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The possibility of sustainable concept in developing country

Case study Siam Cement Group (SCG)

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As first we would like to thanks Karlstad University to giving the best chance for us to study Master Degree here. We had chanced to study Corporate Governance that was the started point for us to interesting in Sustainable concept. We have neither known the meaning of sustainable concept nor huge benefit from it. We could say to give the credit to Karlstad University not only providing knowledge to us but also pave the way to our future career. We are not the best human resource to develop our country but we believe that we can be the good driven to promote sustainable concept in Thailand.

We are very proud to born in Thailand we know about the philosophy of sufficient economy that initiate by our King. We just realized that the philosophy has been the fundamental of successful sustainable concept. Our king initiated it before the sustainable concept became popular and promote around the world. Thanks for his sacrificed his time to study and taught his people to understand how to live in the line of sufficient economy.

Special thanks for Siam Cement Group to provide the useful information for us to study and it be the best representative company in Thailand to prove itself to stand with international level and can earn Gold class from Dow Jones Sustainability Indexes.

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Finally we hope our thesis could be the beneficial to the reader in order to understand why sustainable concept didn’t well promote and apply in developing country and in contrast the company in developing country could use our case study Siam Cement Group to be a model to study how can it get successful.

Karlstad University, June 2011

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Satid Handunyaphan          Orn-uma Khompat
Abstract

The era of capitalism give effect to the developing country try hard to compete with trade barrier, dependency and business oppression. As a result they could not afford to applying sustainable concept in their business some argue that the additional raising cost more than benefit as their barrier and they didn’t feel responsibility. In addition the barrier from developed country such as force to drive the developing country to import high technology in order to fulfill environment care with the very high cost could be the obstacle in applying sustainable business.

In our thesis we try to show the barriers from development of sustainable concept in developing countries such as the fast production of Apple’s supplier with the time limitation could ignore the employee’s heath. However, one of the companies from Thailand Siam Cement Group was taken to be our case study to describe how it gets successful in sustainable business. The company has followed the path of sustainability throughout its 96 years and it earned the Gold class assessment from Dow Jones Sustainability Indexes (DJSI). Due the alarm of climate change and the realization of natural resource limitation SCG applied proactive managed and controlled strategy in the company’s operation.

We applied Triple Bottom Line that related to the corporate governance and stakeholder dialog with the business excellence model to identify the successful of sustainable concept. The High Value Added product & service under SCG eco-value was also taken to explain why the company can expand its product to the market and could be the leader with the self-Declaration of environmentally friendly label.

Key words: sustainability, corporate social responsibility, value base service, trade barrier, business oppression
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**Abbreviations**

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>ASEAN</td>
<td>Association Southeast Asian Nations</td>
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<tr>
<td>CFC</td>
<td>Chlorofluorocarbons</td>
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<td>CSR</td>
<td>Corporate Social Responsibility</td>
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<td>DJSI</td>
<td>Dow Jones Sustainability Indexes</td>
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<tr>
<td>CRM</td>
<td>Customer Relationship Management</td>
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<tr>
<td>GDP</td>
<td>Gross Domestic Product</td>
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<tr>
<td>GPS</td>
<td>Global Positioning System</td>
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<tr>
<td>HFC</td>
<td>Hydro fluorocarbon</td>
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<tr>
<td>HVA</td>
<td>High Value Added Product &amp; Service</td>
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<tr>
<td>RFID</td>
<td>Radio Frequency Identification</td>
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<tr>
<td>SFPI</td>
<td>Sustainable Forest Products Industry</td>
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<tr>
<td>TBL</td>
<td>Triple Bottom Line</td>
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<tr>
<td>UNEF</td>
<td>United Nations Emergency Force</td>
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<td>WBCSD</td>
<td>World Business Council for Sustainable Development</td>
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<td>WCED</td>
<td>World Commission on Environment and Development</td>
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<tr>
<td>WWF</td>
<td>World Wide Fund For Nature</td>
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<tr>
<td>3R</td>
<td>Reduce, Reuse/ Recycle, Replenish</td>
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1. Chapter 1: Introductions

1.1 Research Background and Motivation

There are many key factors, for instance, economy, environment, social well-being and so on, that influences in different global areas. The natural problem is huge and very hard to determine. Consequently, these issues have negatively affected the developing countries, which have poor economies, lack of care for the environment, irresponsibility toward the society as well as poor organized authorities with high levels of corruption. They have faced the problems related to the trade barrier from developed countries that make them more difficult to apply the sustainability concept to their company.

Most of GDP in developing countries is generated from Off shoring activities which fulfill the needs of huge multinational corporations from developed countries. These activities have enormously changed all business models, and enforced the company in developing countries to follow, develop and control its business opportunities. (Erber & Sayed-Ahmed 2004)

Trade barrier – Cost effects is the one reason, such as exporting products to developed countries that must receive certificates and traceability schemes to comply with the requirements of those countries or unions which concern in the sustainable concept. Therefore, companies in developing countries need to develop themselves for catching up an economic and business chance (Shaffer 2001). For example, Montreal Protocol (Montreal Protocol on Substances That Deplete the Ozone Layer). Montreal Protocol requires State Parties to stop using CFCs, chlorofluorocarbons, in the electronics industry in developing countries (UNEP 2010). As a result from regulation, they claimed that it needed to purchase HFC 134a to replace CFCs in the production of air conditioning and a refrigerator. Furthermore, HFC 134a is patented and also costly to use it in their industry, affecting production costs. Thus, the company which wants to export their products to those developed countries has to comply with these regulations according to sustainability and environmental concern.

In fact, the requirements from developed countries can be counted as advantageous to developing countries. It makes the developing countries concerned more about environmental and social performance than just shareholder concerns

On the other hand, the negative effects may come from the difficulties to achieve the requirements. Thus, developed countries need to support them in knowledge, technology and showing how to implement it according to its proper sustainable concept.

However, most of the company in European countries and other developed countries focus on the sustainable concept and apply it to their business. On the
other hand, the companies in the developing countries ignore and argue that this concept might not be practical to their business and they believe that the sustainable concept may increase their cost of operation and affect their performance. However, there are possibilities to use this concept in developing countries and branches of the multinational enterprise, which has already applied this concept.

According to the barriers and conflict of Sustainability implementation and development, we believe that Sustainable concept and its tools can help us to mitigate gaps between Trading vs Environment and Social concern. Form this paper, we have chosen and studied one of the sustainable companies in developing country to proof its success from sustainability implementation and development. Moreover we also aim to encourage other companies in developing country to apply this concept by using the result from our paper as case study. Siam Cement Group (SCG) has been chosen as the case study in this paper because of the company’s success in the sustainable concept implementation.

SCG’s sustainable concept relies on the international sustainability standard (Dow Jones Sustainability Indexes) and also develops parallel with philosophy of sufficient economy that is initiated by His Majesty the King of Thailand to ensure sustainable development. (Siamcement 2009)

Furthermore, in the year 2009, SCG earn “Gold Class” assessment from the global leader in sustainability rating, Dow Jones Sustainability Indexes (DJSI), for a second consecutive year. Moreover, one of the companies under SCG, SCG paper is a member of the Sustainable Forest Products Industry (SFPI) of the World Business Council for Sustainable Development (WBCSD). SCG, including their regional in oversea countries, has performed the sustainability development for a long time. The success of SCG will be the good practical model for the other companies to follow. (Siamcement 2009)

1.2 Problem

According to description in the background part, Sustainable implementation and development are difficulty to proof its successful in developing countries and only few companies to comply with these concepts. Those companies in the developing countries are ignorant and argue this concept that it might not be practical to their business and they believe that the sustainable concept may be increased their cost of operation and affect their performance.

Another problem may come from business oppression. For example in China, business oppression comes from developed countries’ markets or companies force their suppliers to speed up the production without any argument that make the companies have reduced social responsibility especially to their employees which causes a problem of child labor, an excessive working hours and finally the biggest risk of lagging health and safety standards in its industry. (Santow 2011).
Salzmann et al. (2005) give a different perspective to this concept on the benefit of CSR. They mentioned that it is still indecisive to affirm that the company’s financial performance benefits from CSR implementation, according to research to date. Moreover, Beger et al. (2007) also claims that CSR is expensive when compared cost to benefits and difficult to implement. There are time consuming as long term results and difference in implementing for each different industry.

However, most of developed countries have implemented this concept for many years. Most of companies are successful in this implementation such as BMW (Germany), Nokia (Finland), Royal Dutch Shell (Netherland), Air France – KLM (France), IKEA (Sweden) and Starbuck (USA). Mcwilliams (2001) states that there are many companies turning themselves around to become sustainable companies and also included those concepts into their strategies and policies.

Many researchers have agreed that sustainable development and CSR might be beneficial for companies such as financial performance, increase the company’s innovation from internal, and especially create good relationship with stakeholders (Comfort et al. 2007). In addition, Sebhatu (2010) mentioned that CSR might mitigate the company’s conflict with all stakeholders and lead the company to initiate credibility, accountability and reputation to their corporations. Furthermore, Enquist et al. (2006) said that whenever Sustainability beneath CSR Concept was applied to company’s business strategy, code of conduct and on a practical level, stakeholders’ value will be created that it make company gain profitability to company for long-term outcomes.

1.3 Research Purpose and Aim

In this paper, we have studied why the company in developing countries believes that Sustainability concept could not be applied and performed in their business. The purpose of this research paper is to present the result of implementation and development in sustainable concept in developing country about why and how some companies can be fully apply and achieve due to the concept of implementation and development. How the companies form a relationship between themselves and stakeholders by using sustainable concept, corporate social responsibility concept and the concept of stakeholders to conduct the sustainable process for the business now and in a long-term perspective.

Research Questions:

1. What are barriers of Sustainable Implementation and Development in developing countries, how to deal with the limitation and get out of the confinement beyond the business oppression in the capitalized market?

2. Case study of SCG: SCG as a company model of developing countries’ company, how the company get successful to apply sustainable concept to its business beneath an economic pressure under the capitalism?
2. Chapter 2: Research Methodology

2.1 Research Design

2.1.1 Theory and Research
The meaning of theory is normally refers to the explanation of observed regularities. Theoretical perspective is constituted from the relationships of research finding. (Alan B. & Emma B. 2007) Moreover, theory occurs from repeated observation and testing and incorporates facts, laws, predictions, and tested hypotheses (psychology 2010).

2.1.2 Research approach
There are two approaches of logical reasoning which are deductive and inductive approaches. According to Kenneth (2000), deductive reasoning is the process of testing theory which commences with an established theory or generalization and tries to find out if the theory applies to specific instants. According to our report we apply case study analysis as the primary sources of study. As a result deductive approach is employed to conduct our research, it begins to study by creating the specific way of thinking and comes up with general idea to support.

2.1.3 Qualitative Method
Qualitative enquiry is usually in the form of case study that can be described with the in-depth study of particular instance (Kenneth 2000). The qualitative method is applied in this thesis; it is a research strategy that usually emphasized words rather than quantification in the collection and data analysis (Alan B. & Emma B. 2007).

2.1.4 Case study method
Case study emphasizes detailed contextual analysis of a limited number of events or conditions and their relationships (ischool 1997). According to Bruns & William (1989) they review Yin’s case study research: design and method, Yin stated that case study is an empirical inquiry that investigates a contemporary phenomenon within its real-life context when the boundaries between phenomenon and context are not clearly evident and in which multiple sources of evidence are used.

This thesis applies Siam Cement Group (SCG) to be our case study in order to study how it can become successful in compliance of sustainability although it located the region of developing country. Moreover, we seek many articles to support and argue with case studies to ensure that it is the appropriate answer to the research question is reached.
2.2 Data Collection

Secondary Data
For the benefit to the researcher, secondary information is very important to gather data which is connected to research question. Secondary data composes both internal and external sources; internal source is the information acquired from the organization where research is being carried out and external source is obtained from outside sources. (Steppingstones 2004) In this thesis the most of secondary data came from online sources. The SCG Company’s website is the relevant information. We focused on the latest Sustainable Report in year 2009 for the study purpose.

Scientific article is other sources for the gathering of important information to study and analyse the research question.

2.3 Data Analysis
The basic of secondary data is the study of pre-existing data so the way to analysis it depends on the different research question.

For this thesis we analysis the empirical studies from case study SCG with the theories concerning Sustainable development, Corporate social responsibility and Corporate governance. This thesis wants to discuss about the sustainability in developing countries so in analyzing we will compare the structure of economy between developing and developed countries. Economy is the one of major factor for the root cause of barrier for the developing countries to adopt sustainability.

2.4 Data Limitation
Because of using case study in thesis there is the evidence that states it has the restriction from external validity. It argues that it is not the purpose of this research design to generalize to other case or to population beyond the case. (Alan B. & Emma B. 2007) The basic information of secondary research is questionable so it should be scrutinized closely. Evaluation of the validity and reliability of the information should be done by evaluating how to gather the information. (Knowthis 2010) Moreover, the out of date information from secondary data may offer less valuable to the researcher.

Our thesis is faced with the limitation from the using a case study may contain the biased sampling because specific choice. Our limitation to accessing this information, we have use information from the company’s website. The company’s information may contain biases and show the positive side only.

2.5 Reliability
As using secondary data in this thesis, it has to be considered that some problem may occur. The researcher has to be careful when applying of secondary data. Secondary data differs from primary in the part of the estimation inaccuracies in measurement through the standard deviation and standard error, but it is not
present in secondary data. The reliability of published statistic may vary over time. (FAO 2010)

In order to make sure secondary data used is reliable and trustworthy in collecting. We have made contact with the responsible person from SCG Company, he is the Marketing Executive in Thailand to making sure that information from its website is reliable. The sustainability report had certified by PricewaterhouseCoupers so it is guaranteed that report is reliable.

3. Chapter 3: Literature Review

3.1. Part I : Background for Sustainability Framework

3.1.1. Sustainable development in business

Mostly, the definition for sustainable development is the development of meeting the current need, stated by World Commission on Environment and Development (WCED), without compromising the ability for future generations. The definition has root fundamental principles; intragenerational and intergenerational equity also contains of two key concepts of needs and limits. Sustainability requires meeting and extending opportunities to satisfy the basic needs for a better life. The concept of limitation recognizes technological and social organization imposes the limitation on ability of environment to meet current and future needs. Therefore, demands on the natural environment must be moderated. (FATHOM 2011)

The sustainable development, defined by the UNEF and WWF, is the development that provides real improvement in the quality of human life and at the same time conserves the vitality and diversity of the Earth (The Brundtland Report 1987). (UNCED 1987) TBL is placed on the global agenda that focuses on the economic, social and environment bottom line to people in order to balance the equilibrium of needs and resources (Henriques & Richardson 2004).

During the world CEO Forum discussed the overreaching theme: “Vision for sustainable tomorrow business as a game changer”, this stated with three pillars to focus on 2050: The new agenda for business, Green Economy: a transformation to address climate change and multiple crises, and water: the new challenge for the 21st century. All of these studies were a pathway lead to 9 billion people living well with the limitations of resources in the planet by 2050. (WBCSD 2011)
I. The Triple Bottom Line (TBL)

In 1994, John Elkington coined the term *triple bottom line* by developing 3P formulation, people, planet and profit. Continuing in 1997 John Elkington’s *Canibals with Forks: The Triple Bottom Line of 21st Century Business* offers an inspiration metaphor that challenges contemporary corporations to simultaneously deliver the triple bottom line (TBL) of economic prosperity, environment quality and social equity. By adopting this formation, companies are able to take more systematic and sustainable approaches to managing business risks, staying attuned to the society and opportunities, as well as potential problems. (Henriques & Richardson 2004) Sustainability as development meets the needs of the current world without compromising the ability of future generations to meet their own needs. TBL concept appears to have had some successes in articulating a philosophy of sustainability in a language accessible to corporations and their shareholders (UNWCED 1987). The concept of TBL is based on the responsibility of stakeholders in order to create company’s value. This aims integrates among three aspects, including environmental, social and economic aspects (Henriques & Richardson 2004). Additional, Ventureline (2010) states that a sustainability concept is balance a simultaneous of three aspects.

Economic prosperity

The economic component of TBL normally refers to financial performance, but there are the differences between the finance and economic performances. The meaning of finance is the provision of money when required for consumption or for investment in commerce, whereas economics usually refers to the society uses human and natural resources in the pursuit of human welfare. The economic performance of an organization extends beyond financial and is linked to both social and environmental dimensions of sustainable development. (Henriques & Richardson 2004)

According to Porter (1998), the wealthier economy requires innovation to support rising wages, improve efficiency of job and shift to operate in the low-cost areas by expanding the company’s standard of production. He also stated that to develop the economic, this should start with expanding internal trade among cities and trades with neighboring countries. These are very important steps to building the skills in order to complete globally. For the new economics of completion, the most important thing is not about input and scale, but it is the company’s productivity. Productivity on how company competes not about the fields it competes in. (Porter 1998)
Environment quality

Elkington (1999), suggested that the basic challenge of many company from the term triple bottom line was greening, that is making business more efficient and trimming costs. The aims of doing environment quality are managing and carefully to using energy and resource as well as reducing manufacturing waste and toxins before disposal towards the environment in a safe and legal manner. (Henriques & Richardson 2004)

The increasing of environmental concern required more responsibility for the company’s actions. The company’s performance could be measured, monitored and reported by using the guidelines from environmental performance frameworks. (Sherwood 2007)

Social Equity

Social in TBL maintained that the licenses to operate are justified by the ability of an organization to contribute towards the social welfare and quality of life (Henriques & Richardson 2004). The existence of licenses can be revoked the discrepancies between the values of the stakeholders and the values of the business. The notion of values aligns with the initial concept of TBL, which referred to corporations and their capacity to create or destroy value within the economic, social and environmental dimensions (Elkington 1999).

II. Business Excellence Models

The objective of sustainable development is to satisfy basic needs for all humans in balance with a healthy natural environment. The company should optimize production by mixing between social and economic factors then distribute the outcome at the same time. The process of sustainable development concerns with five core values and these values are the basic of Business excellence model. The important points are all values should reflect the effects on local, regional and global level as well as the implications on personal and societal sustainable performance: (Garvare & Isaksson 2001)

1. Sustainable Stakeholder Balance: The long-term balance between the interests of all stakeholders forms a basis for sustainable development.
2. Learning Excellence: The continuous learning of individual, organization and societal is required in order to reach the sustainable development. The result from good learning creates an improvement and innovation as well as flexibility to adapt with rapid change also needed. Sustainable development is guided by learning the values.
3. Process performance excellence: Transformation from stakeholder interests to satisfy stakeholders is the global process. Process performance excellence is defined as the effective and efficient management processes. The process has
to do with the maximizing stakeholder value in the long term perspective as well as the balancing between the interests of all stakeholders should be maintained.

4. **Stakeholderocracy**: Sustainable development is based on integrity and respect for all stakeholders. Democratic value is used for the participation of stakeholders. They have the right to speak out their opinions without the fear of retribution in its expression. Respect and formal authority are earned thought competence, maturity, responsible stewardship, humility and faithfulness to core values for sustainability.

5. **Transparency**: The long-term balance of all stakeholders should be done by opening information with equality. Opening information of compliance with performance standards for management and employees leads to fair and transparent competition.

In the modification of business excellence model, the triangle “person-organization-society” created the excellence for sustainable development. Excellence is required on all levels, including personal and society excellence and simultaneously retaining customer focus. Current models of business excellence, based on the value of total quality management and it was driven by market economy.

### 3.1.2. Corporate Social Responsibility

According to Enquist et al (2006) stated that the understating of CSR mean the voluntary integration of social and environment concerns into business and interactions with stakeholders. Social responsible investment and corporate social responsibility are the fields of growing importance in many countries (Mallin 2010). The change to shareholder strategies to a social harmony strategy may be experienced, balance between shareholder needs and needs of other stakeholders(Enquist et al 2006). CSR concept is the process of creating economic benefit for the company’s shareholder as well as responsibility for relevant stakeholders. CSR also assists to mitigate conflict with all stakeholders and move to building credibility, accountability and reputation to the company. (Sebhatu 2010) Moreover, Gill (2008) stated that a new form of integration between corporate social responsibility and corporate governance is known as social responsible investment or ethical investment. Social responsible investment puts business ethics, environment and social concerns together with corporate governance principles.

The compliance with CSR concept will create the stakeholders’ value and increase the profitability in long-term to the company. The world Business Council Sustainable Development states that CSR is the continuing commitment by business to behave ethically and contribute to economic development while
improving the quality of life of the workforce including their families and also improve both local community and large part of society. (PRLog 2007)

I. A model for values-based service businesses

The value base on the core company values, the foundation value included social and environmental responsibility, and the customers’ values. The logic of values drives the business strategy in the form of design of business model, the description of business goals and the performance alternatives. This logic of values must related to the values of customers. Five principles for a sustainable values-based service business can be derived: (Edvardsson & Enquist 2009)

Principle 1: Strong values drive customer value

The strong relationship among customers’ values and the values of the wider society, strong corporate values create energy and guide the way of business development. The clear vision and strong sense of mission have ability to create the innovation service business. Values are dynamic, and can express in many ways over time and can become stronger in the sense that they become clearer, more relevant, and better included in the business model. In developing a sustainable values are pre-eminently important in the company’s relationship including staff, partners, suppliers, shareholders, the media and the most important its customers.

Principle 2: CSR as a strategy for sustainable service business

Sustainable values-based service businesses have a strong commitment to corporate social responsibility. Social and environmental responsibilities contribute long-term profitability. Proactive way in adopting CSR, companies think “laterally” in finding for “smart” solutions. The logic of values drives the logic of value creation.

Principle 3: Values-based service experience for co-creating value

Many services experience-based so the test drives of service by customer are created this aim is to provide customers with service experience, before acquisition and consumption. When a customer’s basic requirements are met, the different issues are made and these issues are usually values-based.

Principle 4: Values-based service brand and communication for values resonance

Brands are living expressions of what a company stands for. If the company overstates what its product can do but subsequently it fails to do, this creates adverse reactions. Values-based brands must incorporate values that are attractive to customers and avoid associating with unfavorable values. Values resonance (both within the organization and outside it) is essential for a sustainable values-based service company. The basis of CSR strategy to ensure that service brand is in resonance with a company’s value, the customer’s values, and the values of the
Principle 5: Values-based service leadership for living the value

To secure sustainability, a values-based company needs a strong, values-based leadership. A company built its entrepreneurial business model base on entrepreneur’s values and leadership style as a model for future generation of leaders. The challenge for subsequent leaders is to develop these values and communicate what they mean today.

Many companies apply the sustainable development and the important of values based stances with respect to the environment and social responsibility. (Edvardsson & Enquist 2009) See Appendix 1 to see the relationship between 5 principles.

Example for a model for values-based service businesses, we study from YKK as our example company that is successful to apply a concept of values-based service businesses to its company. Although YKK products are only a small component of component in a textile industry, but why do most of people call for YKK as a must in their production. YKK brand was relied on for its quality by consumers and purchasers. Due to the company responsibly to stay one step ahead of its industry, YKK always drives itself to follow new trends and styles. YKK creates its brand value by responding to its customer’s needs and challenges and reacts quickly and efficiently. Moreover, YKK has a strategy to be a partner of its customers and get involved in its customers’ producing process then continuously inventing new products by adjusting unmatched precision to serve its customer needs. This shows the care, knowledge and imagination that the company included in its products. As a result, it can encourage a strong values by driving customer value, brand value and confident of its quality of all products that satisfy all customer needs. (YKK 2011b)

3.1.3. Corporate Governance

Corporate Governance is the systematic concept that directs and controls over the management by focusing on the distribution of the right and responsibility in the company. The new corporate governance concerns more about the issue of ethics, accountability, transparency, and disclosure in order to protect the large stakeholder’s interest. (Mallin 2010) The prior corporate governance concerned only the business or economic to maximize the profitability of the company. This aims to create an optimum return to shareholders in the form of dividend and Capital gain as a result the business ignoring philosophy of ethic (Gill 2008). Based on Robert (2001), states that the arise of code of business ethics that associated with the development of new social and environmental metrics to audit and measure such conduct will serve to inhibit rather than promoting the exercise of moral sensibility within the conduct of corporate life. He also stated that ethics
is not the role to be followed but as felt responsibility for my neighbor. (Robert 2001) The combination between social responsibility and ethics provides many benefits to all stakeholders not only shareholders. Nowadays, corporate governance has applied with corporate social responsibility concept which would develop and improve the internal mechanism for benefit in the long-term perspective and increase the investor’s confidence. A company that is well governed is one that is accountable and transparent to its shareholders and other stakeholders. Better corporate governance allows companies to recognize and act to fulfill their environmental and social responsibilities. Accordingly, it contributes long-term, sustainable growth. (IFC 2011)

I. Stakeholder Theory

The new corporate governance changed to emphasize to the stakeholder perspective rather than only shareholders’ interest (Johnson 2008). Stakeholders comprise all groups of people who effect and are affected by the company’s objectives. Each member is not only creating value to these groups, the group members’ forms the management structure and monitoring performance of different corporations as far as governance is concerned. The stakeholder’s right should be comprised with two perspectives; one is the right to be compliant with the law of a given country to enable them to operate and secondly is that mechanism of stakeholder performance as well as access to information should be made legitimate to them. (Mallin 2010)

Due to the changing concerns of stakeholder perspective of the company is also applying sustainable development to their businesses. The business sensibility can be affected by other stakeholders, such as employees, suppliers, NGOs, governments, communities not only customers. The way to encourage stakeholder value is using TBL as a framework and stakeholder dialogue as a tool in order to guide the improvement process for the business’s quality. (Johnson 2008) Kaptein & Van Tulder (2003) stated that the proper dialogue increases the understanding of environment and has ability to face with dilemmas activity.

3.2. Part II Background for sustainability development and implementation in developing country

3.2.1. The capitalism and Inflow of capital to developing countries

For nowadays, there is a question that raised most strongly concerns the fundamental of capitalism and whether it must be changed. Some responders of liberated capitalism who resists change are persuaded that capitalism is criticized in various ways that are the cause of short-term economic problems. Inefficient
Governance and bad behavior of some individuals are motivated to cause the problems. It seems the existing economic arrangement needs to be reformed, looking for an alternative approach it might be “new capitalism.” (Sen 2009)

For new capitalism, it concerns not only maximizing profits on market economy based on personal entitlements confined to private ownership, but also on many other social responsibilities, such as maintaining public security, provision of education, health care foundation and other activities given back to society. (Sen 2009)

A lot of foreign capital has flowed to developing countries especially Asia and Latin America since 1990. Benefits from Capital inflows have been appreciated to developing countries and all parties. For the capital-rich developed countries, they come to invest beyond a desirable way of diversifying risk in productive assets investment. For the relatively capital-poor developing countries, they gain benefits from foreign funding and investment, which has promoted economic growth. (Guillermo et al. 1996)

### 3.2.2. Offshore outsourcing

Over the last 37 years, textile, automobile and steel manufacturers have produced or assembled by offshore outsourcing in the developing countries. And now it is IT industries both of service and production. During offshoring era, huge multinational corporations were established and they make profits to those developing countries which turnover easily exceeds the GDP of most developing countries. It means those developing countries need to maintain the benefits and do so in any way so as to achieve and satisfy the order from developed countries. (Erber and Sayed-Ahmed 2004)

Offshoring, it is defined as relocation of business activities such as production, distribution, service and R&D activity to reduce cost of operation from outside national borders. Offshoring can be represented in the context of both production of goods or services moving off-shore. (Erber and Sayed-Ahmed 2004)

The developed countries’ companies believe that the outsourcing partner (developing countries’ company) can assure high quality of work with the lower processing cost, modern facilities and international quality standard guarantee. At the same time, they can monitor the production process from outside and dedicate themselves entirely to create value to their business and develop their core competencies. (Erber and Sayed-Ahmed 2004)

Therefore, developing countries’ companies who need to be Offshoring Company have to follow the instruction, code of conduct and social responsibility policy of their mother companies. However, beneath the business competitive environment and business oppression, some of sustainable activities and code of conduct may be ignored or overlooked due to the time limitation and cost constraint. This is a
conflict between a sustainable activities and a real business environment that Offshoring Company in developing countries needs to balance and adapt themselves to survive in the competitive environment. (Erberand&Sayed-Ahmed 2004)

3.2.3. The barriers of sustainability development and implementation in developing country

In generally, the barriers of sustainability development and implementation in developing country caused from various factors. In this paper, we have discussed the barriers through the macro perspective which are conflict between developed and developing countries. And we also illustrated each barrier by giving examples.

I. Trade vs Environment: dilemma for developing countries

How to relate between “Trade and Environment”? Due to developed countries having set and enforced to use the environmental and health measurement for widely countries, especially products which imported from developing countries. Most of those products are derived from natural resources and agricultural products.(UNEP 2010)

Most developing countries do not want developed countries to raise environmental issues to be a trade barrier and import banned. On the other hand, the developed countries need rules that allow using the control mechanism to ensure imported goods will not be harmful to the health of consumers. Besides, manufacturing must not cause environmental problems and affect everyone on Earth.(UNEP 2010)

Thus, developed countries counted on “Eco-dumping” to support its proposal that countries that have had low environmental standards they will have cost of manufacturing lower than the countries with higher environmental standards. There is one method of supporting industry called “Subsidy” that developed countries claim the right to respond such subsidies by environmental measure, healthy policy and the high tax rate barrier (Tariff barrier). (Xu 1999)

A good example is the conflict between the TRIPS Agreement and the Montreal Protocol. Montreal Protocol requires State Parties to cancel using CFCs or chlorofluorocarbons in their industries. Montreal Protocol mentioned that HFC 134a could replace CFCs. However, HFC 134a is patented in many countries and to be costly for electronics industry in developing countries. (UNEP 2010) (Greenpeace 1997)

By summary, developed countries hold almost information and environment scientific research. If there is any disputation about environmental standard, it is
difficult for developing countries to argue against in the process of disputing resolution.

II. **Trade barrier**

Trade barrier – Cost effects is the one reason, such as exporting products to developed countries that must receive certificates and traceability schemes to comply with the requirement of those countries or unions which concern in the sustainable concept. Therefore, companies in developing countries need to develop themselves for catching up economic and business opportunities. (Shaffer 2001)

For example, Montreal Protocol (*Montreal Protocol on Substances That Deplete the Ozone Layer*). Montreal Protocol requires State Parties to stop using CFCs, chlorofluorocarbons, in the electronics industry in developing countries (UNEP 2010). As a result from regulation, they claimed that it needed to purchase HFC 134a to replace CFCs in the production of air conditioning and a refrigerator. However, HFC 134a is patented and also costly to use it in their industry, affecting production costs. Thus, the company who wants to export their products to those developed countries, they have to comply with these regulations according to sustainability and environmental concern. Moreover, the latest amendment of HFC is about a licensing of HFC imports and exports, and ban to imports and exports to non-Parties. It makes more difficult to other developing countries who are not a member of United Nations Environment Program (UNEP). (UNEP 2010)

According to the above example, Montreal Protocol benefits to the chemical industry in developed country, which they have been very successful in safeguarding its continued profits through the prolonged use of these obsolete technologies in developing countries. Montreal Protocol permits CFCs to use in developing countries until the year 2010, and HFCs until 2040. (Greenpeace 1997)

III. **Business oppression, Lack of awareness and Unrealistic prices from foreign buyers**

According to offshore outsourcing, developed countries’ companies believe that the outsourcing partner (developing countries’ company) can assure high quality of work with the lower processing cost, modern facilities and international quality standard guarantee. At the same time, they can monitor the production process from outside and dedicate themselves entirely to create value to their business and develop their core competencies. (Erberand&Sayed-Ahmed 2004)

However, companies who need to be Offshoring Company have to follow the instruction, code of conduct and social responsibility policy of their mother companies. Under the business competitive environment and business oppression, some of sustainable activities and code of conduct may be ignored or overlooked
due to the time limitation and cost constraint. This is a conflict that Offshoring Company in developing countries needs to balance and adapt themselves to survive in the competitive environment. (Erberand & Sayed-Ahmed 2004)

We brought an example of “Apple Incorporation” to show the problem of incapable applying a real sustainable concept to the company in Developing Country due to business oppression.

Apple is the company who faces trying to source goods from China and other developing countries, which hire the electronic company with low-cost labor and high efficiency to produce the famous stuffs, such as iPhone, iPod and iPad, for supporting the huge demand of people consumptions. Due to the high demand of the technology consumption, Apple has to enforce its suppliers to increase the speed of production. All of these causes affect to other problems such as the lack of awareness in their employees and their local environment. From this incident, Repetitive Strain Injury (RSI) will be occurred repeatedly as long as the problem is not recognized, and the speed of production line is still very fast with deskilling job, very repetitive movements. Finally RSI will make a chance of getting injury be higher (Santow S. 2011)(Barboza D. 2011) (Apple 2011)

By summary, due to Business oppression and Unrealistic prices from foreign buyers, the developing countries’ companies have to do by any means possible accomplish its order without the concern of social responsibility, though they need to comply with requirements and codes of conduct from the ordering company. As long as the developed countries’ companies still push and oppress the demand and huge orders with a limited time and lower cost of production, the problem will be continued and expand to be a huge problem and difficult to solve. (Barboza D. 2011) (Apple 2010)

4. Chapter 4: Empirical Part

4.1 Case study Siam Cement Group

4.1.1 Company Background

Siam Cement Group Company (SCG) Profile

The Siam Cement Public Company Limited was established nearly 100 years ago, following a Royal Decree of His Majesty King Rama VI in order to eliminate reliance on imports of cement, as well as fully using own country natural resource. The goal is to diversify and meet the economic growing in Thailand. SCG established and participated in new industries under the name Siam Cement Group (SCG). Moreover, SCG comprises over 100 companies under 5 business groups, employing approximately 24,000 employees, and handling more than 64,000 product items. (Siamcement 2010c)

The Group continually rejuvenates itself to sustain business leadership in Thailand
and the region, while being internationally competitive that successful are in the line of good corporate governance. Effective monitoring, controlling, and evaluating system are properly in place to ensure transparency, disclosure and verification in every step of operations for the mutual interests of all stakeholders and for sustainable growth. In addition to business excellence, SCG pledges to contribute to the community which it operates in the hope of developing the quality of life for people in the community. (Siamcement 2010c)

**Vision**

“In the year 2015, SCG will be well recognized as an innovative workplace of choice, and a role model in corporate governance and sustainable development. By 2015, SCG act as a regional market leader, contributing to the sustainable progress of ASEAN, and the local communities where SCG operates. SCG are committed to creating value for its customers, employees, and all other stakeholders, based on the corporate governance principles. By 2015, SCG will have developed a more diverse workplace with customer-centric mindset and global perspectives.” (Siamcement 2010c)

**Corporate Profile**

SCG has employed two key strategies in its organizational development: expanding its business in ASEAN, and developing high value-added, innovative products and services. Govern by SCG’s policy to conduct business within a sustainable development framework. (Siamcement 2010c)

**Business Line and Products**

**SCG Chemical**

SCG is the largest integrated producers of petrochemicals in Thailand, and a key industry leader in the Asia-Pacific region. SCG Chemicals is committed to higher efficiency of manufacturing processes and product distributions. SCG Chemicals extend its product to the international market in order to diversify risk from market volatility and increase the company’s future growth. (Siamcement 2010c)

**SCG Paper**

SCG is the largest integrated manufacturer of paper products in Thailand and ASEAN. Its products have gained wide acceptance in both domestic and international markets for their world quality standards. SCG Paper enters into the member of the Sustainable Forest Products Industry (SFPI) of the World Business Council for Sustainable. SCG expands its markets into ASEAN region to support the future growth. (Siamcement 2010c)

**SCG Cement**

SCG is the producer and supplier of cement, ready-mixed concrete, concrete products, white cement and refractory. SCG Cement has expanded its investment in both domestic and regional markets, the establishment of ready mixed concrete
plant network in ASEAN. SCG Cement affiliates with the Cement Sustainability Initiatives (CSI) under the World Business Council for Sustainable Development (WBCSD) to define and participate in the cooperation among cement industrial members regarding the environmental and social stewardship. (Siamcement 2010c)

**SCG Building Material**
SCG is the leader in the manufacture of building materials and home decoration in Thailand and ASEAN. Its products emphasize in consistently for the innovation of high value added products that are concerned with the environmentally-friendly. (Siamcement 2010c)

**SCG Distribution**
Its distribution covers both domestic through its dealer network nationwide and international trading through its branches and network worldwide. SCG distribution has developed retail business concept under Home mart shop and adopts Customer Relationship Management (CRM) with its dealers throughout the country. SCG also use Radio Frequency Identification (RFID) together with Global Positioning System (GPS) and online mapping system, used for advanced tracking and enabling on-time delivery. These are examples of the latest innovative information system and technology adopted to effectively meet the needs of its customers. (Siamcement 2010c)

**Code of conduct** (Siamcement 2010c)
1. **Interpersonal Rights and Freedoms** – SCG protects freedom of employees from the violation of using personal information. All employees have equal right and they should be treated fairly.
3. **Giving and Receiving Benefits that Could Influence Decision-Making** – SCG’s business conducted correctly, honesty, and in ways that are certain not to course condemnation.
4. **Conflict of Interest** – SCG avoids conflicts of interest between each party because it may affect each decision making to the company. All employees’ performances according to each duty must be relying on SCG’s interest base on law and ethics.
5. **Procurement** – Procurement is to be conducted according to the procedures established by SCG, and should be fair to all parties involved.
6. **Transactions with the Government** – Transactions with the government must not be such as to persuade the government or government officials to do anything wrong or inappropriate.
7. **Information and Assets** – Ensure that all SCG assets should be wisely and effectively used. All assets should not use for the benefit of any individual.
8. *Communications in Marketing* – Advertising, public relations, and product and service exhibitions must represent reality and must be fair to all parties involved.

9. *SCG’s Transactions* – The transaction among companies in SCG, employees and others involved must abide by the laws and regulations relevant to each locality.

10. *Doing Business Abroad* – When SCG operates in abroad must comply with each country’s laws and rules.

11. *Business Competition* – SCG trades with the ethical manner and fairly compete with other companies and complies with the laws governing competition in every country.

12. *Anti-Laundering Measure* – SCG complies with the suppression of money laundering’s law. SCG did not allow to anyone using SCG as a channel to dispersion or concealment of illegally obtained assets.

**Corporate Governance**

SCG has operated businesses with the philosophy of sense of responsibility towards the best interest of its stakeholders as well as the aware of all environments and well being of society. SCG sees its corporate governance and Code of Conducts as the essential guidelines for the organization. The principles include a clear outline of the structure, components, duties, independence and the performance of the Board of directors, transparency of information disclosure, a strict auditing system and risk management policies. These build trust and create additional value among the shareholders and fairly treat to all stakeholders. The material has been divided into three main sections; (Siamcement 2010b)

1. **Structure, Composition, Duties, Responsibilities, and Operation of the Board of director**

Board of directors’ act as the shareholders’ representative they have duties to determine the business vision, mission, and policies in order to develop the competencies for SCG to complete at a global level. They should concern with risk management and corporate governance system to be aligned to international standards of recognition. All of Boards of directors in SCG are elected based on the principles of Stock exchange of Thailand. (Siamcement 2010b)

2. **Practical Guidelines Concerning Management and Internal Controls**

In order to serve the good guideline to the employees, SCG sets up code of conduct and policies of good corporate citizenship that applies wherever it has operations. SCG also strictly complies with all laws and pays taxes in full and contribute to social well-being. SCG has specific internal control and auditing system to apply throughout business unit to build moral and ethical awareness to all SCG’s family. Audit committee has been assigned to give the direction, controlling and evaluating risk management within company. Dealing with
conflict of interest SCG discloses all information and prohibits the director from participating in the decision-making process if any of them has involved in gain or lose from such transactions. (Siamcement 2010b)

3. **Conduct Towards Stakeholders**

Board of directors has duty to protect the right and interests both large and small shareholders. Moreover, all shareholders have right to express their own opinions and make recommendations throughout the various channels which are provided by company. Not only shareholder SCG also conducts business with fairness and respect for the right of stakeholders in order to instill their confidences. (Siamcement 2010b)

4.1.2 **Structure of Sustainable Development Management of SCG**

Sustainable Development Committee has established based on the principles of sustainable development. SCG president comes from president of Cement Business and other business unit’s presidents join as the SCG Sustainable Development Committee members. Moreover, SCG establishes business-wide and companywide sustainable development committees to ensure that all policies and action plans are effectively deployed and implemented. (Siamcement 2009)

![Diagram of Sustainable Development Committee](image)

**Figure: Sustainable Development Committee (SCG sustainable report, 2009)**

Sustainable development committee work focuses on three aspects of sustainable development as the follows: (Siamcement 2009)

a) Enhancing the effectiveness of environmental focusing to improve the database covering sustainable development-related activities.

b) Activities and projects concerned with the innovation of environmentally-friendly products and services and Stakeholder Engagement program at the corporate level.
c) Activities to support business expansion into ASEAN, such as the implementation of Safety and Environmental Performance Assessment Program for Overseas Operations.

### 4.1.3 Implementation of sustainable Development

#### A. Risk Mitigation

The concept of sustainable development is a root core of SCG business foundation and emphasizes on the ethical business conducts and responsibilities. SCG has applied sufficient economy as a model for business operation as a result SCG can survive through past and present crisis. In addition, SCG has proactively managed and controlled environmental, social risks to be with the lowest practicable level. The company has considered all issues that may affect the company’s ability to achieve sustainable development such as; (Siamcement 2009)

**Access to raw material**

SCG has considered with the risk of dependency on the limited natural resource. According to the line of sustainable concept, resources must be used with maximum benefit and efficiency consumption.

**Cost of raw materials and fuels**

The fluctuation of oil price and dependency on imported energy are the cause of the company’s consideration to find the alternative fuel and raw materials. SCG has focused on cost control measures and research and development in alternative fuels and raw materials.

**Responding to new and emerging laws and regulations**

SCG has worked closely with the Ad Hoc Environmental Sub-committee to develop the 2007-2011 Pollution Mitigation and Prevention Plan and has collaborated with the government sector to define clear requirements and monitor Volatile Organic Compounds emissions continuously.

**Climate change risks**

SCG has recognized the risk of global warming and other climate changes by developing a long-term strategy starting with reduction for CO2 emission target. In addition, SCG has focused on energy efficiency, energy conservation, and renewable energy.

**Business Expansion in ASEAN**

According to the expansion of SCG business throughout ASEAN has raised the risk associated with business operations in those countries. During the construction and operation phases, SCG collaborates with local communities and national government and compliance with local legal requirement.
B. Business Opportunity Creation and Value base businesses

Among, the increase of consumer’s awareness of environmental issues throughout the friendly products, SCG also increases its competitiveness in the market and expands its business. SCG has developed strategy by emphasizing customer needs and created product differentiation combining with value added products. Research and development have been conducted to support on products that reduce energy consumption and give less impact to environment. “SCG eco value” label has issued from the research that started from the design, production, transport, consumer use, and up to disposal stages. The aims of SCG eco value is giving the benefit to the whole society and responds to the consumer’s need base of high quality eco-friendly products. (Siamcement 2009)

SCG has created strategy to enhance SCG eco value throughout the supply chain and focuses on research and development of High Value Added Product & Service (HVA) from green procurement, green manufacturing, transportation, usage and waste disposal. As the present, SCG has 87 items of products and services under SCG eco value and SCG is continuing to development high-quality and eco-friendly products. The main products and services under SCG eco value as the following; (Siamcement 2009)

Polyethylene Wax (PE Wax)
PE Wax is a product derived from purifying by-product that is called low polymer. PE Wax derived through the distillation process and property development which can be used in the various industries.

Idea Green Paper
The writing paper is made of Eco-Fiber, an agricultural waste such as bagasse, straw and recycled paper. As a result it SCG paper can reduce wood consumption by 30 percent.

Drying-Yard Concrete
The innovation concrete is designed to fasten the speed of crop-drying process. It can lower the energy consumption and electricity of drying machine by 15 percent.

Green Logistics
Efficient management of SCG Logistic has employed the fuel-efficient vehicles and modern information technology to minimize the backhaul fleets as much as possible. This system contributes to energy conservation and greenhouse gas reduction more than 3,240 tons per year.

Smart Wood
Smart Wood is the synthetic wood products which give both less natural resource consumption and responds the customer’s need. Customer can choose various
types of products such as Sunshield Smart Wood which helps to absorb the sunlight.

### 4.1.4 Triple Bottom Lines

**A. Environment Dimension**

SCG adopt two strategies to commit with the environmentally-friendly business or call Green business. First is Eco-Friendly Process (Green Process) that aims to reduce environmental burden from the operational process as well as energy and resource conservation. Second is Eco-Friendly Product (Green product) by researching and developing products that have less negative impacts compared to others. SCG issues the guideline of 3R; Reduce, Reuse/Recycle and Replenish to all business units to follow. The activities of SCG for the environment dimension as the following; (Siamcement 2009)

<table>
<thead>
<tr>
<th>Program</th>
<th>Action Plan &amp; Actual Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Energy Conservation</strong></td>
<td>- SCG developed the energy conservation plan for the efficient use of energy. Its aim is increasing the alternative fuel through expanded use of wastes and renewable energy sources. Improving the production system can minimize loss of energy during the process. Utilization of waste heat from the production process has been adopted by installing the waste heat power generator. This project helps both reducing greenhouse gas emissions, saving energy consumption and the quantity of waste decreased. (Appendix3,5,6) Alternative fuels use also the result from renewable energy sources such as agricultural residue, biomass and industrial wastes. SCG also encourages employees through many activities such as turning off the light and computer before leaving the office and providing through energy-conservation slogans.</td>
</tr>
<tr>
<td>and GHG Management</td>
<td></td>
</tr>
<tr>
<td><strong>Water Management</strong></td>
<td>- In order to prevent risk from water shortage, SCG issued proactive water management plan. Utilization of water resources based on the 3R concept. First is reduction by replacing the backwashing sand filter system types with self cleaning filter system to reduce the use of water. Second, treated water was reused for a various activities and third one replenish by restoring water resources to ensure water was effectively returned to the environment. (Appendix 4)</td>
</tr>
<tr>
<td><strong>Industrial waste</strong></td>
<td>- SCG’s goal is to achieve its Zero waste to landfill by adopting through 3R concept. Wastes are managed within SCG facility before being disposed offsite by third party. SCG must ensure</td>
</tr>
</tbody>
</table>
all wastes disposal complies with regulatory requirement and minimize giving negative impact to community and environment. To the reuse of wastes as alternative fuels and raw material, it must be examined to ensure that there will be no impacts to the environment and quality of product. (Appendix6)

**Biodiversity and Ecosystem**

- SCG Cement is operating with the quarry, so its aim is to rehabilitate the quarries after use. SCG has to adjust the environment after post-quarried area to be more comprehensive and in the alignment with forestation theory. The other sides, SCG paper also supporting the rehabilitation of ecosystem and biodiversity by encouraging community through “Forest Conservation Community for Sustainable Development” project.

### B. Economic Dimension

<table>
<thead>
<tr>
<th>Program</th>
<th>Action Plan &amp; Actual Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Green Procurement</strong></td>
<td>- Base on Green business, SCG is improving eco-friendly purchasing criteria to all supply chain by starting with raw materials. Green procurements initiate “Greening Supply Chain Program” in order to apply the environmental management system from contractors and suppliers.</td>
</tr>
</tbody>
</table>
| **Green Product – SCG eco value** | - Developing High Value Added Products and Services (HVA) is the main target of SCG by increasing to meet 50% of net sales in 2015. HVA are developed by including the innovative technology and adopt market strategy to sell product together with services to fulfill customers’ needs. HVA are produced and sell through all SCG’s business units.  
- To develop in parallel way to fulfill needs of customers and sustained business growth has been highlighted by SCG. SCG aims to develop products and services with world class quality using customer centric strategy. SCG eco value label has built market competency and competitive advantages to the organization. These label identify environmentally-friendly products and services and also compliance with ISO 14021 standard. Both products and services are associated with the special manufacturing processes that less effect on the environment. |
| **Integrate risk management** | - SCG sustainable development base on the line of sufficiency economy, and this philosophy has carried SCG through past and |
present crises. However, SCG still faces with numerous risk and challenges from all fields of business units. So SCG is continuing assessment risks and opportunities and development of response strategies to minimize any adverse impact.

| Cost effectiveness | - Under 3R concepts that mention in environment dimension can minimize cost to the company by using energy efficiency and minimize wastes. |

C. Social Dimension

<table>
<thead>
<tr>
<th>Program</th>
<th>Action Plan &amp; Actual Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Health and Safety</strong></td>
<td>- SCG continually manages occupational health and safety in order to achieve the “Injury &amp; Illness” for both employees and contractors. SCG has set up SCG Safety Framework in line with the business nature and the internationals standards. The SCG sustainable development committee adopts SCG Safety Performance Assessment Program (SPAP) to all subsidiaries. SCG has developed contractor safety management system, implemented the assessment and certification under the Contractor Safety Certification System (SCS).</td>
</tr>
<tr>
<td><strong>Employee Engagement</strong></td>
<td>- SCG’s employee engagement is a combination of long-term engagement practices of SCG, incorporated with international practices. SCG conducted employee engagement survey every two years to gain employee perspectives towards SCG based on the current systems and programs. Employee perspectives can form the business strategy, so employees meet management program has been conducted and it also the good channel of communication between employee and management. SCG has set up a Performance Management System that is focused on the efficiency and performance of the company targets as well as to develop employee capability to bring value to SCG.</td>
</tr>
<tr>
<td><strong>Human Right</strong></td>
<td>- Employees are valuable assets in the company, so SCG set out the fair employees practice policies and related to all responsibility. Code of conduct is part of the rules and disciplines for employees to follow. SCG allows establishing labor union within the company and Human Resource Committees to oversee employees in order to facilitate employees to make a complaint.</td>
</tr>
</tbody>
</table>
### Product Responsibility
- SCG Philosophy is Concern for Society Responsibility: safe product is the crucial responsibility and creating common benefit for society and communities. Improving quality assurance systems in all business units SCG established Quality Assurance Department to make sure that all products must be compliant with Product Liability Law. Accordance with corporate governance, SCG must enhance product quality and also improve the management system to pave way as a leader in region and ability to complete in the world market.

### Community Development
- Development of society is the main part of sustainable growth, SCG encourage all employee to participate in contribution to society. Many programs have conducted by SCG and related with environment. SCG has developed programs for youth capabilities in education and also enhance their sporting capability. For environmental contribution, SCG encourages to raising environmental awareness such as conserving water for tomorrow in order to sustain a balance eco-system.

### SCG foundation
- The establishment of SCG foundation has objectives to create social responsibilities and fulfill Belief in the Value of Individual according to SCG philosophy. The foundation has supported to give scholarships in development the special talent in sport, art and music of youth.

### Corporate Image and Reputation
- SCG has initiated a survey which aims to perceive the stakeholders’ attitude on corporate image and satisfaction of SCG business operations. The last survey for the period 2009 indicated the better corporate image in terms of credibility, financial security, innovation leadership and human resources management.

#### 4.1.5 Stakeholder Dialogue
The philosophy for the business operation of SCG is creating sustainability for the society and community in every location that companies operate. These are the commitment for the company to respond the needs of stakeholders with the fairness and equality. Stakeholders’ needs, identification approaches and SCG’s program activities to respond as the following; (Siamcement 2009)
<table>
<thead>
<tr>
<th>Stakeholders</th>
<th>Needs</th>
<th>Identification Approach</th>
<th>Program / Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shareholders</td>
<td>- The growth of Revenue and business - Fair business management under corporate governance</td>
<td>- Annual shareholder meeting</td>
<td>- Operating business under corporate governance and 4 Core Values - Operating business with caution and creating sustainable profits to shareholders</td>
</tr>
<tr>
<td>Contractors</td>
<td>- Compensation - Occupational health, safety and environmental well-being - Programs for skill enhancement at and beyond work</td>
<td>- Meeting between contractors and managements - Dialogues</td>
<td>- Providing wages and remuneration to be at least equal to regulatory requirement - Raising the quality of work life based on safety and environment aspects. - Developing technical skills</td>
</tr>
<tr>
<td>Customers</td>
<td>- Satisfaction in goods and services with the reasonable price - Quality and environmentally</td>
<td>- Customer satisfaction survey - Customer complaint channel</td>
<td>- Creating diversity in product profiles and responding to customer needs - Controlling and assuring manufacturing processes in accordance with ISO 9001, ISO 14001 and industrial standards</td>
</tr>
<tr>
<td>Suppliers</td>
<td>- Reasonable price and on-time payment</td>
<td>- Visits to suppliers - Responding to supplier</td>
<td>- Defining the clear purchasing procedure and</td>
</tr>
</tbody>
</table>
| Employees | - Welfare and remuneration  
- Job security and career path  
- Skill enhancement and the quality of work life | - Employees meet management program  
- Employees consultation  
- Monitoring of suggestions or complaints  
- SCG Whistleblower Policy  
- Health surveys | - Providing reasonable welfare and wages  
- The remuneration based on overall company performance  
- Having management systems in accordance with OHSAS 18001 and ISO 14001 |
| Communities | - Creating jobs and occupations for communities  
- Protecting the environment and pollution control  
- Supporting communities activities  
- Enhancing education and schools in local communities | - Community needs and satisfaction surveys  
- Face-to-face meetings between community leaders and SCG’s management  
- Open house  
- Dialogues  
- Monitoring of complaints | - Community relation activities in education, religion, public service, environment, employment promotion and mobile medical service  
- Continuous pollution control and monitoring  
- Career development  
- Support and develop local communities activities |
| Local governmental agencies | - Complying with local regulations | - Meetings with government | - Strictly adhering to relevant |
| | - Sustainable and transparent business operation  
- Technical support towards green procurement | - complaints concerned to the reasonable price  
- Supporting and assisting the green procurement project |
<table>
<thead>
<tr>
<th><strong>Central governmental agencies</strong></th>
<th><strong>Media</strong></th>
<th><strong>NGOs/ Academics/Leader</strong></th>
</tr>
</thead>
</table>
| - Being a role model for other industries  
- Supportive community activities | - Complying with local regulations  
- Being a role model for other industries  
- Meetings with governmental agencies  
- Government visits/ inspections  
- Dialogues | - Conduct business by minimal impact to the environment and communities  
- Reserve natural resources and the environment  
- Building engagement with communities | - Regulation including businesses, safety and environment  
- Supporting and contributing to initiatives of local governmental agencies  
- Government visits/ inspections  
- Dialogues | - Strictly follow the regulations on businesses  
- Encouraging regulatory compliance of businesses in value chain  
- Press conference/ briefing  
- Visiting the facilities and operations by media  
- Interviewing with management  
- Organizing thanks press event | - Collaboration and engagement in environment, communities and society related activities  
- Opportunities to meet management | - Utilizing natural resources effectively, while preserving environmental quality  
- Issuing annual reports and sustainability reports according to GRI  
- Improving machineries and equipment to reduce impact to communities and environment |
4.1.6 Published Articles concerning Siam Cement Group – Sustainable project

In order to fulfill the reliability of secondary data from case study that we use only company’s website, we gathered other information from external source in order to describe the different perspectives for SCG.

Thailandtonight (2011), states that SCG is one of Southeast Asia’s oldest and biggest industrial conglomerates that hasn’t kept it from maintaining its status as one of Thailand’s most respected companies.

“Siam Cement "is probably, in my opinion, the best-managed and structured group in this country," said Sriyan Pietersz, an analyst at J.P. Morgan in Bangkok "When you talk to them, they do have to manage with short-term issues, but they’re very focused on five- to 10-year horizons," he says. Moreover, he said, it is "quite leveraged to an economic upturn." (Thailandtonight 2011)

However, SCG was faced with a harmful project that was suspended due to impact with environmental at Map Ta Phut Industrial Estate. From Annual report 2010 states that 18 projects of SCG in Map Ta Phut Industrial Estate have been suspended to harmful impact to environment in 2009. On September 2010, the Central Administrative Court delivered its judgment and almost all projects of the company were not considered as a serious impact projects and are able to continue operations. Except for 1 project fall within the list and is now in process to comply with paragraph 2 of Article 67 of the Constitution B.E.2550. (Siamcement 2010a) CEO from SCG believes the suspension will be resolved within 8 to 12 months and now the company has started observing the new environmental regulations in order to meet the second clause of Article 67 of the Constitution (Thailandoutlook 2010).

“The court's latest ruling allowed 74 out of 76 projects to operate after suspension for almost a year for violation of Section 67 of the 2007 Constitution that required industries deemed harmful to conduct environmental and health impact assessments (EIA and HIA)

The court noted that the two projects might be included in the list of 11 harmful activities recently approved by the Natural Resources and Environment Ministry. Thai Plastic and Chemicals Plc (TPC), a unit of Siam Cement Group, expects the HIA and EIA of its vinyl chloride monomer capacity expansion will be completed by the end of this year”. (Bangkokpost 2010)
5. Chapter 5: Analysis & Discussion

5.1 To weaken the barriers that might caused the problem of Sustainability in Developing countries under the capitalized market

Recently, business is in the middle between Capitalism and New Capitalism era. Most of the companies in all over the world have put so much effort to adapt themselves to Capitalism; they are not only concern about maximizing their profits but also concern about many other social responsibility activities. However, in this competitive environment and business oppression, it causes the companies in developing countries to ignore the performance of sustainable activities and disregard the code of conduct due to time limitations and cost constraints.

After the influx of foreign capital from developed countries, developing countries have gained the benefits from foreign funding and investment which influenced the growth of the economic in their regions. Moreover, offshore outsourcing has been introduced as a new business model. Offshoring is classified as business model, which is a relocation of business activity to make production cost effective. Developed countries’ companies believe that this business model can assure a high quality of work with a lower cost of production to reach an international quality standard and comply with codes of conduct and other requirements.

Under the competitive business environment, although offshoring companies need to comply with their local requirements, codes of conduct of their parent company and its social responsibility policy, they might break some requirement to loosen some tightness of their limitation. As a result, it might caused problem which was mentioned in the example of Apple Inc. As Apple pushes and oppresses the high demands and large orders with a limited time of production. This means that the offshoring company has to perform whichever ways to accomplish these requirements such as extension of working hours or using an illegal labor as child labor. These problems are the barriers of developing countries to perform proper sustainable activities.

As long as the developing countries’ companies are forced by their parent company, the problems and barriers will be continually occurred and finally became a huge problem that is difficult to solve. As the developing countries’ companies have less bargaining power, most of their productions are monopolized by one or few company. According to Edvardsson&Enquist (2009) which mentioned that sustainable values-based service business can increase the companies’ strength and value in their product or service. When the companies have adequate value in their product or service, they will certainly have the ability to enhance their bargaining power, improve the companies’ strengths and
effectively implement their sustainable activities and reducing those barriers from developed countries.

Trade and Environment is a dilemma conflict for developing countries. Most of developed countries want to enforce developing countries to concern about the environments. On the other hand, the developed countries hold most of the information and environmental scientific research which developing countries are enforced to purchase these innovation, goodwill or patient in order to apply with its production so that they are able to fulfill all requirements. Thus, if the developing countries would like to escape from this cycle, they have to create value from their own internal organization. Supporting research and development from their internal human resources are the sustainable advantage way to gain their knowledge and innovation. As a result, the companies can mitigate the trade barriers and reduce cost from external innovation. Moreover, the companies can also increase their strengths and values in their products and brand identity at the same time. After they can mitigate and relieve their tightness, they will have a space to concern and implement sustainable activities for their future sustainable business growth.

For example, a model for values-based service businesses which we selected the case of YKK to study as it is successfully apply a concept of values-based service businesses to its company. The company creates its brand value by responding the customers’ needs and challenges quickly and efficiently. Moreover, the company has a strategy to be a partner of its customers and get involve with the customers’ producing process, then continuously inventing new products or adjusting unmatched precision to serve its customers’ needs. This represents the care, knowledge and imagination that the company included in its products. As a result, it can encourage a strong value by driving customer value and brand value and improve the confidence of its quality of all products that satisfy all customer needs.

Corporate Governance is one important factor that promotes and assures its responsibility, transparency, verifiability and fairness. It means that if the company has good corporate governance, sustainable concept and other sustainable instruments, it can be easily implemented and developed in accordance with the company strategy. This is another problem of developing countries as mostly they have inefficient corporate governance.

5.2 The Sustainable growth in SCG
The problem which obstacle in application of sustainable concept in developing country is the belief that sustainable raises cost in their financial statement. SCG has spent many years to do research and development regarding how to use natural resource base on the conservation way and the initiation of alternative fuel in order to reduce dependency on import energy. These are the strategies for risk
mitigation by creating a proactively managed and controlled environment and maintaining social risk in the lowest level. The strategy concerns with the limitation of natural resource with climate change risk and it also comply with law and regulation.

The application of triple bottom line, SCG has combined all three perspectives working together. SCG issued the guideline of 3R; Reduce, Reuse and Replenish to all business to ensure that the resources can be efficiently consumed. All production processes are concerned with environmental friendly as a result SCG has introduced High Value Added Product & Service (HVA) which started to concern about the environment from green procurement, green manufacturing, transportation, usage and waste disposal. The company can reduce the consumption of natural resource and also give less impact to environment and communities by reducing greenhouse gas emissions. HVA can also response to the customer’s need and also be in the line of sustaining business. The product from SCG has a crucial responsibility and creating common benefit to society and communities. SCG has put the efforts to pay back to the society by setting up foundation to give scholarships and support to the student who has talent but don’t have opportunity and money.

The company expands its business into five lines of businesses in order to diversify risk and each business is related to one another. As a result, it assists reducing cost after the combination. In the case study from Appendix 2-4 reflected the raising of Net profit has opposite way with resource consumption which had decreased. SCG could survive from the past to present crisis because the company has strategy plan in doing business base on sustainable concept. We apply the basic of Business excellence model to analyse SCG’s operation with sustainable concept. This model relies on the triangle of “person-organization-society” which create the excellence way to achieve the sustainable development. We also identified how each of them has simultaneously worked to retain customers’ needs and how the core value of business successfully perform in SCG’s operation.

**Learning Excellence through person-organization-society**

SCG has realized that employees are the valuable assets of the company and they act as the mechanism to drive company’s activity to accomplish goal. The individual learning is started since new employees, SCG conducts program to develop both hard and soft skill training to employee in order to give knowledge on fundamental system to perform their duties and also build strong relationship and positive working environment. SCG gives the chance to employee to exchange their idea with management as a result they are being part of company’s business strategy. For the organization level to be a learning excellent, SCG has been continuously conduct a research and development to create a new product to fulfill customers’ needs base on the high quality and eco-friendly product. SCG
targeted to increase fifty percent of net sales in 2015 for eco-friendly product. Eco-friendly product is the part of societal learning excellent due to this type of product is the part of product responsibility. Many programs from SCG have been conducted to give benefit back to society and encourage them to participate with SCG activities such as conserving water.

**Process performance excellence through management process**

The management team under sustainable development committees perform task by maximizing stakeholder value and balancing between the interests of all stakeholders. From stakeholder dialogue, SCG provides channel of communication with all stakeholders to ensure that the company’s activities are respond base on all stakeholder’s need. For example, to fulfill the customer satisfaction with the reasonable price in products and services. SCG issues survey to observe customer’s perception so it can be continuously develop technical skill or creating the diversity in product profiles and responding to customer needs.

SCG operates business in accordance with corporate governance to assure its responsibility, transparency, verifiability and fairness, to all concern parties. Good corporate governance in SCG encourages sustainable growth because both of them are also in the line of the philosophy of sufficiency economy that emphasizes the equilibrium and flexibility together with careful, thorough, and moral application of knowledge. In order to be an effective and efficient management process, SCG concerns about internal control and audit system to build a moral and ethical awareness to all SCG units. The integrity and respect for all stakeholders are also includes in both sustainable and corporate governance philosophy.

5.3 SCG overcomes through developing countries’ barriers to apply sustainable concept

5.3.1 The conflict between Trade vs Environment

According to Xu, 1999 states that the developing countries have been counted to Eco-dumping which refers that they have low environmental standards which caused their cost of manufacturing to be lower than other countries with higher environmental standards. Base on our case study, SCG can reduce resource consumption during the production process which is shown in Appendix 2-4. Several projects have issued to reduce resources consumption such as efficiency use natural resources, development of the alternative fuel and raw material in order to reduce dependency on import material and the limitation of natural resource.

SCG can mitigate the problem between Trade and environment it can prove that the business can be operated in the parallel way with caring environment. SCG always considers of the climate change it has developed long-term strategy to
reduce CO2 emission which is shown in Appendix 5, GHG scope 2 decreased from 2008 in every business units. The best way to compromise Trade and environment together is launching eco-friendly product that categorize as the product responsibility. SCG has developed eco-friendly product under SCG eco-value label these products give less impact to the environments.

However, eighteen projects from SCG has suspended to give harmful environment during the year 2009 but at the present almost every projects are able to prove that they were not considered as a serious impact projects. Except, one project is still in the process of judgment from Court. The company strongly believes that this project will not also consider as a serious impact to environment because the company has committed to operate on the basis of caring environment.

5.3.2 Trade Barriers

As the natures of developing countries are firstly import technologies from developed countries and then export the products back to them caused cost of production in developing countries has increased. To mitigate and overcome trade barriers, the developing countries should do the research and develop technology by themselves in order to reduce the dependency from foreign countries and also reduce cost of production to create competitive advantage. Base on our case study, SCG has continually developed and added value to its production. For example, SCG paper business introduced the new technologies that transfer Eco-Fiber such as an agricultural waste as bagasse to produce Idea Green Paper instead wood. From this project the company can reduce deforestation and be environmentally-friendly. In 2009 the company can reduce wood consumption by 30 percent.

From the case of SCG, the company could not be a representative to solve the problem of licensing for the circumstance of blocking trade between developed and developing countries. However, the companies can produce the products which base on environmental friendly and do not cause any bad effects to the environment. Thus, the developed countries could not ban or prohibited the products from developing countries.

5.3.3 Business Oppression

Base on Apple Incorporate, it shows that the oppression from huge demand encourage supplier to ignore both their employees’ health and the effect of production to environment. The company lacks of awareness to consider its employees’ right by forcing them to resign when they have illness from working in order to avoid the company’s future liability. The beneficial from sustainability in SCG is that the company has its own code of conduct and concern with triple bottom line. One of this concept is social dimension, it is the first thing that SCG
would like to emphasize which regarding to health and safety to both its employees and contractors. SCG builds Total safety Culture within the company to reduce accident rate and distribute this concept to its contractors by developing contractor safety management system.

To mitigate business oppression such as the speed of production to support the huge customers’ order, the company should not increase its capacity on number of working hours but rather adding number of employees. To mitigate the dependency on customers and increase company bargaining power, the company should build company’s value by initiating company’s strength. Own brand identity can build the market competency and increase the number of customer to avoid monopoly customer and oppression from customer. SCG can mitigate the above mentioned regarding to oppression by building product and service from Core Company’s value that concern with the values of customer. As a result, sustainable values-based business has been driven with SCG, this concept also creates other stakeholder’s value and continuously increasing the profitability in long-term perspective. SCG brand identity is SCG eco-value, this label has derived from project High Value Added Product & Service (HVA) which was already mentioned previously. The development of brand identity in SCG has a root caused from corporate social responsibility and in the line of sustainable concept as we can say that sustainable can be run in parallel with business operation and also caused huge benefits to the company from the application of sustainability. SCG has clear vision to act as a regional market leader, contributing to the sustainable process of ASEAN and local communities where it operates within 2015 and also targeted to achieve 50% of net sales from HVA by 2015. This strong vision also leads to build company’s strength and encourage achieving its goal by continuing research and developing HVA product and service. Recently, SCG can launch 87 items of HVA product and services. Moreover, SCG is the first company in Thailand to produce environmental friendly product label and remaining as the leader in the market. The contribution of long term profitability, SCG has aimed to develop product and service to meet the world class quality by using customer centric strategy to run this project. In order to fulfill customer’s need, SCG has initiated marketing strategy to sale product together with service. These types of product and service are design to build marketing competency and competitive advantage to the organization as well as to create future generation products and service under SCG-eco value.
6. Chapter 6: Conclusion

The final chapter we shall discuss the conclusions as well as answering the research questions of this case study which we conceived in chapter one.

1 What are barriers of Sustainable Implementation and Development in developing countries, how to deal with the limitation and get out of the confinement beyond the business oppression in the capitalized market?

During the changing period of capitalized market, there are many conflicts between developed and developing countries about their business mechanism. However, in the new capitalism, most countries have been concerned not only about maximizing profits, but also on many other sustainable activities including environment and social responsibility.

Recently, under the competitive business environment and trade barriers, companies in developing countries need to struggle and survive by doing whatever is necessary. They are enforced to follow many requirements from developed countries such as environmental and healthy measures. In the developing countries’ perspective, they believe that developed countries come to take advantages from these requirements by forcing them to purchase their innovation, technology and patient with costly amount. Due to developed countries hold almost information and environmental scientific research which developing countries have to use it in productions to reach their requirement. Therefore, it is difficult for developing countries to follow the sustainable concept according to the requirement from developed countries because there are incremental costs which cause the higher cost of production.

Another problem is business oppression; developed countries push and oppress the high demand and large orders with a limited time of production that enforces developing countries to accomplish it with the unethical way such as extension of working hours or using child labors. As mentioned, this is one of the barriers for developing countries to perform sustainable activities.

From our study, one of the ways to handle with the barriers and liberate themselves from this cycle, they have to create their own value from their internal organization; the company has to support their staffs to learn and knowledge creation. After that the company will gain benefits from its knowledge and internal innovations. Using of the external innovation and technology will be reduced. As a result, trade barrier and business oppression will be mitigated, and its incremental cost from external innovation use will be reduced. After companies can increase strength and value in their products and brand identity, their bargaining power might be increased at the same time. Finally, they are able
to mitigate and relieve their tightness, so they feel more satisfied to implement sustainable activities along with their business.

Besides, Corporate Governance is one thing that promotes its responsibility, transparency, verifiability, fairness and sustainable activities. It means if the company has good corporate governance, sustainable concept, and other sustainable instruments can be easily implemented and developed in accordance with the company strategy.

2 Case study of SCG: SCG as a company model of developing countries’ company, how the company get successful to apply sustainable concept to its business beneath an economic pressure under the capitalism?

Under the capitalism, all developing countries must do businesses with maximizing profit and trying hard to survive in the competition stage. As a result it is difficult to run businesses with the sustainable concept if they are not feeling truly responsible with this concept. However, SCG also has been referred to as a company in a developing country but it could get successful in sustainably because it realized that sustainable is not seen as a burden, instead it has a greater benefit. The sustainable concept in SCG based on the philosophy of sufficient economy and it has been balancing Economic, Environment and Social perspectives according to TBL concept to meet their long-term sustainability business operation. We also found out that the successful of sustainable development must link between TBL and stakeholder dialog SCG has provided two ways communication to get respond from all stakeholders that become a partial creating company’s strategy.

In addition, business excellence has applied SCG to its simultaneously development of all employees, organization and then society. To develop organization, SCG realized that employee driven is the best company concept to meet goal and also strong vision of the organization in order to give the right direction in doing business. For the new capitalism era not only focuses on maximizing profit so SCG concentrated on producing product responsibility and gave back the benefit to society such HVA products and services and set up foundation to support poor students. Management achieved excellence by applying a proactive managed and controlled environment and social risk in order to mitigate risk to accomplish sustainable development.

Facing with economic pressure under the capitalism and all barriers are also the obstacle to the developing country to apply sustainable concept. From our paper, we found that SCG is able to overcome these situations by creating its own brand to expand the market and come to be the leader in that market. Every business unit has collaborated to each other to promote High Value Added Product & Service under SCG eco-value label to fulfill customer need and care about environmental
effect. As a result SCG can be a model for other companies in Thailand and developing country to follow.

For all activities of SCG could be key factors to encourage becoming successful with sustainable businesses and creating long term profitability, not only reducing production costs, it also meets the customer demands and gains customer satisfactions base on the social responsibility.

Finally we believe that the sustainable concept can be beneficial to the company in the long term perspective. All barriers from applying sustainability development and implementation might be mitigated by building the company’s strength in order to raise their bargaining power and reduce dependency from external. The sustainability can be operated along with the company business’s operation base on the good corporate governance.
Reference


Appendix

Appendix 1 Values-based sustainable service business

Strong values drive customer value

CSR as strategy for sustainable service business

Values-based service leadership for living the values

Values-based service brand and communication for values resonance

Values-based service experience for co-creating value

Service dominant

Value creation

Appendix 2 Financial Performance

<table>
<thead>
<tr>
<th>Performance Data</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net profit (Billion Baht)</td>
<td>32.2</td>
<td>29.5</td>
<td>30.4</td>
<td>16.8</td>
<td>24.3</td>
</tr>
<tr>
<td>EBITDA (Billion Baht)</td>
<td>53.5</td>
<td>57.2</td>
<td>50.0</td>
<td>38.8</td>
<td>47.1</td>
</tr>
<tr>
<td>Environmental expenditures** (Million Baht)</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>832</td>
<td>854</td>
</tr>
</tbody>
</table>

Appendix 3 Energy consumption

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<tr>
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<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Energy Consumption (Petajoules)</td>
<td>129.09</td>
<td>132.76</td>
<td>136.84</td>
<td>135.50</td>
<td>135.49</td>
</tr>
<tr>
<td>Thermal Consumption (Petajoules)</td>
<td>118.87</td>
<td>120.29</td>
<td>123.09</td>
<td>122.98</td>
<td>123.77</td>
</tr>
<tr>
<td>Alternative Energy Consumption (Petajoules)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Biomass</td>
<td>9.25</td>
<td>10.29</td>
<td>10.78</td>
<td>8.93</td>
<td>8.84</td>
</tr>
<tr>
<td>Alternative Fuels</td>
<td>3.53</td>
<td>10.12</td>
<td>10.38</td>
<td>11.74</td>
<td>10.90</td>
</tr>
<tr>
<td>Electrical Consumption (Million kilowatt hours)</td>
<td>2.839</td>
<td>3.464</td>
<td>3.819</td>
<td>3.478</td>
<td>3.254</td>
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## Appendix 4 Water consumption

<table>
<thead>
<tr>
<th>Performance Data</th>
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<th>2007</th>
<th>2008</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water Consumption (Million Cubic Meters)</td>
<td>71.73</td>
<td>75.02</td>
<td>79.02</td>
<td>78.20</td>
<td>91.89</td>
</tr>
<tr>
<td>Proportion of Recycle Water (%)</td>
<td>10.61</td>
<td>11.05</td>
<td>11.72</td>
<td>10.54</td>
<td>10.78</td>
</tr>
</tbody>
</table>

![Water Consumption Chart]

![Proportion of Recycle Water Chart]

### Water Consumption
- **SCG Chemicals**
- **SCG Paper**
- **SCG Cement**
- **SCG Building Materials**

### Proportion of Recycle Water
- **SCG**
- **SCG Chemicals**
- **SCG Paper**

![SCG Chemicals Chart]

![SCG Paper Chart]

![SCG Cement Chart]

![SCG Building Materials Chart]
Appendix 5 Green House Gas Emissions

<table>
<thead>
<tr>
<th>Performance Data</th>
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<th>2008</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>GHGs Scope 1 (Million Tons)</td>
<td>16.60</td>
<td>17.52</td>
<td>17.54</td>
<td>17.87</td>
<td>18.92</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Performance Data</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
</tr>
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<tbody>
<tr>
<td>GHGs Scope 2 (Million Tons)</td>
<td>1.74</td>
<td>2.04</td>
<td>2.21</td>
<td>2.23</td>
<td>1.86</td>
</tr>
</tbody>
</table>

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**Note:** The diagrams and data above represent greenhouse gas emissions in different categories for the years 2005 to 2009. The categories include SCG Chemicals, SCG Paper, SCG Cement, and SCG Building Materials.
Appendix 6 Waste Management

Performance Data

<table>
<thead>
<tr>
<th></th>
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<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hazardous Waste (Thousand Tons)</td>
<td>23.86</td>
<td>19.62</td>
<td>23.41</td>
<td>14.32</td>
<td>13.44</td>
</tr>
</tbody>
</table>

- **Hazardous Waste**
  - SCG Chemicals
  - SCG Paper
  - SCG Cement
  - SCG Building Materials

Performance Data

<table>
<thead>
<tr>
<th></th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-Hazardous Waste (Thousand Tonne)</td>
<td>683.80</td>
<td>804.73</td>
<td>758.37</td>
<td>749.38</td>
<td>643.60</td>
</tr>
</tbody>
</table>

- **Non-Hazardous Waste**
  - SCG Chemicals
  - SCG Paper
  - SCG Cement
  - SCG Building Materials