studies that export over sixty percent of their production implies a high-level of exposure to global standards and international consumers which cannot be generalized but must be considered on a case-by-case basis, depending on the industry, products and export markets.

Finally, the unstable political situation in Thailand compromised the collection of comprehensive data on the government's role, responsibility and influence on domestic business operations. Two qualitative interview requests about this subject were denied by a TNC and a MNC, both of which were managed by foreign top executive personnel. Although these corporations had been listed companies for a long time on the stock exchange of Thailand (SET), the respondents expressed concerns that the disclosure of such information could generate unpredictable feedback and consequences which might in turn jeopardize corporate operations and/or reputations. Unfavorable reactions included the possible redrafting of the Thai constitution, revision of legislation and regulations, and the introduction of undesirable new policies. The fact that such changes are often initiated by new governments in Thailand results in both confusion and inconsistent long-term guidelines for business operators, according to some of the case studies. Alternatively, other TNC and MNC case studies did not see Thailand's unstable political status as a 'risk' but rather viewed it as a corporate 'challenge' that required comprehension and adaptation. In the end however, primary data collection for this study, during the 2007 coup regime in Thailand, was hindered in terms of the ability to gather candid information from case studies on the role and responsibility of the government.

5.11 Manufacturers' CSR Implementation and Environmental Management

This sub-section demonstrates a manufacturer's level of understanding and anticipation towards the CSR environmental issue, including the rationales from interview findings and field observations. Both compliant and non-compliant environmental management systems, as well as CSR activities and its influencing factors, are presented. The five case studies are shown to have admirable environmental management: three case studies (A-B-C) are ISO 14000 certified; case study D is in the process; while the certification for case study E was discontinued, although it continues to practice due to excessive management costs.

5.11.1 Manufacturer' CSR Comprehension

Findings revealed that all of the case studies are aware of their environmental responsibility, and that the manufacturers are especially aware of their social responsibility, both of which have responded with varied actions. First is the fact that manufacturers employ human resources and consume natural resources, and have considered what they can do to assist sustainable development. Second is recognition of consequences caused by human activities affecting the environment in which we all live in; therefore one has a responsibility to respect, protect and conserve. Third is a social and environmental responsibility that recognizes our 'duty' to give back to society, and that manufacturers should be aware of detrimental impacts generated from their activities. Although there exists no pre-defined set of rules that state the details of what CSR entails, many manufacturers, regardless of how well they understand the depth of the situation, implement CSR to a certain extent based on the belief that businesses can no longer deny the responsibilities they owe to society as well as the environment.

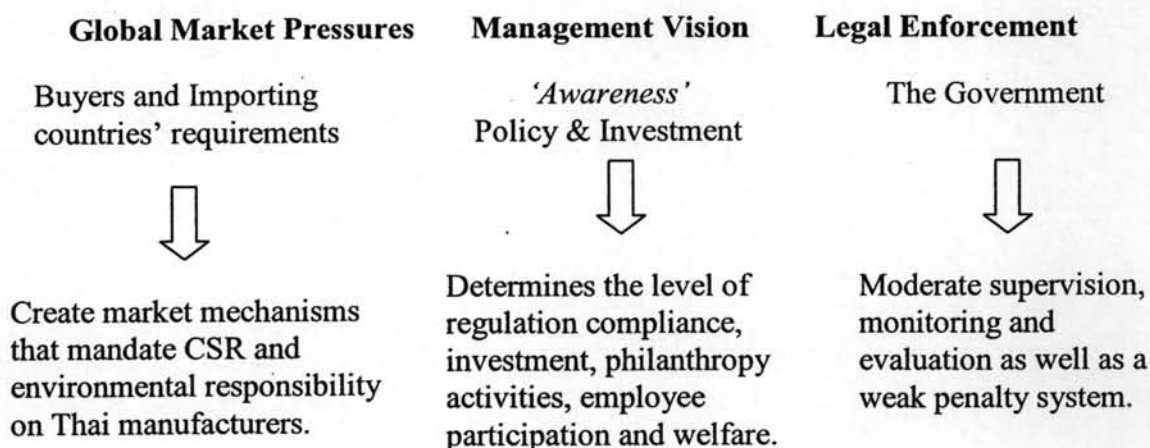
Case studies implement CSR in the form of three main actions: response to consumer need; production of environmentally friendly products; and minimizing detrimental impact on both society and the environment. A consensus found that CSR

must be implemented both internally and externally. Furthermore, the MNC and TNC advanced coherent CSR and environmental policies contribute to the level of articulation and implementation.

The research also revealed that CSR awareness must often be created by concerned parties, as many manufactures recognize their dependence on human and natural resources, but either refuse or do not understand the consequences of their actions if they ignore CSR. The concept of CSR can be an influential mechanism to stimulate awareness and responsibility in Thailand, most effectively through consumer demands that obligate businesses to comply, as well as through social pressures on the government to tighten regulatory controls and monitor businesses activities.

5.11.2 Manufacturer' Rationale for CSR Implementation

The case studies' awareness and anticipation towards CSR can imply that every manufacturer is aware of their environmental impact from direct experience, legal requirements and out of an urgency drawn from global natural phenomenon reflecting the results of human industry on the environment. However, interview findings also assert that there is inadequate legal enforcement in Thailand, as well as inefficient monitoring systems, resulting in a worrying level of R&R compliance, especially among small and medium-size factories due to lack of knowledge, investment and little support from the government. It is a consensus among case studies that the 'level of manufacturer environmental responsibility' is determined by the 'level of awareness', which is driven by three main factors respectively;



It was clear that each case study possessed an awareness of certain levels of implementation but was not reached entirely by their own volition. Case studies were quoted as saying that even with awareness and a willingness to implement CSR and environmental responsibility, the paramount business priority is 'survival', meaning that they must be able to make a profit. In this study, Thai exports-driven economic growth is deliberate by case studies selection with a 70%+ export proportion of production, reflecting business exposure to global market pressures. This accentuates the fact that the revenue¹ of the case studies, as well as a majority of Thai businesses, relies on international customers and consumers.²

Rationale choice theory holds that individuals must anticipate the outcomes of alternative courses of action and calculate that which will be best for them, and choose the alternative that is likely to give them the greatest satisfaction (Coleman 1990; Scott 2005). Thus, the prevailing rationale for implementing CSR and environmental responsibility among the case studies is that importing countries and buyer requirements should state that the case studies must comply in order to sell; quote "Don't do- Can't sell". The research deliberate case studies export proportion to reflect rudiment of Thai economy in an attempt to apply the five EE manufacturers'

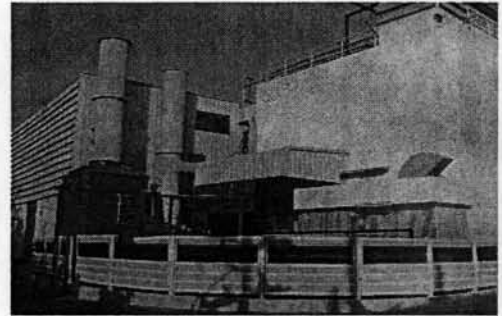
¹ In business revenue is income that a company receives from its normal business activities, usually from the sale of goods and services to customers.

² Customer refers to individuals or households that purchase goods and services generated within the economy in this case 'Buyer'. Consumer refers to end user or a person uses the products or services.

case studies rational to identify CSR main driving force in Thailand. Based on such assumptions, it can be conclude that importing countries and international buyers, conceptualized as ‘global market pressures’, is the driving force behind CSR in Thailand.

5.11.3 Case studies CSR’

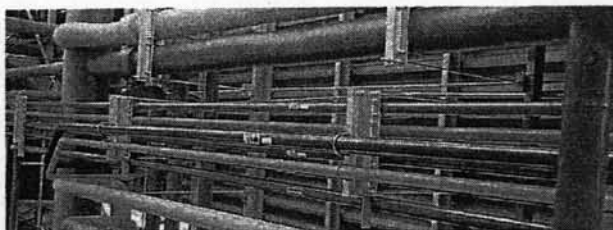
Environmental Management



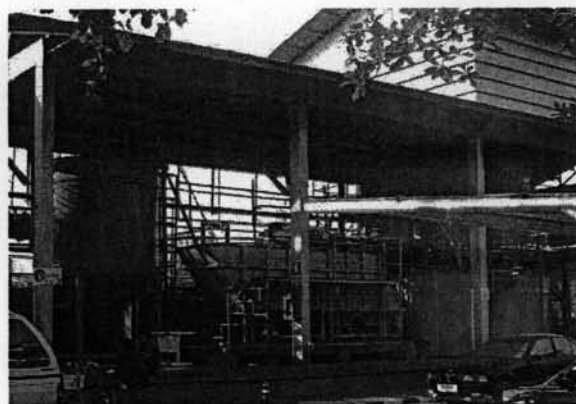
Picture 1 – Example of Air Treatment System

One air pollution management method common among case studies is a process that filters hazardous substances from industrial smoke, such as lead, through a moisture barrier into sediment, leaving pure air to be released into the atmosphere; the extracted sediments are then contracted out to a prominent certified third party such as Jengo and Entec. However, the machinery and infrastructure investment require a substantial amount of capital. Each case study also has additional treatment systems according to the substances involved.

Water management systems separate industrial water and other common byproducts of use such as cooking, restrooms and others miscellaneous tasks, for appropriate treatment. Common-use water is to be treated and reused to maintain green areas. Industrial water can be treated by various methods according to the chemical substances involved, and will be measured for toxins before disposal. For example, case A and B extracts water pollution into sediment before disposal with double-fence filtered outbound pipes, and sediments are then contracted to a certified party for disposal. Case D purified water by adding microorganisms and oxygen to prevent spoilage.



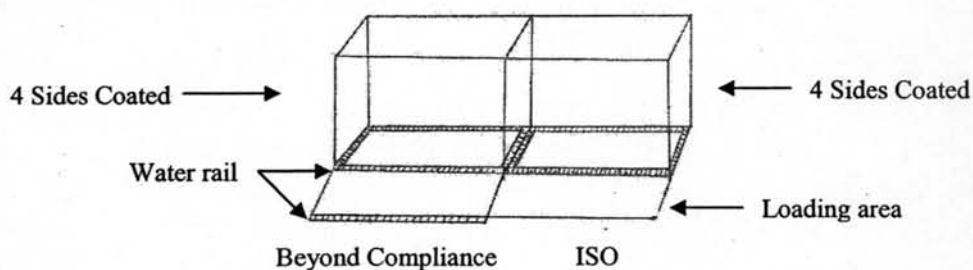
Picture 2 - Example of pipe system that distinguishes water source by color, designed specifically for the substances it carries.



Picture 3 - Example of Main water treatment tank

Case study A and B have installed additional storage under the main tank, which are lined with durable chemicals in case of leakage. The storage room for chemical substances is also lined to contain and prevent contamination with the water rails (Diagram 1). Research revealed that the primary safety aspects, such as air and water treatment system, infrastructure safety and waste separation, are partly required by the ISO standard, but additional compliance aspects are determined and directed by management policy and financial investment capability.

Diagram 1 Example of Chemical Storage Area



Waste management system separates e-waste from general waste and stores them separately according to the substance it contained for disposal, as required by ISO standards. E-waste is contracted by undisclosed certified third parties for recycling and disposal as required by law, a process which is also open to auction by recyclers. Those who practice RoHS produce less e-waste, and help balance additional production costs by a reduction in disposal costs. Since all the case-studies

are secondary industries,³ they are not required to establish a buy-back system by WEEE directive but are aware among MNC and TNC case studies. However, case A, is required to take back consumer discarded products to be shipped back to Japan for recycling and disposal as mandated by Japanese regulations. Picture 4 shows an example of storage area that separates e-waste into categories such as; used light bulbs, batteries, flux, etching chemicals, chemical filters and chemicals from Mark plant, RBS waste, ink stripper-Kerosene- Alcohol, color spray cans, PC-printers, cleaned and un-cleaned chemical boxes.

R&D technological innovations for cost-effective energy saving production processes with an aim for utility maximization and to produce environmentally friendly products have helped reduce production costs by millions of dollars (\$USD), as claimed by case A and B. The two corporations invested heavily in R&D in search of efficient and environmental friendly machinery and technology for continuous development, efficient use of resources and lesser energy consumption. Case C experienced that continuous R&D and innovation for environmental friendly products has enhanced the efficiency and effectiveness of environmental management systems, as well as market competitiveness.



Picture 4 – Example of Waste Separation



Picture 5 Example of a case study' innovation for a robot to transport products to certain production lines which is safe, cost-effective, environmentally friendly and energy efficient.

³ Secondary or Manufacturing industry generally takes the output of the primary sector and manufactures finished goods and parts where they are suitable for use by other businesses, for export, or sale to domestic consumers (wikipedia).

5.11.4 Factors Influencing the level of CSR and Environmental Responsibility Effectiveness

A manufacturer's financial capabilities and employee participation mutually determine the level of CSR and environmental management implementation and effectiveness. Financial investment directs infrastructure development, machinery, R&D, and the level of employee cooperation that leads to participation. However, a substantial investment in environmental management systems and philanthropy activities will not be a worthwhile investment if the intended results are not achieved; this depends on employee's cooperation and participation. Therefore, the challenge lies in human resource management.

Disciplinary measures can foist cooperation, but encouragement through awareness building and incentives have proven to be much more effective in gaining employee participation. Furthermore, voluntary action is much more efficient than a perfunctory attitude. Employee volition to participate also reflects individual awareness to be environmentally responsible beyond the workplace, which gradually and subtly promotes awareness and a movement towards environmental conservation in society, which is fundamental in creating social pressures. However, a large factory with over one thousand employees is certainly much more difficult to manage and control. Factory size makes it difficult to see everything, and employees with diverse backgrounds and education levels possess different learning capabilities. Awareness must be built (case E), as there are those who do not know, those who are willing to learn and those that know but contribute differently. Therefore, research findings revealed that a combination of knowledge building and incentives to raise awareness – as well as corporate policy, effective communication and disciplinary measures – are vital mechanisms in gaining employee participation and cooperation.

Case A was shown to have the most infrastructure investment (over 10 million baht), the most stringent policies and corporate governance. This, along with human resource management, awareness and knowledge-building, have sustained a

satisfactory level of effectiveness. Case B, with free flow investment, high-tech machinery and attractive social welfare, successfully encourages high employee performance (as part of 'human-capital' policy) constituting systematic, transparent and effective governance. Case C prioritizes 'people-employee happiness', welcomes comments and complaints, provides recreation areas, lockers, and work flexibility (e.g. pregnant women can shift to easier tasks, and employ people with hearing disabilities), and has gained employee loyalty, cooperation and discipline. Case D and E emphasize 'human individual consciousness or awareness' under the belief that such things must be built by effectively communicating messages to employees in an attempt to inculcate their temperament with a focus on knowledge-building activities.

5.11.5 CSR and Environmental Management Obstacles

Although there are two mutual factors that determine a manufacturer's level of implementation and effectiveness, financial capability is the dominant obstructing factor. The difference between Thai wholly-owned case studies D and E and other MNC and TNC case studies is investment capabilities, while management vision and support remain equal. Regardless of corporate nature, each case study provided the same single answer as financial investment. Case C, an MNC with full financial support, reported that employee participation determined the level of success, but a budget to invest in building employee awareness, enforcing disciplinary measures and providing incentives engender a high level of participation and cooperation. The same scenario also holds true for case A and B.

According to an interview with EEI and FTI, although small and medium enterprises are enthusiastic about CSR, its capital, financial, and human resource factors impose obstacles and limitations. Case E affirms this with a discontinued ISO certification process due to excessive associated costs. This negatively affects Thai manufacturer's competitiveness in an increasingly competitive world market, and unfortunately, receives little support from importing countries as well as the Thai government. As a result, small and medium size factories may find that it is much

more convenient to evade than to comply with environmental R&R among weak Thai enforcement and monitoring systems, as cited by case A; Mr. H.⁴ Case C reported that the only pertinent support from the government they are aware of is tax exemption on machinery, but would like tax exemption for environmentally friendly operations such as ISO and RoHS compliance, as well as more knowledge building activities. The highest level of support came directly from buyer entities' discretion in the forms of transfer of knowledge, accepting higher product price and providing raw materials. The only support from an importing country came in the form of tax relief for CSR and environmental responsibility from Japan, as quoted by case A.

5.12 Government Roles and Responsibilities

“...a wise and frugal Government which shall restrain men from injuring one another, which shall leave them otherwise free to regulate their own pursuits of industry and improvement, and shall not take from the mouth of labor the bread it has earned. This is the sum of good government, and this is necessary to close the circle of our own felicities” (T. Jefferson, 1st Inaugural, 1801, Memorial Edition; 3:320)⁵

In principle, there are many things that governments could and should do, but the real difference is made by the basic institutional and legal infrastructure effectively enforced as the rule of law and preventing abuse by governments (Tabellini 2004). The research found that in many cases, Thai industrial and environmental regulations are confusing, conflicting and impractical. Certain legal contexts appear to resemble that of a foreign country, but Thailand does not have the knowledge, technology or professional experience to make it applicable. Thus, it appears that some laws and regulations appear to be drafted by inexperienced personnel. Furthermore, it is essential to be aware of legal requirements in order to comply, but the government does not effectively communicate new promulgations in

⁴ Recall that in the areas where Mr. H live, a small factory dispose both industrial and non industrial waste in to a hole they dig in their back yard seriously damaging the soil.

⁵ Tabellini (2004)

R&R, nor does it provide support to stimulate compliance. Hence manufactures are responsible to follow up, comprehend and independently evolve, and will be held responsible if they fail to perform properly.

As stated by the Thai constitution and pertinent industrial laws, the government is responsible for supervision and control. However, there are neither prominent enforcement measures nor supporting activities seen among case studies. The government appears to claim that they have inadequate personnel to do so, something that manufacturers' can disagree with, as current officials have shown to possess minimal knowledge on industrial activities and environmental management. Manufactures are required to submit an annual report but are subject to no regular inspection, only those initiated upon a complaint. However, in regard to a violation, manufactures gave the impression of incongruous punishment and disincentive systems. The question left with us is: is the enforcement apparatus supervising environmental conservation and protection increasingly dependent on manufacturer discretion? If so, CSR can be a promising mechanism for the environmental conservation movement in Thailand.

5.13 The Role of Social Pressure in Thailand

Corporate social responsibility is the result of moral management and voluntary fulfillment of an individual moral duty, compelled by awareness and rational choice. Moral management is manifested by a voluntary response either to an unaddressed externality associated with the operations of a firm or to a voluntary redistribution of profits (Baron 2006). An external social pressure could come from public politics and government, but it could also come directly from citizen preferences.⁶ Industrial environmental restrictions at the international level, specifically the EU, US and Japan as demonstrated in chapter four, reflects

⁶ *ibid*

government responses to citizen apprehension toward the environmental status in question.

In Thailand none of the case studies are subject to domestic social pressure on environmentally friendly products, and are contrarily obliged to sell products at a lower price in the domestic market as specified by market demand. This enumerates that fact that Thai consumers have limited environmental awareness and purchasing power. It is also apparent that product quality coincides with product price, which imposes difficulties on manufacturer operations due to required distinctive processes and material inputs. Manufacturers that pioneered and invest in environmentally friendly infrastructure and machinery can not pass on additional costs to the domestic market, significantly affecting profit. Furthermore, multiple production processes and raw materials institute risk of confusion and errors. Case D's partially developed factory operation was in compliance with RoHS, but errors increased due to employee confusion, and a shipment mistakenly mixed with non-RoHS products was found and rejected by the EU, seriously impacting case D's finances as well as damaging its corporate trade reputation. In response, all operations processes and products produced changed to be RoHS compliant, which Case D considered as CSR in order to absorb the additional costs. This example reflects that social pressures have an important role in stimulating CSR by demanding environmentally friendly products and influencing stringent government control, and assert the fact that global market pressures are the main driving force on EE manufacturers to be environmentally responsible.

5.14 Conclusion

This chapter answers the guiding research questions: why do manufacturers implement CSR, and what are the obstacles. In order to give recommendations regarding each key player, a framework for analysis was presented and expanded using manufacturers' rationale, together with individual perceptions by management in order to complement the framework to determine the main driving force behind

CSR in Thailand. Nevertheless, the results have to be discussed in a wider context to be applicable in other industries. By going back to the research methodology, case studies were selected based on significant environmental impacts, the size of manufacturing plant and export level, in an attempt to reflect on the nature of the Thai export-led economy and the status of environmental management, and therefore can be generalized among private sectors to some extent. By recognizing these aspects, it is easier also to conclude that regardless of the industry's discrete nature, the current level of regulation enforcement and social pressure can not constitute an impetus on private sectors to be socially and environmentally responsible.

The result of this research can be used as a good starting point and guidance for future CSR evolution in Thailand, in terms of creating stimulation and incentive mechanisms. In order to optimize the contribution of this research, it should be more case-specific and should be determined in more detail on a case-by-case basis to incorporate individual rationale and constraints. Yet, it became clear that 'global market pressures' is the main driving force on Thai businesses with predominant international markets.