STUDY ON INTEGRATING SUSTAINABILITY TRENDS INTO STRATEGIC MANAGEMENT TO GAIN SUSTAINABLE COMPETITIVE ADVANTAGE

by

Sun-Tae Oh

THESIS

Submitted to
KDI School of Public Policy and Management
in partial fulfillment of the requirements
for the degree of

MASTER OF BUSINESS ADMINISTRATION

2009

STUDY ON INTEGRATING SUSTAINABILITY TRENDS INTO STRATEGIC MANAGEMENT TO GAIN SUSTAINABLE COMPETITIVE ADVANTAGE

by

Sun-Tae Oh

THESIS

Submitted to
KDI School of Public Policy and Management
in partial fulfillment of the requirements
for the degree of

MASTER OF BUSINESS ADMINISTRATION

2009

Professor Kwon Jung

STUDY ON INTEGRATING SUSTAINABILITY TRENDS INTO STRATEGIC MANAGEMENT TO GAIN SUSTAINABLE COMPETITIVE ADVANTAGE

by

Sun-Tae Oh

THESIS

Submitted to
KDI School of Public Policy and Management
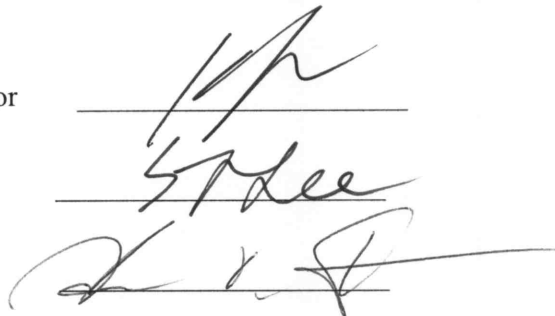in partial fulfillment of the requirements
for the degree of

MASTER OF PUBLIC POLICY

Committee in charge:

Professor Kwon Jung, Supervisor _____

Professor Seung Joo Lee _____

Professor Hann Earl Kim _____

Approval as of November 20, 2009

ABSTRACT

Study on integrating sustainability trends into strategic management to gain sustainable competitive advantage

This study conducted an exploratory investigation of the link between sustainability issues and a firm's Sustainable Competitive Advantage (SCA). It poses three primary research questions: 1) How can companies identify and strategically react to the most important sustainability issues to gain and sustain competitive advantage? 2) What can be the criteria for companies to choose the internal activities to improve the effect of the strategic reaction in question 1? 3) What can be the criteria for companies to choose and utilize their resources to increase the effect of the strategic reaction in question 1?

The author clarifies the term of sustainability issues by defining the sustainability trends and sustainability impacts. A new typology of Sustainability Trends grouped by stakeholder type is created, and GRI guidelines are employed as a typology of Sustainability Impacts.

A theoretical model was developed with the following hypotheses: H1) Strategic Positioning based on well-defined Sustainability Trends will positively influence SCA; H2) The Strategic Fit of activities linked to sustainability impacts will positively moderate the relationship between Strategic Positioning based on Sustainability Trends and SCA; H3) Imperfect Imitatibility of corporate resources (from Resource-Based View model) will positively moderate the relationship between Strategic Positioning based on Sustainability Trends and SCA.

The hypothesized model was tested through a study of a total of 33 firms that had been listed in DJSI for the last five years using the sustainability reports issued by the firms. Preliminary analysis related to types of trends and impacts, correlation analysis, and in-depth case study of six firms with the biggest ROA growth ($\triangle$ROA as a measure of SCA) within five years were conducted.

The result revealed that firms focusing on sustainability trends on employees and customers showed better SCA than others regardless of the firms' positioning on sustainability trends. The Strategic Fit of activities (or impacts) showed weak correlation with SCA. On the other hand, Resource Imperfect Imitatibility (RII) showed no correlation with SCA but demonstrated some correlation with strategic positioning.

– 3 –

ACKNOWLEDGEMENT

I was privileged to have met Professor Kwon Jung for "Marketing Management" as my first official class and "Business Ethics" as my last official class at KDI school. I am deeply grateful to him for his kindness, wisdom, insights, guidance, encouragement, and time in supervising this thesis.

I would also like to thank the many professors who have contributed to my understanding of strategic leadership, corporate strategy, strategic management, governance, etc.

Special thanks go to my colleagues whom I consider my friends for their warm interest and for sharing their knowledge.

Most of all, I want to thank my wife, my son, and the other members of my family for their unconditional understanding, support, and sacrifice. In particular, I dedicate this thesis to my wife and my son. I hope they will one day see this thesis contributing to the sustainability of our world.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

Ⅰ. INTRODUCTION

A. OVERVIEW

Increased need for a new economic paradigm

Since the industrial revolution, human beings have pursued endless mass production and mass consumption. Humans are doing everything possible to squeeze more and more from less and less. Nowadays, many people are concerned about sustainability issues such as climate change, natural resource depletion, widening prosperity gap, etc. After the industrial revolution, man chased after dreams of endless economic growth. Such endless growth paradigm presumed that more production and consumption are benign regardless of the environmental and social impacts. Note, however, that this paradigm is no longer appropriate. The limited resources cannot be sustained to keep up with the increasing demands of a burgeoning population. The scarcer resources tend to fulfill the needs of the rich rather than those of the poor, the needs of the current generations rather than those of future ones. Now is the time to shatter the myth for economic growth. Humans are in need of a new economic paradigm that is for the world community of people as well as the next generations. According to Edwards (2005), the "Sustainability Revolution" has begun.

Because of these mega trends, many national governments and international institutions worldwide are formulating policies, regulations, and initiatives to solve, stop, and mitigate the induced problems. They also require companies to be involved in these movements. Note, however, that companies are facing global competition, and they have difficulty committing to these activities.

Proliferation of Sustainability Management (or CSR[1]) as a New Management Approach

Coping with these sustainability issues are sometimes called "sustainability management" or "corporate social responsibility." Even though there are subtle differences between the two terminologies, the author considered the two terms to be the same and used them interchangeably in this thesis.

There have been many research studies that sought to find out the correlation between CSR and firms' economic performance. Johnson (2003), a professor of Loyola University, Chicago, claimed that CSR can be viewed as a continuum ranging from companies engaged in illegal activities to those striving for social change (Illegal-

---

[1] Katsoulakos and Katsoulakos (2007) divided the main business responsibility movement into two as corporate social responsibility (CSR) and corporate sustainability. According to them, CSR as a business movement is specifically associated with ethical issues – doing what is right and fair and avoiding harm -- whereas corporate sustainability is associated with support for sustainable development and long-term performance stability and survival of the corporation.

Compliant-Fragmented-Strategic-Social advocacy). His research suggests that being socially responsible offers no fiscal advantage to companies that merely comply with the legal mandates or engage in fragmented social responsibility activities, using the firm as an agent for social change instead; note, however, that such does help boost financial performance for companies that strategically target employee development and satisfaction as well as customer service (including product safety and quality). Many other researchers tried to prove that CSR translates into better economic performance, although the results are inconclusive (Vilanova, Lozano, and Arenas, 2009).

Problem recognition of previous studies on Sustainability Management (or CSR)

Even though there have been many research studies on the correlation between CSR and firms' economic performance, most of them ignored the fact that no business innovation tool or activities can be successful regardless of how well companies make choices and implement the chosen activities. Similarly, we cannot say that any company can improve its performance only if it implemented customer satisfaction activities, Six Sigma, etc. What is important is that the company implemented the activities properly, not the fact that the company implemented them. Therefore, finding out a good way of implementing CSR -- which will result in better economic performance – is meaningful.

There have been some trials aimed at determining the good criteria for implementing CSR. The growth in CSR ratings and rankings linked to socially responsible investment has substantial influence on companies' behavior. Unfortunately, the existing cacophony of self-appointed scorekeepers does nothing more than add to the confusion (Porter & Kramer, 2006).

According to Porter and Kramer (2006), no business can solve all of society's problems or bear the cost of doing so. Instead, each company must select issues that intersect with its particular business. The essential test that should guide CSR is not whether a cause is worthy but whether it presents an opportunity to *create shared value* not only as a meaningful benefit for society but is also valuable to the business. Their framework suggests that the social issues affecting a company fall into three categories distinguishing between many worthy causes and narrower set of social issues that are both important and strategic for the business. They claim that the more closely tied a social issue is to the company's business, the greater the opportunity to leverage the firm's resources and capabilities and benefit to society. They also say that strategy is always about making choices, and that success in corporate social responsibility is no different. It is about choosing which social issues, i.e., sustainability issues should be the focus.

Research Question

Porter and Kramer (2006) gave us a very deep insight in approaching CSR more strategically and implementing CSR more properly. Nonetheless, they left behind some questions:

Q1. How can companies identify and strategically react to the most important sustainability issues to gain and sustain competitive advantage?

Q2. What can be the criteria for companies to choose the internal activities to improve the effect of the strategic reaction in Q1?

Q3. What can be the criteria for companies to choose and utilize their resources to increase the effect of the strategic reaction in Q1?

Porter and Kramer (2006) recommended two tools drawn from Porter's "Competitive Advantage of Nations (1990)" and "Competitive Advantage (1985)": diamond framework and value chain framework, respectively. Diamond framework gives some rough answers to Q1, and value chain framework, to Q2 and Q3. Nonetheless, they failed to show clear answers to the three questions that focus more on sustainability issues.

B. PURPOSE OF THE STUDY

In this thesis, the author will suggest a new framework that will help companies easily identify their most important societal problems, i.e., sustainability trends [2]. By evaluating the suggested framework with some case studies, the appropriateness of the frameworks will be evaluated. Companies may be able to select opportunities or threats that are relevant to their daily activities without immense efforts using the framework.

The study will also suggest criteria that will help companies easily choose proper activities leveraging on their resources to cope with the identified sustainability trends. Choosing the proper activities is equally important as identifying proper opportunities or threats. By implementing the chosen activities, companies gain sustainable competitive advantage. Such sustainable competitive advantage will increase long-term value of companies in the end.

C. METHODOLOGY AND SCOPE OF RESEARCH

The author constructs a theoretical model through literature review. Based on the theoretical model, a specific research model with hypothesis is developed.

---

[2] The term "sustainability trends" is defined in the latter part of this thesis.

To test the hypothesis, the author conducts a quantitative research using operationalized construct: Strategic Positioning based on Sustainability Trends, Strategic Fit of Activities linked to Sustainability Impacts, and Imperfect Imitatibility of resources. To test the hypotheses, data and information collected from 33 companies in Dow Jones Sustainability Index between 2004 and 2008 and had published sustainability reports are used.

Quantitative analyses including correlation analysis are performed to test the hypothesis. After the quantitative analysis, qualitative analysis is carried out through the in-depth case study of six companies with the biggest ROA growth in the industry of the samples to find out the reasons for the validity/non-validity of the hypothesis.

Ⅱ. LITERATURE REVIEW

A. INTRODUCTION: Topic, purpose, and methods of literature review

Topic

This chapter will examine and critique scholarly literature as well as draw inferences for this study. Concepts of sustainability trends and impacts, typologies of sustainability trends and impacts, measures for identifying the most important trends and impacts, resource-based view (hereafter RBV), and sustainable competitive advantage will be discussed.

Purpose

Armed with concrete concepts of sustainability trends, sustainability impacts, resource-based view, and sustainable competitive advantage, the author will formulate a theoretical model showing how a company's strategy practitioner can integrate external sustainability trends (i.e., opportunities or threats) into corporate strategy to gain and sustain competitive advantage in keeping with the simultaneous improvement of their sustainability impacts on their stakeholders.

Method

Since the sustainability concept is at the early stage of academic research, the author

relied more on publications related to sustainability, sustainability management, and

CSR. For the other concept, the author researched on mainstream strategy concepts (e.g.,

Porter's Industry Organization theories, Barney's RBV).

B. DEFINITION OF SUSTAINABILITY TRENDS AND IMPACTS

Definition of sustainable development used by the Brundtland Commission

The concept of sustainability has not been defined by one prominent scholar but

developed by thousands of individuals and organizations.

One of the most well-known definitions of "sustainable development" is "development

that meets the needs of the present without compromising the ability of future

generations to meet their own needs" as used by the Brundtland Commission.

Gibson's concept of sustainability

Gibson (2005) described the concept of sustainability in his book "Sustainability

Assessment." He identified the characteristics of sustainability -- which is minimally

controversial; instead of simply recognizing problems, he offered some guidance for positive response as well as the essentials both of which form a roughly complete whole.

Table 1: Essentials of the concept of sustainability

The concept of sustainability is:

- A challenge to conventional thinking and practice

- About long- as well as short-term well-being

- Comprehensive, covering all the core issues of decision making

- Recognition of links and interdependencies especially between humans and biophysical foundations for life

- Embedded in a world of complexity and surprise wherein precautionary approaches are necessary

- Recognition of both inviolable limits and endless opportunities for creative innovation

- About an open-ended process, not a state

- About intertwined means and ends – culture and governance as well as ecology, society, and economy

- Both universal and context-dependent

Edwards (2005) suggested a similar conceptualization of sustainability, too. In this thesis, the author adopted the definition of sustainable development and Gibson's concept of sustainability because these are useful for further discussion, preventing rather inappropriate conceptualizations; any further discussion would be beyond the scope of this thesis.

Definition of Sustainability Trends and Sustainability Impacts

A few terms related to sustainability issues are used without clear differentiation; issues,

trends, impacts, causes, topics, and aspects are some examples.

Porter and Kramer (2006) suggested that the social issues affecting a company fall into

three categories distinguishing between many worthy causes and narrower set of social

issues that are strategically important for business.

Table 2: Prioritizing the Social Issues

Generic Social Issues	Social issues that are not significantly affected by a company's operations; the company's long-term competitiveness is not materially affected
Value Chain Social Impacts	Social issues that are significantly affected by a company's activities in the ordinary course of business
Social Dimensions of Competitive Context	Social issues in the external environment having a huge effect on the underlying drivers to the competitiveness of a company in the locations where it operates

In this categorization, three points are arguable: First, all three categories' definitions

use the term "social issue," but it does not clearly distinguish between external

environment and internal environment issues. Issues of the external environment are

related to opportunities or threats of the companies, and they mainly affect companies regardless of their business operations' outcomes. Issues of the internal environment are more related to the strengths and weaknesses of companies; they are directly affected by companies' operations. The terms "Social Dimensions of Competitive Context" and "Value Chain Social Impacts" focus on the external and internal environments, respectively. Note, however, that the term "Generic Social Issues" covers issues affecting companies' operations (i.e., external and internal environments mixed) and vice versa; thus incurring some confusion. To formulate a company's strategy, the external and internal environments are usually analyzed separately. Therefore, the terminology will be more easily understood and used if it clearly divides the two dimensions. Second, it does not clearly integrate the "Future" concept. When the social issues have some tendency, they are likely to be strategically more important for companies concerning long-term firm values. Most of all, the concept of sustainability itself emphasizes the future more than the conventional way of thinking. Finally, the terms "issues," "impact" and "context" are not clearly differentiable without additional explanation. If used to mean "any impact caused by a company's internal activities regardless of significance," however, the term "impact" will be more clearly understood without confusing it with the term "issue."

Incorporating the three points above, the following definitions can be made:

- Sustainability Trends are external environmental sustainability issues affecting companies with some tendency.

- Sustainability Impacts are internal environmental sustainability issues affected by companies' activities[3].

Figure 1: Sustainability Trends and Impacts
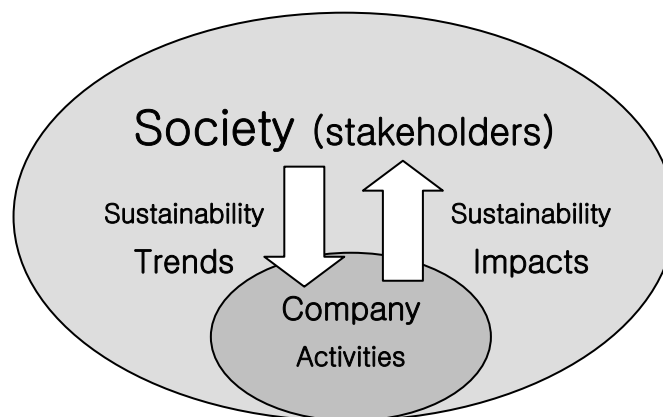
Some sustainability trends can be very important opportunities or threats for some companies now or in the future depending on how well they "**cope with**" the trends. On the other hand, some sustainability impacts can be strengths or weaknesses for some companies now or in the future depending on how well they "**manage**" the impacts. For

---

[3] The term "activity" refers to a lot of things done by companies. Any activity wields impact(s) on the stakeholders of the company. Therefore, analyzing or categorizing the impacts is directly linked to the activities, like the other side of a coin. When we discuss the sustainability of a company, however, we are usually more interested in the impacts of the company. Therefore, the author placed more emphasis on "sustainability impacts" instead of "activities."

example, global warming as one of the most important sustainability trends can pave the

way for many opportunities for automobile companies with good hybrid engines. If an

automobile company can produce cars emitting far less greenhouse gas (GHG)

emissions and wielding less negative impacts on society, it can be their strength

somehow now and/or in the future.

These definitions are consistent with the most common definition of "Stakeholder" by

Freeman (1984), i.e., "any group or individual who can **affect** or who **is affected** by the

achievement of the company's objectives."

C. SUSTAINABILITY TRENDS AND STRATEGIC POSITIONING

Typology of Sustainability Trends

There are many books and articles covering sustainability issues. Note, however, that

academic papers that carefully analyzed or categorized the issues can hardly be found.

Porter and Kramer (2006) suggested using the diamond framework to understand the

social dimensions of the company's competitive context. The diamond framework has

four groups: context for firm strategy and rivalry, local demand conditions, related and

supporting industries, and factor (input) condition. This may be a very good framework for analyzing the external competitive environments in conventional strategy formulation. Note, however, that it lacks two very important things to encompass the sustainability concept. First, in the geographical dimension, it concerns national or local issues more than global issues. Most sustainability issues are globally and locally intertwined. Some issues such as climate change cannot be solved by a few nations' efforts, and some issues have to be addressed in totally different ways from the global and local perspectives. For example, population growth is a big trend worldwide, but population decrease is a serious social issue in Korea. Therefore it should not be categorized in the same group. Second, in the time dimension, the framework seems to focus more on a snapshot environment of an organization. Note, however, that sustainability is related to our future generations' needs, too. Therefore, we have to have a dimension for integrating our future generations' needs.

Porter (1998) described the concept of the five forces in his book "Competitive Advantage: Creating and Sustaining Superior Performance." According to him, "the first fundamental determinant of a firm's profitability is industry attractiveness; competitive strategy must grow out of a sophisticated understanding of the rules of competition determining an industry's attractiveness." He also said that "the rules of

competition are embodied in five competitive forces; entry of new competitors, threat of substitutes, bargaining power of buyers, bargaining power of suppliers, and rivalry among the existing competitors."

Stead and Stead (2004) invented the concept of the issue wheel for macroenvironmental analysis and the concept of "coevolutionary industry analysis" for industry analysis. They put three variables at the hub of the issue wheels, which are population growth, level of human affluence, and impacts of technology on the natural environment. The three variables cause increased production and consumption, which result in resource depletion and increased pollution and deterioration. They claimed that the hub issues result in environmental catastrophe, poor air and water quality, loss of species, climate change, land degradation, deforestation, loss of wetlands, human health problems, lower quality of life for many, etc., now as well as for posterity. According to them, in coevolutionary industry analysis, competition is not between firm and firm but between communities of firms sharing complementary products or services, similar processes, and similar approaches to the marketplace; cooperation extends beyond direct suppliers and buyers to include all the participants in the community and in the relevant stakeholders and industrial ecosystem networks.

Roughly speaking, the approaches of Stead and Stead are more improved than Porter's from two perspectives when both are compared based on the sustainability concept. First, they placed more emphasis on the natural environment for macroenvironmetal analysis and further broadened the scope of stakeholders and industrial networks for industrial analysis. Nevertheless, they admitted that the two analytical tools -- issue wheel for macroenvironmental analysis and coevolutionary industry analysis for industrial analysis -- are not mutually exclusive but interrelated; thus causing some confusion in creating a concrete framework.

Henriques and Lærke-Engelschmidt (2007) identified three key business trends among companies: globalization, technology, and blurring of sector boundaries. Trend 1, "globalization," involves increasing the interconnectedness of the modern world. For example, the trend toward the ever-increasing size of product markets, abolishment of national borders of pollution, global supply chain, etc. Trend 2, "science, technology, and communications," is related to technology or technological development. They emphasized the "precautionary principle" linked to this trend. Trend 3, "blurred sector boundaries," refers to the collapse or at least blurring of the sector borders. For example, NGOs are becoming professional, public authorities take up corporate management models, and corporations take over activities that have traditionally been the jurisdiction

of public authorities or NGOs.

SAM Group Holding AG (2008) categorized the trends into three groups: economic, environmental, and social trends. Economic trends include globalization, shift of markets toward emerging areas, raw material scarcity, tightening regulation, public scrutiny & shareholder activism, international standards, international agreements, and technology advancement. Environmental trends include the declining environment, electronic pollution, water scarcity, climate change, GMOs, nanotechnology, increasingly stringent regulation, and increasing compliance costs. Social trends include changing demographics, geopolitical instability, rich-poor gap, increasing public access to information, changing values, and health concerns.

Blackburn (2007) cited a total of 36 sustainability trends without specific typology: growth in global business competition, Opposition to Globalization, Speed of Communications, Digital Divide, Widening Prosperity Gap, Population Growth, Mortality Rates, AIDS and Other Serious Diseases, Mental Health Problems, Increased Immigration, Lower Fertility in Industrialized Nations, Hunger and Malnutrition, Child and Forced Labor, Education Needs for the Disenfranchised, Urbanization, Overconsumption of Resources, Fossil Fuel Depletion, Climate Change, Deforestation,

Threats to Biodiversity, Freshwater Depletion, Water Contamination, Wetlands Destruction, Fish Depletion, Coral Reef Destruction, Spread of Hazardous Pollutants, Traditional Air Pollutants, Declining Soil Quality, Ozone Depletion, Low Credibility of Corporations, Extended Producer Responsibility, Green Products, Green Marketing/Labeling, Green Product Certification, Obesity, Food Nutrition, Rise in Socially Responsible Investment, Investor Concerns over Corporate Governance, Increased Demands for Transparency, Public Reporting, Growing Power of NGOs/CSOs, and Increasing Global Terrorism.

The International Standards Organization (2009) is in the process of developing ISO 26000, which covers social responsibility. Even though the final version has yet to be issued, it gives some tips for the typology for sustainability trends. It categorized the social issues into seven core groups: organizational governance, human rights, labor practice, environment, fair operating practices, consumer issue, and community involvement & development.

New Typology of Sustainability Trends

To categorize sustainability trends more systematically, the following criteria have to be incorporated into the typology:

- The identified environmental opportunities and threats should be based on the collective wisdom of the firm's stakeholders (Stead and Stead, 2004). Therefore, if the trends are categorized by stakeholder type, practitioners will identify the most important trends for their organizations more easily. Spiller (2000)'s taxonomy according to the six major stakeholders is one example of trials of this kind.

- It has to provide a logical tree that is mutually exclusive and collectively exhaustive.

- Ideally, it should be used for macroenvironmental analysis and industry analysis at the same time.

- It has to be consistent with the concept of sustainability.

- It has to be consistent with the definition of sustainability trends. In other words, it has to be able to cover the concept of "Future."

- Ideally, it should be in the line of improvement of conventional external environment analysis framework for the better understanding of users.

Figure 2: Five Plus Three Sustainability Trends Framework
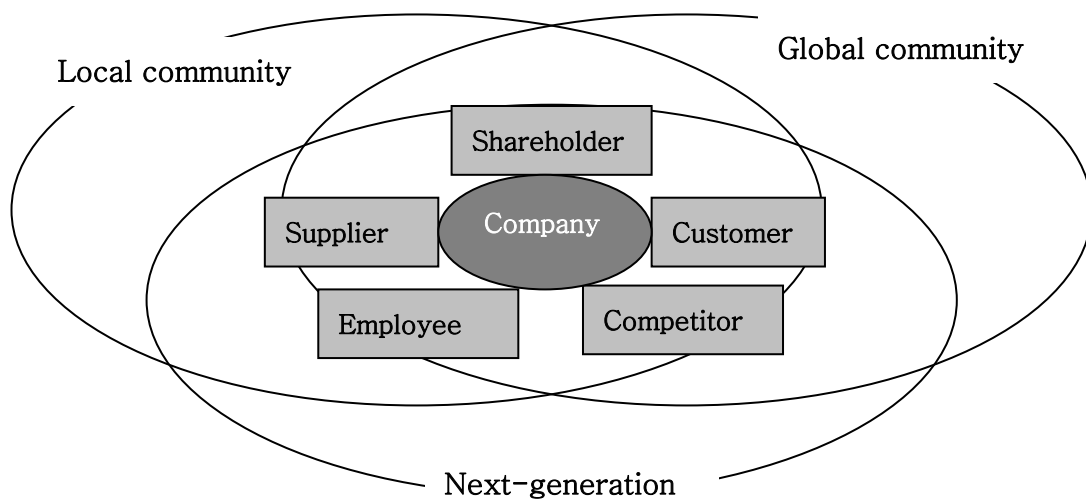
Table 3: Conceptual Links Between the New Framework and the Others

Five Plus Three	Porter (Diamond and *Five Forces*)	Stead and Stead	ISO 26000	Henriques and Lærke-Engelschmidt
Shareholder			-Governance	
Customer	*-Buyer* -Local demand	-Human affluence -Increased consumption -Increased production	-Customer	-Globalization
Competitor	*-Entry* *-Substitution* *-Rivalry* -Context for rivalry	-Increased production	-Fair Operation	-Globalization -Science, technology, and communication
Employee	-Factor (input)		-Labor	
Supplier	*-Supplier* -Supporting industry		-Human rights	-Globalization
Local Community	-Supporting industry -Local demand	-Increased pollution and deterioration	-Community -Environment	-Science, technology, and communication
Global Community		-Population growth		-Globalization -Blurred sector boundaries
Next-Generation		-Impact of technology on the environment -Resource depletion		-Science, technology, and communication

Table 4: Five Sustainability Trends Related to Direct Stakeholders' Influence

No.	Type	Sustainability Trends
ST1	Employee	**Increasing importance of laborers' rights and roles** **Large pool of unemployed or temporarily employed youth**
ST2	Shareholder	**Shareholder activism** - Increasing concerns over corporate governance - Rise in socially responsible investment - Increased demands for transparency - Low credibility of corporations
ST3	Customer	**More diversified and intensified customers' demands** - Aging population - Lifestyle of Health and Sustainability - Increasing public access to information -Obesity, Food nutrition -Extended producer responsibility
ST4	Supplier	**Increasing importance of suppliers' rights and roles** - Increasing importance of suppliers' human rights - Increasing green purchasing
ST5	Competitor	**Increasing competition** - Accelerating technology advancement - Fair operation practices -Increasing threats of substitutes by converging technology

Table 5: Three Sustainability Trends Related to Indirect Stakeholders' Influence

No.	Type	Sustainability Trends
ST6	Local Community	**Increasing rich-poor gap** -Digital divide -Hunger and malnutrition -Urbanization **Increasing pollution** - Increasingly stringent environmental regulation - Electronic pollution - Increasing compliance costs - Poor air and water quality -Water contamination
ST7	Global Community	**Increasing population** - Increasing human affluence (e.g., BRICs) - Shift of markets toward emerging areas -Spread of hazardous pollution and serious diseases **Globalization** - Increasing interconnectedness of the world - Globalization of market, competition, and supply chain -Increasing immigration **Blurred Sector Boundaries** - Increasing international organizations (NGOs, ISO, etc.) - Increasingly stringent regulation - International standards and agreements

		- Geopolitical instability (e.g., increasing global terrorism)
ST8	Next-generation	**Natural resources depletion** - Raw material depletion - Deforestation - Land degradation - Fossil Fuel Depletion - Ozone Depletion - Overfishing **Climate change** (e.g., water scarcity, flood) **Limitation of ecosystem** - Biodiversity Destruction - Loss of wetlands - Coral Reef Destruction

Identifying the Most Important Sustainability Trends

As stressed by Porter and Kramer (2006), no business can solve all of society's problems or shoulder the cost of doing so. Therefore, each company must select the most important issues that intersect with its particular business. In determining which sustainability trends should be the focus, many scholars advised companies to consult with their stakeholders (Stead and Stead, 2004; Miles, Munilla, and Darroch, 2006, etc.).

Miles, Munilla, and Darroch (2006) emphasized the role of strategic conversations with

stakeholders in the formation of CSR strategy. According to them, the strategy making –

strategy realization process would be greatly enhanced by an understanding of the

concerns and preferences of various stakeholder groups through a public, open strategic

conversation process; thus adopting an outside-in approach to strategy formation. They

also reported that the strategic conversations will allow organizations to transform

themselves in terms of recognizing, creating, and discovering attractive economic

opportunities better and having better ability to evaluate realistically the economic

opportunities with respect to the firm's strategic intent and capabilities and exploiting

economic opportunities.

Once some sustainability trends are drawn up using the "Five Plus Three Sustainability

Trends Framework" through strategic conversations with stakeholders, companies may

utilize some sophisticated tools[4] in finally determining the most important trends. The

detailed methodology or arguments on strategic conversation with stakeholders and on

tools will require further research, which is beyond the scope of this thesis.

---

[4] Blackburn (2007) proposed a tool for assessing the business impact of sustainability trends. This tool offers a methodology for figuring out which sustainability trends an organization should focus on strategically. Based on his tool, he identified the business risks from five perspectives -- legal, financial, reputational, competitive, and operational -- and business opportunities from seven perspectives -- innovation, sales, productivity, reputation, employee relations, risk reduction, and license to operate.

Strategic Positioning on the Identified Sustainability Trends

Porter (1996) emphasized the importance of strategic positioning. According to him, strategic positioning means performing activities that are different from those of rivals or performing similar activities in different ways[5]. He also pointed out three distinct sources of strategic positions that are not mutually exclusive but often overlap. First, positioning can be based on producing a subset of an industry's products or services (*variety-based positioning)*. The second basis for positioning is that of serving most or all the needs of a particular group of customers (*needs-based positioning).* It comes closer to traditional thinking with regard to targeting a segment of customers. The third basis for positioning is that of segmenting customers who are accessible in different ways depending on the geography, customer scale, etc., (*access-based positioning).* Porter (1996) also stressed that a "sustainable" strategic position requires trade-offs with other positions arising for three reasons: inconsistencies in image or reputation, different required activities, and limits on internal coordination and control.

Strategic responses to the identified sustainability trends will induce companies to position themselves with new products, new customers, new accessible way, or combination of the three. If companies position themselves appropriately, they will have

---

[5] Porter (1996) distinguished strategic positioning from operation effectiveness, i.e., performing similar activities better than rivals do.

more chances of gaining sustainable competitive advantage than their competitors.

D. SUSTAINABILITY IMPACTS AND STRATEGIC FIT

Typology of Sustainability Impacts

There are many typologies of sustainability impacts or CSR activities. Note, however, that their forms vary depending on their usage. Some of them are principles such as the UN Global Compact Principles, CERES, etc., the main usages of which are giving directions to organizations. Some of them are standards such as ISO 14000, SA 8000, etc. Some of them are socially responsible investment (SRI) criteria such as DJSI, FTSE4GOOD, etc., which are used as valuation tools for financial investment. In addition, there are many indices that are used to rank companies for purposes such as customer satisfaction, reputation, brand value, quality, sustainability, risk, etc.

Many scholars made their own typologies (Spiller, 2000). Spiller identified ten key business practices for each of the six main stakeholders: community, environment, employees, customers, suppliers, and shareholders[6]. According to him, it will provide a

---

[6] Community (1.1 General financial donations ~ 1.10 Disclosure of environmental and social performance), Environment (2.1 Environmental policies, organization, and management ~ 2.10 Environmental audits), Employees (3.1 Fair remuneration ~ 3.10 Social mission integration), Customers (4.1 Industry-leading quality program ~ 4.10

starting point, a menu from which companies can choose -- preferably in conjunction with their stakeholders -- the areas that will be their focus.

Out of all the typologies, the most well-known and frequently used one is probably the Global Reporting Initiative (hereafter GRI) sustainability reporting guidelines. The guidelines are used for the reporting of sustainability, CSR, corporate citizenship, business ethics, etc. The contents are briefly summarized in the table 6. In this thesis, the author adopted this guideline as a typology of sustainability impacts for three reasons. First, it was developed through global multi-stakeholder engagement, thereby making it globally acceptable. Second, it can be used for any kind of organization. Finally, it allows the author to identify easily the activities by looking up the GRI contents index in any GRI sustainability report.

Identifying the Most Important Sustainability Impacts

Spiller (2000) proposed an Ethical Scorecard to provide investors with a picture of a company's ethical performance. He utilized the concept of a "Scorecard," which has been popularized by Kaplan and Norton, authors of *The Balanced Scorecard*. While the

Environmentally and socially responsible production and product composition), Suppliers (5.1 Develop and maintain long-term purchasing relationships ~ 5.10 Inclusion of environmental and social element in the selection of suppliers), Shareholders (6.1 Good rate of long-term return to shareholders ~ 6.10 Open communication with the financial community)

Balanced Scorecard focuses on how the company appears to its shareholders and

customers, the Ethical Scorecard incorporates the perceptions of all stakeholders. He

assigned numeric ratings to assess each of the 60 practices to obtain an overall

quantitative Ethical Performance Score (EPS) that summarizes the Ethical Scorecard. A

major strength is recorded as 2, a strength, as 1, no or equal strengths or concerns or no

information, as 0, a concern, as -1, and a major concern, as -2.

Lamberti and Lettieri (2009) selected Spiller (2000)'s framework for their case study at

the recommendation of Jamali (2007) who considered Spiller's taxonomy one of the

most suitable in the literature for investigating the approaches to CSR. They concluded

that while Spiller's taxonomy is useful in stating the CSR business practices, However,

it provides limited support in obtaining a clear understanding of a company's ethos, and

that a company faces different strategic challenges leveraging on a limited set of CSR

business practices consistent with a specific CSR goal.

Many criteria used for SRI (e.g., DJSI, FTSE4GOOD) or CSR ratings use approaches

similar to Spiller's. Note, however, that most of the evaluation components and the

weightings are very arbitrary. Porter & Kramer (2006) criticized these approaches, i.e.,

"the existing cacophony of self-appointed scorekeepers does nothing more than add to

the confusion." These criteria may be used as starting points to assess the level of CSR of a firm, but they are far from sufficient to identify successfully the firms' crucial sustainability issues (i.e., impacts.) Therefore, establishing very sophisticated criteria to judge which sustainability impacts should various firms deal with has inherent limitations from the beginning.

Strategic Fit

Porter (1996) claimed that the strategic fit of long-term activities offers a sustainable competitive advantage because a competitor has much more difficulty imitating multiple activities than just one activity, i.e., the fit locks out imitators by creating a chain that is as strong as its strongest link.

CSR involves combining activities involving people within and outside the company. The ability to fit successfully external stakeholders into an effective combination of business processes renders even greater complexity to the strategic fit, thereby making it even more sustainable as a competitive advantage (Smith, 2007). Therefore, identifying the most important sustainability impacts that should be managed and improved by the company has to start from the strategic conversation with stakeholders just like the case of identifying the most important sustainability trends. Once some important impacts

are chosen, the company may use another tool to evaluate their strategic fit.

Porter (1996) suggested three types of fit, although they are not mutually exclusive. First-order fit is *simple consistency* between each activity (function) and the overall strategy. For example, if the strategy of a company is cost leadership, all its activities should be aligned in that direction. Consistency ensures that the competitive advantages of activities accumulate instead of being eroded or characterized by the tendency to cancel themselves out. Second-order fit occurs when *activities are reinforcing*. Third-order fit goes beyond activity reinforcement to what Porter calls the *optimization of effort*.

Table 6: Links between the GRI Guidelines and Competitive Advantage

Category	Aspect (Sustainability Impact)	Competitive Advantage[7]
Governance ▫	1. Governance	- N/A (mixed)
Commitment ▫	2. Commitment to external initiatives	- Differentiation
Engagement	3. Stakeholder engagement	- N/A (mixed)
Economic	4. Economic Performance 5. Market Presence (e.g., local hiring, spending on local supplier)	- N/A - Differentiation

[7] Competitive Advantage parts were noted fully depending on the author's personal judgment. Roughly speaking, "differentiation" was used for aspects related to increasing a firm's resources to create value, and "cost reduction," for aspects related to decreasing cost or preventing potential risks.

	6. Indirect Economic Impacts (e.g., infrastructure development for public benefit)	-	Differentiation
Environmental	7. Materials (e.g., reduction, recycled input)	-	Cost Reduction
	8. Energy (e.g., saving, energy-efficient product)	-	N/A (mixed)
	9. Water	-	Cost Reduction
	10. Biodiversity	-	Differentiation
	11. Emissions, Effluents, and Waste	-	Cost Reduction
	12. Products and Services	-	Differentiation
	13. Compliance	-	Cost Reduction
	14. Transport	-	Differentiation
	15. Overall (e.g., environmental protection investment)	-	N/A (mixed)
Labor Practices and Decent Work	16. Employment (e.g., turnover, part-time employee)	-	Differentiation
	17. Labor/Management Relations	-	N/A (mixed)
	18. Occupational Health and Safety	-	Cost Reduction
	19. Training and Education	-	Differentiation
	20. Diversity and Equal Opportunity	-	Differentiation
Human Rights	21. Investment and Procurement Practice	-	Differentiation
	22. Non-discrimination	-	Cost Reduction
	23. Freedom of Association and Collective Bargaining	-	Differentiation
	24. Abolishment of Child Labor	-	Cost Reduction
	25. Prevention of Forced and Compulsory Labor	-	Cost Reduction
	26. Security Practices	-	Cost Reduction
	27. Indigenous Rights	-	Cost Reduction
Society	28. Community	-	N/A
	29. Corruption	-	Cost Reduction
	30. Public Policy	-	N/A (mixed)

	31.Anti-Competitive Behavior	-	Cost Reduction
	32.Compliance	-	Cost Reduction
Product Responsibility	33.Customer Health and Safety	-	Differentiation
	34.Product and Service Labeling (e.g., customer satisfaction)	-	Differentiation
	35. Marketing Communications (e.g., noncompliance)	-	Cost Reduction
	36.Customer Privacy	-	Cost Reduction
	37.Compliance	-	Cost Reduction

E. RESOURCE-BASED VIEW (RBV)

Background of RBV

The sustainability trend concept focuses on the external environments of a firm, which are related to the opportunities and threats in its environmental context. On the other hand, a good corporate strategy has to be formulated taking into account the heterogeneity and immobility of companies' internal strategic resources.

Concept of Resources

Barney (2001) defined "resources" as "the tangible and intangible assets that a firm uses to choose and implement its strategies." In other studies (1991, 2007), Barney

categorized resources into three:

Table 7: Firm Resource Categories

No.	Type	Firm Resources
1	Financial capital	All the different money resources that firms can use to conceive and implement strategies - capital from entrepreneurs, equity holders, bondholders, and banks
2	Physical capital	Physical technology used in a firm, its plant and equipment, its geographic location, and its access to raw materials
3	Human capital	Training, experience, judgment, intelligence, relationships, and insight of individual managers and workers in a firm

Barney (2007) recommended performing value-chain analysis to identify the resources and capabilities with the potential to create competitive advantage. He also suggested two generic value-chain analyses: One by McKinsey & Company, which consists of technology development, product design, manufacturing, marketing, distribution, and service, and the other one by Porter (1985, 1998), which is made up of support activities (including infrastructure activities, technology, and HRM & HRD), primary activities (including purchasing, inventory holding, materials handling, production, warehousing and distribution, sales and marketing, and dealer support and customer service), and margin.

Stead and Stead (2004) embodied the recently emerging ecoefficient and socioefficient system as "Type Ⅱ Linear Value Chain" and the ideal ecoeffective and socioeffective system as 'Type Ⅲ Closed-Loop Value Chain." The former utilizes renewable and virgin materials together and mixed energy, whereas the latter makes use of biological nutrients and renewable energy as the starting input of the value chain.

The concept of resources is useful and easy to understand when the value chain analysis framework is used.

Framework for RBV

Barney (1991) built a theoretical model to identify the sources of sustained competitive advantage, assuming that a firm's resources may be heterogeneous and immobile. He stressed that the following attributes of a firm's resources can be regarded as empirical indicators of how heterogeneous and immobile a firm's resources are and how useful these resources are in generating sustained competitive advantages.

Table 8: Resource-Based Theory VRIN Criteria

No.	Type	Firm Resources
1	Valuable	It exploits opportunities and/or neutralizes threats in a firm's environment.
2	Rare	It must be rare amid a firm's current/potential competition.
3	Imperfectly Imitatible	A firm's resources can be imperfectly imitatible for one or a combination of three reasons: (a) the ability of a firm to obtain a resource is dependent on **unique historical conditions**; (b) the link between the resources owned by a firm and its sustained competitive advantage is **casually ambiguous**, or; (c) the resource generating a firm's advantage is **socially complex**.
4	Non-substitutable	There must be no strategically equivalent valuable resources that are neither rare nor imperfectly imitatible by themselves

Later, Barney (2007) combined "imperfect imitatibility" and "non-substitutability" with "imperfect imitatibility including direct duplication and substitution." Nonetheless, he added the "**organization,"** criterion, which emphasizing the fact that a firm must be organized to be able to exploit its resources and capabilities for the full use of its resources. It includes the formal reporting structure of a firm and its explicit management control systems. According to him, these components are often called complementary resources and capabilities because they have limited ability to generate competitive advantage in isolation.

Parameterizing RBV to Be Testable

In response to Priem and Butler's critique[8] of his 1991 paper, Barney (2001) illustrated how his RBV can be parameterized to be testable.

First is related to "valuable." He acknowledged that the conditions under which resources will and will not be valuable are not fully specified in his 1991 paper. He also noted how researchers must begin by addressing the value of resources with theoretical tools that specify the market conditions under which different resources will and will not be valuable. Later, Barney (2007) defined it more clearly in his book as shown in the table below, which facilitates testing.

Second is related to "Rarity.'" He stressed that the parameterization of rarity is not as complete as he would have liked it to be but is nevertheless specific enough to generate empirically testable assertions as written in the table below. Still, he acknowledged that additional work is needed to complete the parameterization of the concept of rarity.

Third is related to "Imitatibility." He confirmed that he has clearly parameterized the concept of Imitatibility as shown in the table below because he believed the empirical

---

[8] Priem and Butler criticized the resource-based theory developed in Barney's 1991 paper, believing it to be tautological (Barney, 2001). Nonetheless, Barney (2001) stressed that this criticism can be addressed if the resource-based theory can be parameterized in ways that can generate testable hypotheses.

assertions derived from this concept were likely to be among the most important to be drawn from the resource-based theory.

Finally, with regard to "Non-substitutability," he did not provide any explanation on parameterization[9].

Table 9: Parameterizing the VRIN Criteria

No.	Type	Firm Resources
1	Valuable (Barney, 2007)	A firm's resources and capabilities are valuable if and only if they **reduce a firm's net costs or increase** how much a firm's **customers are willing to pay** compared to what would have been the case if the firm did not possess such resources.
2	Rare (Barney, 1991, 2001)	As long as the number of firms possessing a particular valuable resource… is less than the number of firms needed to generate perfect competition dynamics in an industry… such resource has potential of generating a competitive advantage.
3	Imperfectly Imitatible (Barney, 1991, 2001)	A firm possessing a particular valuable resource that is rare and is **obtained under unique historical circumstances** can gain sustained competitive advantage (i.e., can improve its efficiency and effectiveness in ways that **competing firms cannot imitate over time**).

---

[9] The author could not find any explanation as to why the parameterization of non-substitutability was skipped, but it seems to be due to the fact that Barney (2007) combined imitatibility and substitutability later.

F. SUSTAINABLE COMPETITIVE ADVANTAGE

Definition of Competitive Advantage

Barney (2007) defined competitive advantage as follows: "In general, a firm has a competitive advantage when it is able to create higher economic value than rival firms. Economic value is simply the difference between the perceived benefits gained by a customer purchasing a firm's products or services and the full economic cost of these products or services. Thus, the size of a firm's competitive advantage is the difference between the economic value that a firm is able to create and the economic value that its rivals are able to create."

Importance of the Sustainable Competitive Advantage Concept

In integrating the sustainability trends into corporate strategy, it becomes very important for firms to make the competitive advantage induced by the strategy sustainable. Sustainability trends are long-term matters; therefore, any strategic response to them has to create competitive advantage that can last a long time. If the competitive advantage is not sustainable but is easily imitated or substituted after a while by the competitors, the strategy will not induce any more return for the firm.

Williams (1992) researched on the sustainability [10] of competitive advantage by analyzing the spectrum of resource sustainability of three different types of industry. He also suggested four implications for management: "Let sustainability guide the design of your strategic control systems"; "Let sustainability guide your organization's policies on innovation"; "Recognize that sustainability shapes diversification success," and; "Anticipate when the change in sustainability will be frame-breaking."

There are two complementary views on the source of sustainable competitive advantage. One is the industrial organization economics (IO) view, i.e., firms have certain commitments for significant lengths of time, leading to privileged market positions such that rivals have no incentive to compete with such firm. The other is the resource-based view (RBV) of strategy as discussed already, which looks at the intrinsic non-imitatibility of the firm's resources, i.e., those resources must be so unique such that rivals would find imitating it difficult or expensive (Soh, 2005; Lado, Boyd, and Wright, 1992).

Industrial Organization Economics (IO) View and Sustainable Competitive Advantage

Lado, Boyd, and Wright (1992) stressed that the neoclassical and industrial organization

---

[10] The meaning of sustainability in this research differed from the concept of sustainability as covered in this thesis. Here, the term was used as the noun form of "sustainable."

theories tend to offer little understanding of sustainable competitive advantage, overlooking the idiosyncratic firm competencies elicited from managerial volition, organizational routines, reputation, and culture as potential sources of sustainable competitive advantage by consigning competitive advantage to the imperatives of the industry/market structure.

In Porter (1998)'s view, however, competitive advantage can be sustained by erecting barriers to entry by potential competitors such as scale and scope economies, experience or learning curve effects, product differentiation, capital requirements, and buyer switching costs. Porter (1996) explicitly stressed that *strategic fit* among many activities is fundamental not only to competitive advantage but also to the sustainability of such advantage, and that *positions* built on systems of activities are far more sustainable than those built on individual activities.

Resource-Based View and Sustainable Competitive Advantage

Lado, Boyd, and Wright (1992) suggested an alternative conceptualization of sustainable competitive advantage from a resource-based perspective.

Barney (1991) defined competitive advantage and sustained competitive advantage. A

firm is said to have **competitive advantage** when it is implementing a value-creating strategy that is not being implemented simultaneously by any current or potential competitor. A firm is said to have **sustained competitive advantage** when it is not implemented by any current or potential competitor and when these other firms are unable to duplicate the benefits of this strategy. A competitive advantage is sustained only if it continues to exist after efforts to duplicate such advantage have ceased. In this sense, this definition of sustained competitive advantage is an equilibrium definition. Firms cannot expect to "purchase" sustained competitive advantages in open markets. Instead, such advantages must be found in rare, imperfectly imitatible, and non-substitutable resources already controlled by a firm.

According to Barney (2001), there are three reasons he chose a definition of competitive advantage that did not depend on defining a firm's industry. First, determining the theoretically appropriate boundaries of a particular industry can be very difficult. Second, defining the industry boundaries assumes a level of stability in technology and competition that is inappropriate in many situations. Finally, resource-based logic uses the firm as its unit of analysis. To maintain theoretical consistency, it was important for him to adopt a firm-level dependent variable.

G. SUMMARY OF THE LITERATURE REVIEW

Sustainability Trends and Impacts

Sustainability is the ultimate goal of sustainable development, i.e., "development that meets the needs of the present without compromising the ability of the future generation to meet their own needs." Sustainability issues can be divided into two groups: sustainability trends and sustainability impacts. Sustainability Trends are external environmental sustainability issues affecting companies with some tendency. On the other hand, Sustainability Impacts are internal environmental sustainability issues affected by companies' activities.

Sustainability Trends and Strategic Positioning

There were a few scholars who have tried to categorize sustainability trends (Porter and Kramer, 2006; Stead and Stead, 2006; Henriques and Lærke-Engelschmidt, 2007; SAM Group Holding AG, 2008; Blackburn, 2007; International Standards Organization, 2009). There has yet to be a typology that is clarified systematically, however. Therefore, the author of this thesis constructed his own "Five Plus Three Sustainability Trends Framework," which will help sustainability management practitioners easily identify the most important sustainability trends through strategic conversations with their

organizations' stakeholders. After identifying the trends, the practitioners can make a decision on strategic positioning by adopting the idea of Porter (1996).

Sustainability Impacts and Strategic Fit

There are many typologies of sustainability impacts, e.g., principles, standards, SRI, ranking indices, academic ones (Spiller, 2000), etc. Note, however, that the author recommends employing GRI's sustainability reporting guidelines, which categorize the impacts in three dimensions: economic, environmental, and social ones. There were many attempts to identify the most important sustainability impacts (Spiller, 2000; Lamberti and Lettieri, 2009; Jamali, 2007) and SRI criteria. Through strategic conversation (Smith, 2007) with stakeholders, one can identify the most important sustainability impacts and choose the proper activities using the concept of strategic fit by Porter (1996).

Resource-Based View

When choosing the activities, one has to take into account the company's internal resources. Such resources can be categorized and identified using the value-chain analysis framework by Porter (1985, 1998). One has to exploit resources that are valuable, rare, imperfectly imitatible, and non-substitutable to enable the chosen activities to create sustainable competitive advantage (Barney, 1991, 2001, 2007).

Sustainable Competitive Advantage

There were a few research studies on the definition of competitive advantage (Barney,

2007) and sustainable competitive advantage (Williams, 1992; Lado, Boyd, and Wright,

1992; Porter, 1996, 1998; Barney, 1991, 2001). A firm is said to have sustainable

competitive advantage when such is not possessed by any of the current or potential

competitors and when these other firms are unable to duplicate the benefits of this strategy.

Figure 3 shows the theoretical model conceptualized based on the literature review.

Figure 3: Theoretical Model
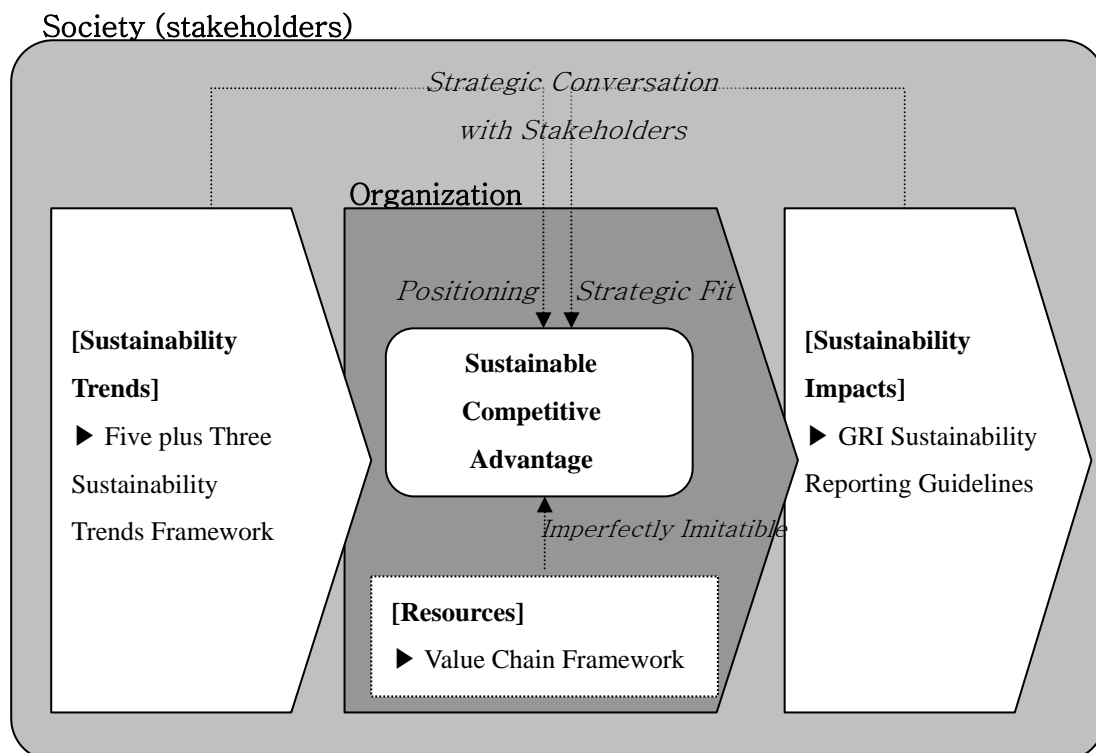
Ⅲ. MODEL AND HYPOTHESIS OF THE STUDY

A. RESEARCH MODEL OF THE STUDY

The specific research model is presented here to demonstrate both the expected direction and sign of the relationships to be discussed and empirically examined later. This model was developed to prove the key idea of the theoretical model that has been drawn based on the literature review. The following subsections address the firm performance-related outcomes of Corporate Sustainability Management: delineating the contribution of strategic positioning on pre-determined sustainability trends to the companies' sustainable competitive advantage; describing the contingent effect of moderators choosing strategically fit activities linked to companies' sustainability impacts, and; exploiting imperfectly imitatible resources.

Figure 4: Specific Research Model with Hypotheses
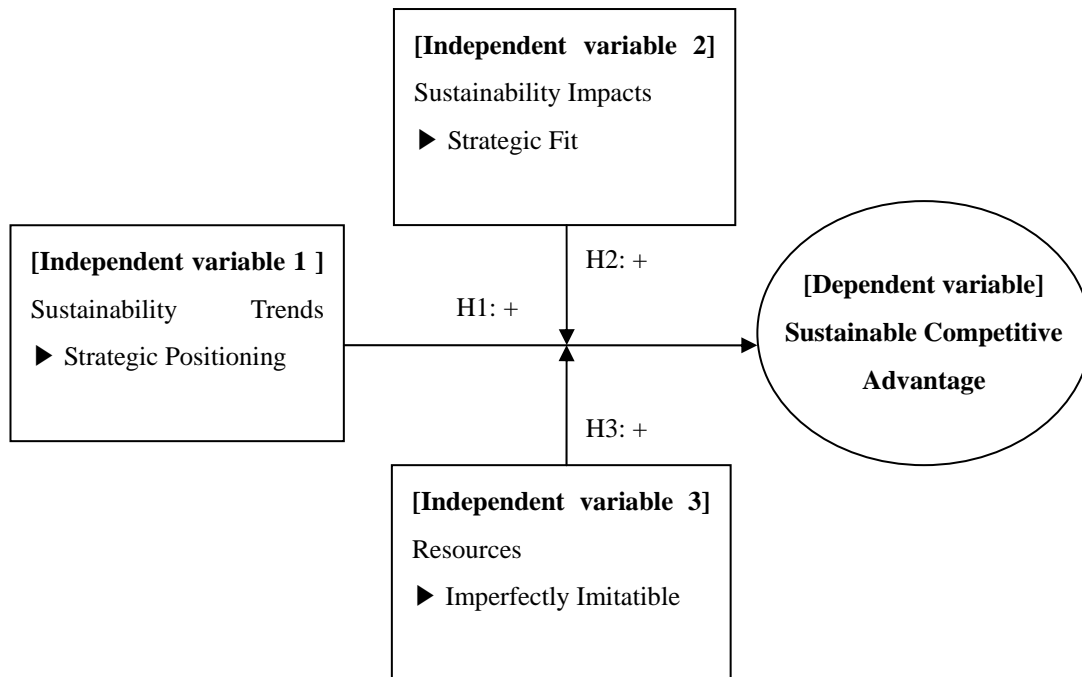
B. DEVELOPMENT OF HYPOTHESIS

Based on the literature review and research model, three hypotheses were formulated as followings:

Strategic Positioning based on Sustainability Trends and Sustainable Competitive Advantage

As defined in this thesis, sustainability trends are external environmental sustainability issues affecting companies with some tendency. Porter and Kramer (2006) emphasized

the importance of the social dimensions of the competitive context, which are social issues in the external environment and significantly affecting the underlying drivers to the competitiveness of a company in locations where it operates. Several other scholars recommended taking into account the sustainability trends (Stead and Stead, 2004; Henriques and Lærke-Engelschmidt, 2007; Blackburn, 2007).

Note, however, that the typologies of sustainability trends have not been well-defined. Therefore, the author recommended a new typology called "Five Plus Three Sustainability Trends Framework." By making use of the framework, any company's practitioner can identify more easily the company's most important trends -- which can serve as opportunities or threats -- sooner or later by means of strategic conversation with the company's stakeholder (Miles, Munilla, and Darroch, 2006).

Porter (1996) emphasized the importance of strategic positioning. He defined strategic positioning as performing activities that are different from rivals or performing similar activities in different ways. According to him, a "sustainable" strategic position requires trade-offs with other positions arising for three reasons: inconsistencies in image or reputation, different required activities, and limits on internal coordination and control. He also cited three distinct sources of strategic positions: variety-based positioning,

needs-based positioning, and access-based positioning.

Therefore, we can expect a company that identified well the most important sustainability trends and strategically positioned itself based on the trends creating trade-offs to gain sustainable competitive advantage.

H1	Strategic Positioning based on well-defined Sustainability Trends will positively influence sustainable competitive advantage.

Strategic Fit of activities linked to sustainability impacts and Sustainable Competitive Advantage

There are many kinds of activities that a company can decide to do even after clearly defining its strategic position. Activities are directly interlocked with sustainability impacts as the outcomes of the activities cited in the definition of "sustainability impacts." Therefore, deciding which activities to implement requires understanding which sustainability impacts are most important to the company.

There are many typologies of sustainability impacts or CSR activities (Spiller, 2000). Among all the typologies, GRI sustainability reporting guidelines were adopted in this thesis. A total of 37 sustainability impacts were listed. Some of the impacts will enable

differentiation for the company, and others will lead to cost reduction; others can swing both sides, or they cannot be clearly discerned depending on the specific context.

Identifying the most important sustainability impacts (i.e., identifying which activities to implement) cannot be done by establishing very sophisticated criteria because it depends on the companies' different strategic challenges (Lamberti and Lettieri, 2009). Therefore, the impact identification procedure should include the strategic conversation with the stakeholders affected by the impacts (Miles, Munilla, and Darroch, 2006).

Porter (1996) emphasized that the strategic fit of long-term activities provides a sustainable competitive advantage because a competitor has much more difficulty imitating multiple activities than just one activity.

Moreover, the ability to fit external stakeholders into an effective combination of business process successfully will render even greater complexity to the strategic fit, making it even more sustainable as a competitive advantage (Smith, 2007).

Therefore, we can expect the magnitude of sustainable competitive advantage as achieved through strategic positioning to be contingent on the level of strategic fit. The

stronger the fit locks in the activities, the harder it is for imitators to reposition themselves or struggle toward the strategic position (Porter, 1996).

H2	The Strategic Fit of activities linked to sustainability impacts will positively moderate the relationship between Strategic Positioning based on Sustainability Trends and sustainable competitive advantage.

Imperfect Imitatibility of Corporate Resources and Sustainable Competitive Advantage

Barney (1991) built a theoretical model to identify the sources of sustained competitive advantage, assuming that firm resources may be heterogeneous and immobile.

Barney (2007) recommended engaging in value-chain analysis (Porter, 1985, 1998) to identify the resources and capabilities with the potential to create competitive advantage. Stead and Stead (2004) recommended not only value-chain analysis, albeit different ones such as Linear Value Chain and Closed-Loop Value Chain.

Barney (1991) stressed that only valuable, rare, imperfectly imitatible, and non-substitutable resources can generate sustainable competitive advantage.

Barney (2001) illustrated how his RBV can be parameterized to be testable. In his paper, he acknowledged the concept of imitatibility to be the most important concept drawn from the resource-based theory.

A firm possessing a particular valuable resource that is rare and is obtained under unique historical circumstances can gain sustained competitive advantage.

In this thesis, the author focused only on the "Imperfect Imitatibility" of corporate resources because it is the most important concept of RBV and is parameterized most clearly for use in research test as acknowledged explicitly by Barney (2001).

Firm resources can be imperfectly imitatible for one or a combination of three reasons: (a) the ability of a firm to obtain a resource is dependent on **unique historical conditions**; (b) the link between the resources possessed by a firm and its sustained competitive advantage is **casually ambiguous**, or; (c) the resource generating a firm's advantage is **socially complex** (Barney, 1991).

Examples of socially complex resources include the interpersonal relations among managers in a firm, a firm's culture, a firm's reputation among suppliers, and the

customers (Barney, 1991).

H3	The Imperfect Imitatibility of corporate resources will positively moderate the relationship between Strategic Positioning based on Sustainability Trends and sustainable competitive advantage.

Ⅳ. METHODOLOGY

A. RESEARCH DESIGN

Sample

Based on the somewhat complex model including sustainability and sustainable competitive advantage, the nature of this study essentially required a longitudinal analysis of multiple organizations. Considering these methodological demands, data and information of 33 companies in Dow Jones Sustainability Index[11] (DJSI) between 2004 and 2008 and had published sustainability reports were analyzed. Since all 33 companies were included in DJSI, they were all regarded as good sustainability performers based on the conventional means of assessment.

The analysis of the sustainability management strategy of 33 companies using sustainability reports showed how the companies had responded to sustainability trends.

First, the author selected one core CSR strategy and three main activities to support the

---

[11] DJSI is the most renowned index used for socially responsible investment.

strategy. Afterward, the author checked whether the strategy was successfully positioned in keeping with a specific sustainability trend and whether the positioning was correlated with SCA. The author also checked whether the three main activities strategically fitted each other and whether imperfectly imitatible resources were exploited.

After the statistical analysis, the author conducted more in-depth case studies of six companies that had shown the best SCA for the past five years to find some exemplary examples of the hypothesis.

B. OPERATIONALIZATION OF CONSTRUCT

Strategic Positioning based on Sustainability Trends

As defined by the author, Sustainability Trends are external environmental sustainability issues affecting companies with some tendency. The trends can be identified using the "Five Plus Three Sustainability Trends Framework" through strategic conversation with stakeholders.

Strategic Positioning involves performing activities that are different from those of rivals or performing similar activities in different ways. It may be in the form of *variety-*

based positioning related to products or services, *needs-based positioning* related to customers, and *access-based positioning* related to geography, customer, etc. (Porter 1996). Porter (1996) also stressed that sustainable strategic positioning requires trade-offs with other positions, and that *generic strategies*[12] remain useful in characterizing strategic positions at the simplest and broadest level.

Therefore, *"Strategic Positioning based on Sustainability Trends"* can be defined as "Strategically positioning a company with new products, new customers, new accessible way, or combination of the three, creating trade-offs with other positions to cope with strategically important Sustainability Trends."

To operationalize the concept of *"Strategic Positioning based on Sustainability Trends,"* the author used the following criteria:

Table 10: Operational Definition of Strategic Positioning on Sustainability Trends

Level	Criterion[13]	Score (SPS)
SP-1	None of the three criteria below or No clear information	1

---

[12] Cost leadership, differentiation, or focus

[13] Upgraded operational definitions of SPS, SFS, RIIS for further studies are provided in Appendix I

SP-2	Sustainability Trends are clearly identified and focused on.[14]	2
SP-3	Clear Strategic Positioning (product, customer, accessible way)	3
SP-4	The position has clear generic strategy.	4

Strategic Fit of activities linked to sustainability impacts

As defined by the author, Sustainability Impacts are internal environmental sustainability issues affected by companies' activities. The impacts can be identified using GRI guidelines through strategic conversation with stakeholders.

Strategic Fit involves combining activities to make each activity (function) consistent, reinforcing one another and optimizing efforts.

Therefore, "*Strategic Fit of activities linked to sustainability impacts*" can be defined as "Combining activities to be consistent, reinforcing one another and optimizing them to improve the strategically important Sustainability Impacts and to strengthen the Strategic Position on pre-determined Sustainability Trends at the same time."

To operationalize the concept of "*Strategic Fit of activities linked to sustainability impacts,*" the author used the following criteria:

---

[14] Even though the trends are clearly identified and focused on, if the focused trends were changed within a period of time, SPS is set to 1.5.

Table 11: Operational Definition of Strategic Fit of Activities Linked to Sustainability Impacts

Level	Criterion	Score (SFS)
SF-1	None of the three criteria below or No clear information	1
SF-2	Sustainability Impacts are clearly identified and focused on, i.e., activities strengthening Strategic Position are clearly identified and focused on.	2
SF-3	Partial Strategic Fit (three major strengthening activities do not fit one another)	3
SF-4	Full Strategic Fit (all three major strengthening activities fit one another)	4

Imperfectly Imitatible resources

Barney (1991) stressed that only valuable, rare, imperfectly imitatible, and non-substitutable resources can be considered resources generating sustainable competitive advantage. Note, however, that the author focused only on the "Imperfect Imitatibility" of corporate resources because it is the most important concept of RBV and parameterized most clearly as testable as explicitly acknowledged by Barney (2001).

"*Imperfectly Imitatible Resources*" can be defined as "Corporate resources that are not to be imitated because of unique historical conditions, casual ambiguity, or social complexity."

Note, however, that operationalizing the concept is inherently difficult because it is about history, ambiguity, interpersonal relations, culture, reputation, etc., which cannot be easily recognized from outside the company. Therefore, the author used the following criteria, which can be identified relatively easily:

Table 12: Operational Definition of Imperfect Imitatibility of Resources

Level	Criterion	Score (RIIS)
RII-1	All three Sustainability Impacts exploiting the resources can be found in other companies' activities.	1
RII-2	Two out of the three Sustainability Impacts exploiting the resources can be found in other companies' activities.	2
RII-3	One out of the three Sustainability Impacts exploiting the resources can be found in other companies' activities	3
RII-4	None of the three Sustainability Impacts exploiting the resources can be found in other companies' activities.	4

Sustainable Competitive Advantage

Villalonga (2002) suggested that the competitive advantage of a firm is the degree by which it outperforms its competitors. If performance is measured by profitability, the difference between the profitability of a firm and the average profitability of its industry

in any given year is a direct indicator of its competitive advantage. Therefore, Villalonga defined the sustainability of competitive advantage as the degree by which firm-specific profit persists. Soh (2005) adopted Villalonga's suggestion and used operating return on assets (ROA) to measure the firm-specific profits in his dissertation. On the other hand, Peters (2007) employed ROA and Tobin's q[15] separately to calculate competitive advantage.

Barney (2007) stressed that examining a firm's simple accounting performance (e.g., ROA, EPS) to estimate the firm's competitive advantage has three limitations: managerial discretion (e.g., LIFO, FIFO, rate of depreciation, amortization), short-term bias, and failure to valuate fully the intangible resources and capabilities. Nonetheless, Barney reported that utilizing a firm's adjusted accounting performance (e.g., ROIC, MVA, Tobin's q) also has limitations such as measuring problems in estimating β and theoretical mis-specification of CAPM, intangible resources and capabilities, and adjusted accounting measures of performance.

In this thesis, **ROA** will be used to measure **competitive advantage** because it can be obtained most easily using the opened data of many global companies. Instead of

---

[15] Market Value at the end of the fiscal year based on the firm's traded issues (MKVALF)/Book value of Total Assets (AT)

directly comparing firms' ROA within the same industry, however, the author will measure the changes of ROA (noting **ΔROA**[16]) within a certain period of time.

Using ΔROA has a few advantages. First, what we measure here is not competitive advantage but sustainable competitive advantage, which should be measured including the time dimension. It is consistent with the suggestion of Barney (2001) i.e., authors of empirical resource-based work must usually adopt the time series or some other form of dynamic analysis. Second, it will somehow mitigate the problems raised by Barney (2007), i.e., use of simple accounting performance as managerial discretion, short-term bias, and failure to valuate fully the intangible resources because it will measure longer period data. Finally, it will be compatible with Barney's (2001) definition of sustainable competitive advantage, which does not depend on defining a firm's industry but adopts instead a firm-level dependent variable as the resource-based view using firm level analysis. Therefore, this ΔROA variable basically enables comparing the sustainable competitive advantage of firms regardless of their industry, product portfolio, M&A and diversification effects, etc.

---

[16] ΔROA = ROA of year 2 – ROA of year 1

Ⅴ. RESULTS

This chapter reports the empirical results derived from the empirical analysis and hypothesis testing of the study's major theoretical models. The first section discusses results related to preliminary data analysis including data of the samples, whereas the next section deals specifically with the testing of hypothesis. The last section covers six in-depth qualitative case studies of companies that had shown the best SCA within each industry during five years of in-considerations.

A. PRELIMINARY ANALYSIS

A total of 33 firms that have made it to the DJSI World components consistently for five years ('04~'08) and have issued sustainability or social & environmental reports regularly since year 2005 were analyzed. Their four variables[17] were identified as in the table below. SPS, SFS, and RIIS were set first, and $\triangle$ROA was established later to prevent the author's personal and emotional manipulation of the data, which somewhat depends on the author's judgments. Detailed explanation of the data can be found in Appendix A of this thesis.

---

[17] SPS: Strategic Positioning Score; SFS: Strategic Fit Score; RIIS: Resource Imperfect Imitatibility Score

Table 13: Data of 33 Firms

	Name	Country	Market Sector	SPS	SFS	RIIS	△ROA
1	Vodafone Group PLC	UK	Telecommunications	3	3.5	4	-2.21
2	BT Group PLC	UK	Telecommunications	1.5	1	2	-9.01
3	Telefónica SA	Spain	Telecommunications	2	3	1	+2.83
4	Deutsche Telekom AG	Germany	Telecommunications	3	4	3	+0.07
5	Telecom Italia SpA	Italy	Telecommunications	4	3	3	-3.47
6	BP PLC	UK	Energy	3	2.5	2	+0.51
7	Total SA	France	Energy	3	3.5	2	-0.18
8	Royal Dutch Shell PLC	Netherlands	Energy	4	3	4	+1.20
9	Intel Corp.	USA	Technology	1	3	2	-6.48
10	Dell, Inc.	USA	Technology	3	3	2	-6.43
11	Nokia Corp.	Finland	Technology	4	2	4	-8.20
12	Hewlett-Packard Co.	USA	Technology	2	4	1	+3.73
13	SAP AG	Germany	Technology	4	4	1	-8.48
14	Nestle SA	Switzerland	Food & Beverage	4	3.5	2	+12.53
15	Diageo PLC	UK	Food & Beverage	2	3	2	-0.91
16	Unilever NV CVA	Netherlands	Food & Beverage	4	4	2	+10.39
17	Groupe Danone	France	Food & Beverage	1	4	1	-3.79
18	Cadbury PLC	UK	Food & Beverage	1	3	1	-2.00
19	GlaxoSmithKline PLC	UK	Healthcare	3	2	2	-8.61
20	Novartis AG	Switzerland	Healthcare	4	2	2	-0.15
21	Astrazeneca PLC	UK	Healthcare	2	2.5	1	-0.32
22	Roche Holding AG Part. Cert.	Switzerland	Healthcare	4	3.5	2	+7.33
23	Baxter International, Inc.	USA	Healthcare	2	3	1	+12.87
24	General Electric Co.	USA	Industrial Goods & Services	4	4	3	-0.30
25	3M Co.	USA	Industrial Goods & Services	4	3.5	3	-0.79
26	Siemens AG	Germany	Industrial Goods & Services	4	4	4	-2.28
27	United Technologies Corp.	USA	Industrial Goods & Services	4	4	1	+2.54
28	Caterpillar, Inc.	USA	Industrial Goods & Services	2	3	2	+0.32
29	National Grid PLC	UK	Utilities	2	4	1	-2.09

30	RWE AG	Germany	Utilities	3	4	2	+1.00
31	Centrica PLC	UK	Utilities	3	3	2	-9.44
32	Enel SpA	Italy	Utilities	2	3	2	-2.89
33	Endesa SA	Spain	Utilities	2	3	1	+3.09
Average				2.86	3.20	2.06	-0.59[18]

The analysis[19] of focused sustainability trends revealed that firms focusing on trends related to employee or customer had better ROA growth as predicted by Johnson (2003).

Figure 5: Sustainability Trends and SCA
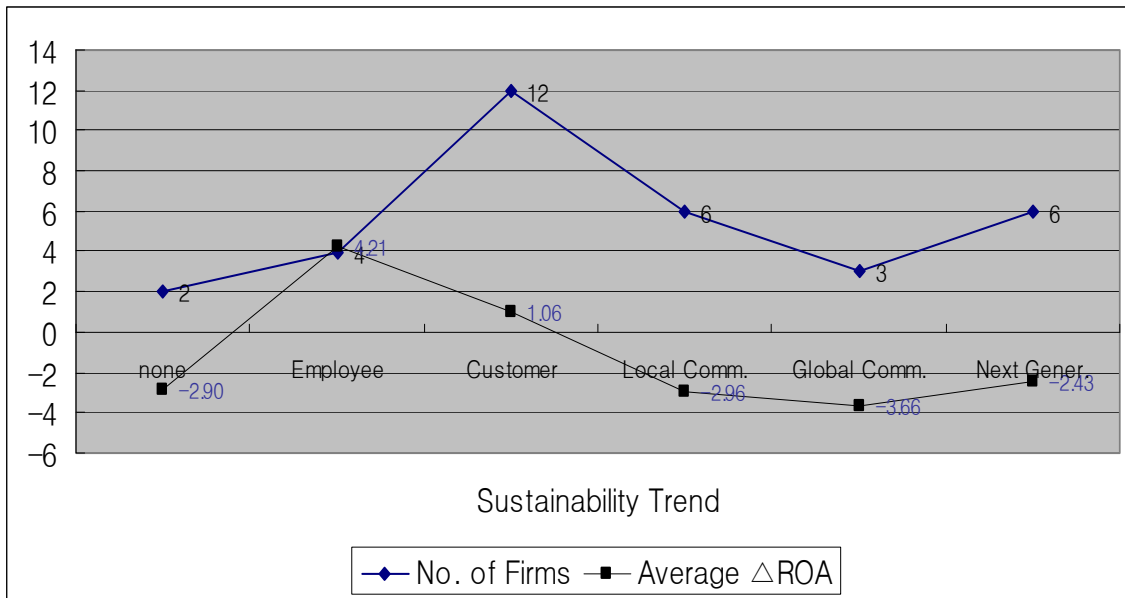
The analysis[17] of focused sustainability impacts revealed that firms focusing on energy or eco-friendly product had worse ROA growth than those focusing on product differentiation (CS).

---

[18] The average △ROA of the Top 100 companies in terms of total asset was -1.17% (see appendix for more details).

[19] To be statistically significant, more samples are required.

Figure 6: Sustainability Impacts and SCA
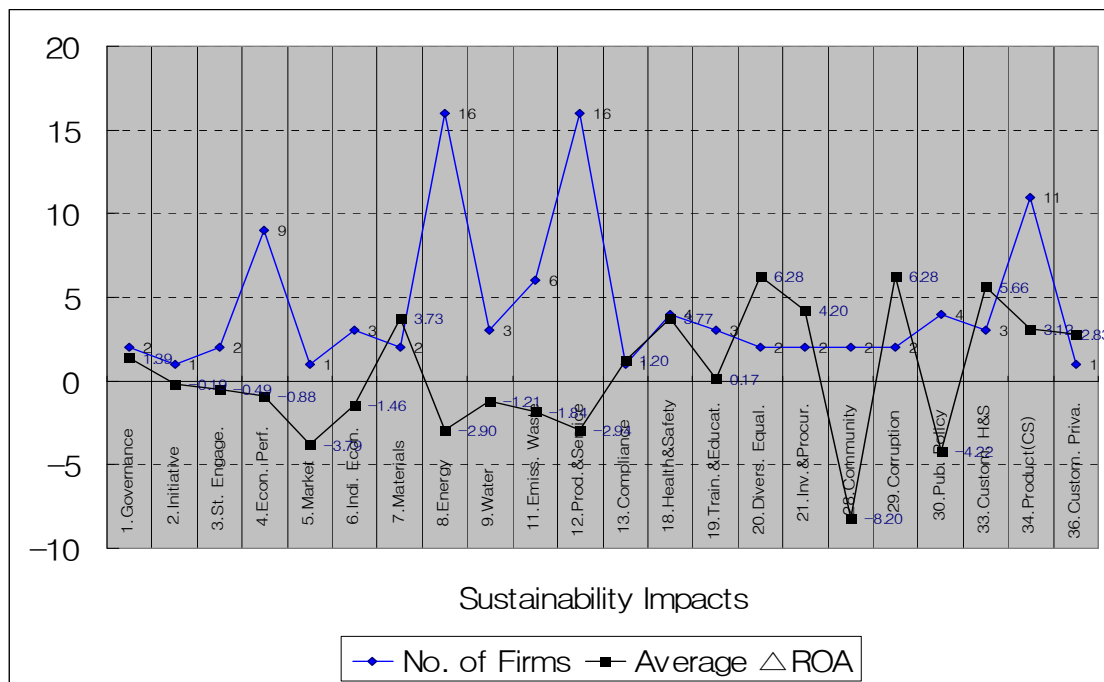
B. RESULT OF THE HYPOTHESIS TEST

The result of the correlation analysis of the data showed no statistically significant correlations. Note, however, that the Strategic Fit Score showed some correlation (0.35) with △ROA, and SPS affected (0.54) RIIS strongly, too. This means that good strategic positioning is somewhat correlated to resource imperfect imitatibility.

Therefore, H1 and H3 were rejected. Note, however, that H2 is held and seems to require further studies to be statistically significant.

After discovering the vague statistical significance of the correlations of data, the author

stopped further statistical analysis and did in-depth case studies instead on the six firms

that had shown the biggest in ROA (i.e., SCA) within each industry to find out the

reasons for the growth as well as areas for improvement for further studies.

Table 14: Correlation Coefficients

	SPS	SFS	RIIS	△ROA
SPS	1			
SFS	0.198645	1		
RIIS	**0.536925**	−0.06101	1	
△ROA	0.153518	**0.356037**	−0.197082	1

Figure 7: Strategic Positioning Score and △ROA
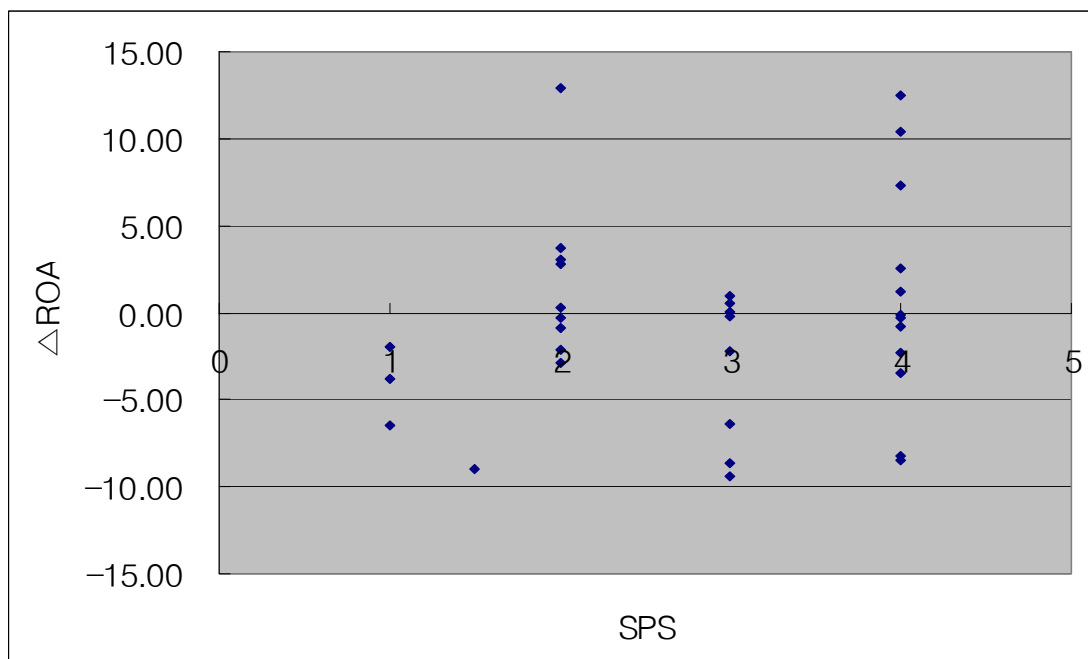
Figure 8: Strategic Fit Score and △ROA
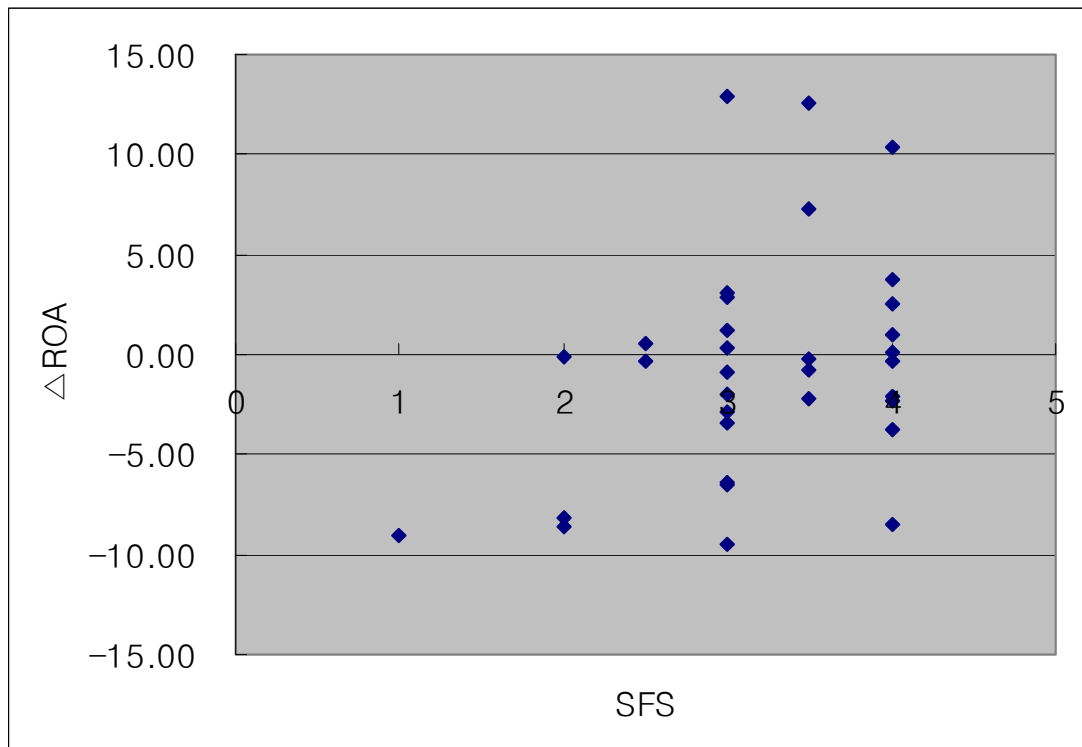
Figure 9: Resource Imperfect Imitatibility Score and △ROA
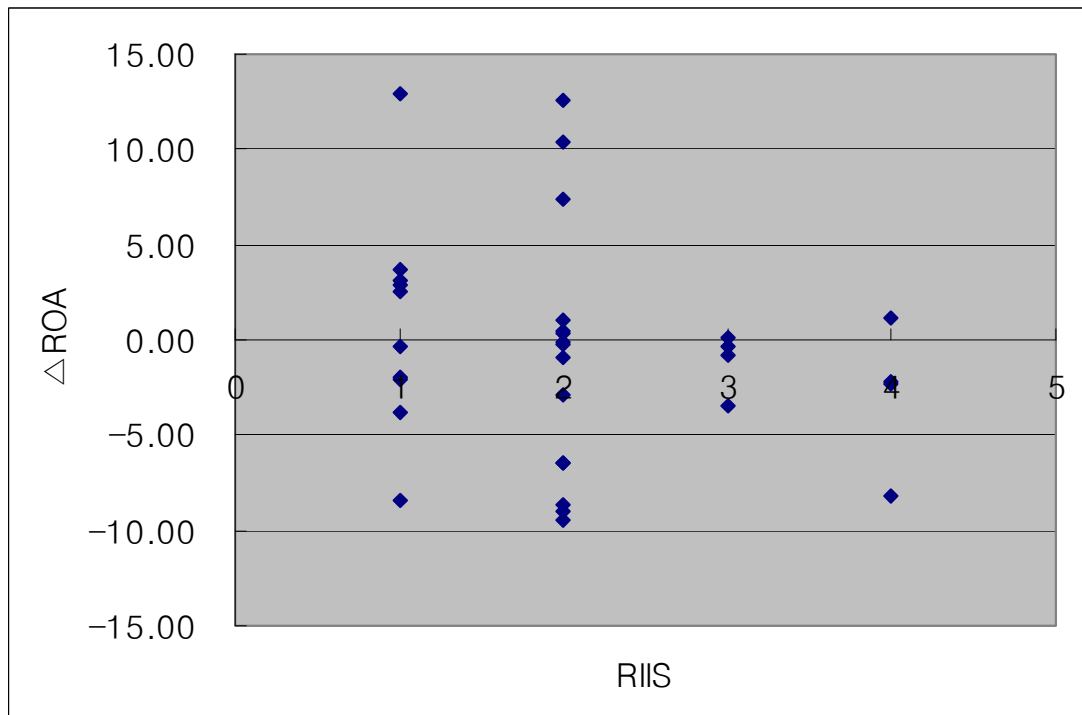
C. IN-DEPTH CASE STUDY OF THE SIX MOST COMPETITIVE FIRMS

Case 1: Telefónica SA/ Spain

According to the Corporate Responsibility Report 2003, Telefónica modified its operating structure to place customers at the center of its activity. The objective was to transform the Group into a more commercial organization -- from product-oriented companies into an integrated Group that satisfies customers' global communication needs. Toward that end, Telefónica has identified four major commercial segments to organize and reinforce its commercial activity: Individuals, Households, SMEs and Corporations, and Administrations. With this segmentation, Telefónica aims at satisfying the needs of customers in a personalized manner to meet their expectations.

In the 2006 and 2007 reports, Telefónica had redefined its corporate vision and Business Principles. It set ambitious targets over the next few years in relation to improving customer satisfaction as well as the working environment at Telefónica. The Group is aware that both these indicators are interlinked, and that it cannot hope to become the operator of choice for its customers or the company most appreciated by society if it is not viewed as the best place to work at the same time. In 2007, it developed incentives for customers to make the best use of the possibilities offered by new technologies.

Figure 10: Vision of Telefónica
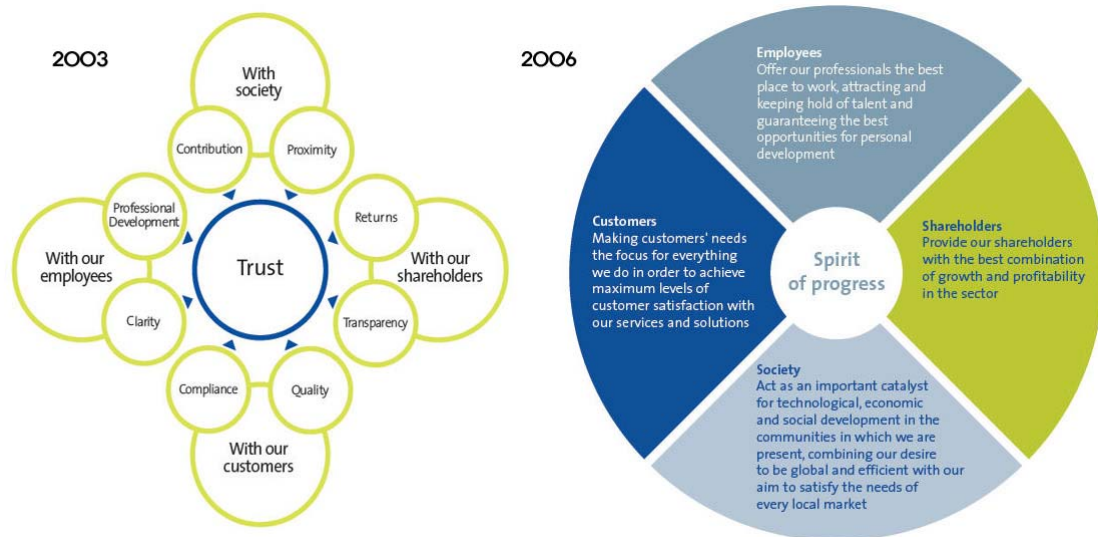
Telefónica can be said to be focusing on four major sustainability trends: ST1 (Employee), ST2 (Shareholder), ST3 (Customer), and ST6 (Local Community). Therefore, the author set the SPS of the firm to 2 because it clearly identified and focused on Sustainability Trends but seemed not clearly positioned. SFS was 3, and RIIS was 1. Most of the activities seemed to be aligned reasonably. Note, however, that it seemed to be exploiting resources that can be easily imitated.

As a whole, Telefónica seemed to be focusing more on operation efficiency rather than on strategic positioning. The fact that the results are the same as what Johnson (2003) had predicted, i.e., CSR does help boost financial performance for companies that

strategically target employee development and satisfaction as well as customer service (including product safety and quality) is meaningful.

In operationalizing a construct, the author asked the companies to pick out the most important Sustainability Trend; in Telefónica's case, however, Telefónica focused on four separate trends. Therefore, in further studies, more trends should be included for consideration to assess the firms' strategy fully.

Case 2: Hewlett-Packard Co./USA

In HP's 2004 Global Citizenship Report, HP prioritized three main issues: "Addressing electronic waste including recycle and reused," "Raising the standards in HP's global supply chain," and "Increasing access to information technology."

In its FY07 Global Citizenship Report Web Content, HP explicitly said thus: "We delivered advanced products and services that helped make our customers — from consumers to the largest global companies — more cost-efficient, more energy-efficient, and more productive." "Our three global citizenship priorities — supply chain responsibility, climate and energy, and product reuse and recycling — are more critical than ever to our business success. These are the areas that reflect growing customer

demands and where we can make the greatest contribution."

Figure 11: Priorities of Hewlett-Packard (2007)
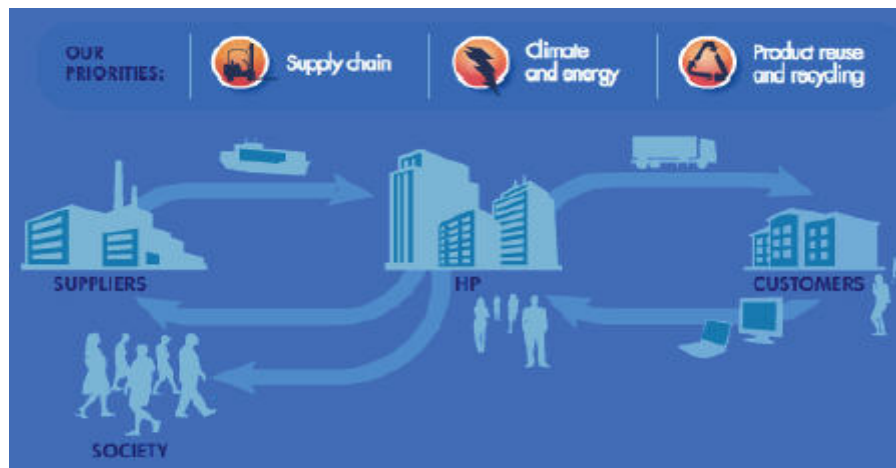
Therefore, HP consistently focused on reducing electronic waste by recycling and reuse in keeping with ST6 ("Electronic pollution"). The firm also consistently focused on ST4 ("Increasing importance of suppliers' rights and roles"). The author picked ST6 as the main sustainability trend it focused on since ST4's main goal is directly related to reducing electronic pollution.

As in Telefónica's case, HP had clearly identified and focused on a few sustainability trends but cannot be said to be positioned clearly from the perspectives of product, customer, and accessible way based on the trends as Porter (1996) emphasized. Nonetheless, all its activities are very much aligned with the cost leadership strategy.

Waste reduction, SCEM, and energy consumption reduction fairly fit each other. Nonetheless, HP can hardly be said to be exploiting imperfectly imitatible resources because they can be easily recognized by competitors and benchmarked easily. HP approached CSR to strengthen its conventional cost leadership strategy as a whole.

Case 3: Nestle SA/Switzerland

According to its 2003 report, Nestle focused heavily on sustainable use of water: "As the world's leading food and beverage company and the world leader in bottled water, Nestle has a responsibility toward the sustainable use of water resources. We are fully convinced that a business strategy for high-quality food and beverage products can only be maintained by business practices founded on the principle of long-term sustainable development. This applies in particular to water and the way this scarce and renewable resource is used." The firm seems to have reacted to the Boycott claiming Nestle is depleting natural water resources.

Nonetheless, it created the 4 x 4 x 4 roadmap aiming to be the recognized leading Nutrition, Health, and Wellness company in the world and the reference for financial performance in its industry.

The different elements of the 4 x 4 x 4 roadmap overlap, interact with, and complement each other. Competitive advantages are individually and collectively founded, with its four competitive advantages uniquely differentiating the Company. Growth drivers are four key opportunities applicable across its product categories, offering potential for enhanced growth. Each of its four strategic pillars represents an area of core competence where the firm seeks to excel.

Figure 12: 4×4×4 Roadmap of Nestle (2009)

Nestle is well-positioned on ST3 ("Obesity, Food nutrition") heavily. Another trend emphasized by Nestle can be said to be ST7 ("Shift of markets toward emerging areas"). All activities of Nestle are chosen fairly well to differentiate it from its competitors.

In Nestlé's case, the model of this thesis predicted very well the economic performance. Nonetheless, the Resource Imperfect Imitatibility Score had to be set relatively low (2), notwithstanding the results. On the other hand, Nestle clearly emphasizes that its competitive advantage comes from unmatched capabilities even though most food and beverage companies such as Unilever and Group Danone are doing similar activities. Therefore, the author acknowledges that measuring parameterized RBV variables is inherently difficult unless the author has fully access to the firm's internal information as argued by Priem and Butler (Barney, 2001). It is probably one of the reasons RIIS did not show any hint of correlation with SCA.

Case 4: Baxter International Inc./USA

Baxter International, Inc., develops, manufactures, and markets products that save and sustain the lives of people with hemophilia, immune disorders, infectious diseases, kidney disease, trauma, and other chronic and acute medical conditions (Baxter, 2008).

According to its 2004 sustainability report, Baxter prioritizes people, restoring credibility with investors, restructuring, and re-engineering business processes including product sustainability.

Baxter (2008) recognized the importance of having clear priorities to focus its efforts and direct its initiatives. In 2007, the company's executive-level Sustainability Steering Committee defined nine priorities falling into three broad categories: Our People, Our Operations and Products, and Our World. These priorities reflect issues of key concern to Baxter and its stakeholders and areas where the company is uniquely positioned to have a positive impact. Since then, Baxter has established longer-term performance goals for each priority to demonstrate its commitment, promote continual improvement, and help stakeholders assess performance. The table below outlines Baxter's sustainability priorities and goals.

Figure 13: Priorities of Baxter International (2008)

Through the years, Baxter has consistently emphasized the importance of people, which is linked to ST1 ("Increasing importance of laborers' rights and roles") compared to other issues. It also places emphasis on product, which is related ST3 ("Extended producer responsibility"). Other issues were either inconsistent or recently emphasized.

As in the case of Telefónica, Baxter seemed to be focusing more on operation efficiency rather than strategic positioning even though it claims that it is uniquely positioned. Baxter also strategically targeted employee development and satisfaction as well as

customer service (including product safety and quality) as Johnson (2003) recommended.

Case 5: United Technologies Corp./USA

UTC claims that it does not choose between responsibility and profitability but pursues both with discipline and focus. It does this with great products and product innovations as well as a relentless focus on productivity and cost reduction.

The firm focuses on energy saving, water use reduction, and waste reduction, which fit UTC's cost reduction positioning. Note, however, that all the activities can be easily benchmarked by competitors. The hypothesis of this thesis predicted a close relation to strategic positioning and fit but made a wrong prediction in terms of resource Imitatibility. When a company continuously improves its operation efficiency, this seems to create some form of barrier preventing easy imitation by competitors.

Case 6: Endesa SA/Spain

Endesa focused on human development related to ST1 ("Increasing importance of laborers' rights and roles"). It also focused on customer satisfaction (ST3) and CO2 emission reduction (ST8).

Endesa clearly identified and focused on sustainability trends but did not show its strategic position clearly. Therefore, SPS was set to 2. Note, however, that its activities fairly fit the identified trends. Moreover, Endesa cannot be said to be exploiting unique resources.

Key Findings of Six In-depth Case Studies

-Firms can focus on more than one trend (Cases 1, 2, 3, 4, 6).

Therefore, to analyze fully a firm's sustainability strategy, one has to take into account the other trends, too. By covering the major sustainability trends, one can reduce the arbitrary mistakes in choosing the most important trends for operationalization. Strategic positioning also has to be analyzed considering the major focused trends.

-Focusing on functional operation efficiency can also lead to good SCA when it is related to HRD or customers even though the firm's positioning is not based on the trend (Cases 1, 4, 6).

Focusing on HRD or customer satisfaction can lead to good SCA. Note, however, that

this approach is possible without taking into account the sustainability concept.

Therefore, the author acknowledges that this approach can result in good economic

performance even though its strategic positioning is not clear, and that the firm is not

exploiting unique resources that are hard to benchmark as Barney (1991) recommended.

Nonetheless, the author can assume that it is not because the firms are not positioned

very well, but because focusing on HRD or customer satisfaction may strength their

already well-defined market positions.

-All firms clearly identified what activities to implement and those with priorities

(Cases 1, 2, 3, 4).

All well-performing firms clearly identified the sustainability impacts that should be

their focus. Most of them fairly aligned the activities to enable strategic fit with each

other and strengthen the strategic positions.

-RBV was very poor in predicting SCA (Cases 1,2,3,4,5,6).

The RIIS (Resource Imperfect Imitatibility Score) was "1" for all cases except case 3

(Nestle), which was "2." Possible explanations include the poor operationalization of RBV or inherent problem of RBV. RBV is apparently not assessed unless the researcher has deep understanding of the firm in question, which is very difficult for this kind of research since it depends on open information only.

VI. CONCLUSION

A. KEY FINDINGS AND MANAGERIAL RECOMMENDATIONS

Effect of Strategic Positioning based on the Focused Sustainability Trends on SCA

- Sustainability Trends can be categorized according to the types of stakeholders (Employee, Shareholder, Customer, Supplier, Competitor, Local Community, Global Community, and Next Generation(Five Plus Three Sustainability Trends Framework)).

- The author could not find any correlation between strategic positioning on the most heavily focused sustainability trends and SCA.

- The in-depth case study of six firms with good SCA revealed that most of them focus on more than one trend. Therefore, full understanding of the relationship between sustainability trends and SCA requires research encompassing not only one trend but also the major focused trends. This method will minimize the misleading results by choosing one trend by fully depending on the researcher's personal judgment.

- Firms focusing on trends related to employees and customers showed better SCA than others. This result is the same as the prediction of Johnson (2003), who said that CSR does help boost financial performance for companies that strategically target

employee development and satisfaction as well as customer service (including product safety and quality). This result also indirectly approves the use of $\triangle$ROA as a measure of SCA regardless of industry. Focusing on trends related to employees and customers seems to strengthen firms' pre-determined position such as differentiation or cost leadership. Therefore, identifying which trends to focus on is more important than whether the firm has clear positioning on the focused sustainability trends.

Effect of the Strategic Fit of Activities (Sustainability Impacts) on SCA

- Sustainability Impacts can be categorized according to the GRI indicators that are used for sustainability reporting.

- The Strategic Fit of activities regardless of positioning shows a vague correlation with SCA, although such was not statistically significant. Therefore, firms have to choose activities that are aligned with the differentiation or cost leadership strategy.

- The in-depth case study of six firms with good SCA revealed that the firms clearly defined which activities to implement with clear prioritization.

- Firms focusing on product differentiation (e.g., customer satisfaction) or employees' health & safety, diversity, and corruption had better SCA than those focusing on affordable product price, energy & water saving, and eco-friendly products & services. Again, this result is similar to the prediction of Johnson (2003).

Effect of the Resource Imperfect Imitatibility of Activities on SCA

- Barney (1991)'s VRIN model was employed to understand the effect of exploited

  resources on SCA.

- The Resource Imperfect Imitatibility of activities had no correlation with SCA. The

  results seem to be attributable to the fact that Resource Imperfect Imitatibility is based

  on unique historical conditions, casual ambiguity, or social complexity that cannot be

  easily recognized by outsiders (Barney, 1991, 2007).

- Note, however, that Resource Imperfect Imitatibility had some correlation with

  positioning, which makes sense, i.e., clear positioning is possible with the help of

  imperfectly imitatible resources.

Managerial Recommendation

- Focus on Sustainability Trends including trends related to employees and customers,

  which will strengthen the firm's strategic position.

- Focus on clearly identified and prioritized activities (Sustainability Impacts) taking

  into account the strategic fit of the activities, which means all activities have to be

  aligned to enforce the strategic position such as differentiation or cost leadership position.

- Exploit resources that are imperfectly imitatible to strengthen the strategic positions.

B. LIMITATIONS OF THIS STUDY AND RECOMMENDATIONS FOR FURTHER STUDIES

Limitations of This Study

- The author could not fully understand the firms' sustainability strategy with open information and given the time constraints.

- The scoring of operationalized variables was subject to the author's personal judgments. Therefore, more sophisticated methods are needed to make the scores more objective.

  (Upgraded operational definitions of SPS, SFS, RIIS for further studies are provided in Appendix Ⅰ. The definitions are developed based on the whole researches of this study including quantitative and qualitative analysis.)

- Only 33 firms were analyzed, thereby resulting in low statistical significance.

Recommendations for Further Studies

- The strategy can be analyzed at different strategic levels: corporate level, competitive level, and functional level.

- Samples can be collected within one industry to mitigate the effect of industry dependence of firms' economic performance.

- The study can be conducted with more samples and with longer time interval to

understand fully the long-term effects of focusing on sustainability trends.

- The method of identifying the important sustainability trends and impacts through

  strategic conversation with stakeholders should be studied further.

- Strategic decision in the context of rapidly changing environment

  (e.g., real option or scenario planning concept)

– 94 –

APPENDICES

APPENDIX Ⅰ (Upgraded Operational Definitions of SPS, SFS, RIIS)

Upgraded Operational Definition of Strategic Positioning on Sustainability Trends (from table 10)

Level	Criterion	Score (SPS)
SP-1	**None of the three criteria below or No clear information** - No clear identification of which trends the company copes with	1

SP-2	**Focusing on Sustainability Trends which dilute or have little links with the firm's core business positioning**
	- New product, new customer, or new accessible way which does not go well with the current positioning (e.g. pricing policy).
	- Examples:
	  • More affordable products and services for less developed market
	  • New business unit or products launch having little links with the firm's core business(e.g. Renewable energy business, Eco-products)
		2

SP-3	**Focusing on Sustainability Trends which have some links with the firms' core business positioning, but without clear generic strategy (differentiation or cost leadership)** - Examples: • Energy saving, renewable energy use of energy firms • Securing future raw material sources • Producing the products in more eco-friendly ways (recycle, reuse, reduce).	3
SP-4	**Focusing on Sustainability Trends which reinforce the firms' core business positioning with clear generic strategy** - Examples: • Coping with the trends related to HR and Customers for differentiation • Investment on R&D for product differentiation • Preventing pollution for cost reduction	4

※ Deduct 0.5 Score if:

  - The positioning is not emphasized, continued for the whole period, or related

   actions are completed in the middle of the period.

Upgraded Definition of Strategic Fit of Activities Linked to Sustainability Impacts (from table 11)

Level	Criterion	Score(SFS)
SF-1	**None of the three criteria below or No clear information** -The company does not have clear focused activities to support the focused sustainability trends.	1
SF-2	**Sustainability Impacts are clearly identified and focused on**, i.e., activities strengthening Strategic Position are clearly identified and focused on. - The activities should be more than three to make interlocking among the activities and reinforce one another. If it is less than three the score should be noted as 1. - Examples: • Only 2 Differentiation $\rightarrow$ SFS=1 • 3 Non Applicable $\rightarrow$ SFS=2	2
SF-3	**Partial Strategic Fit** (three major strengthening activities do not fit one another) - Examples: • 1 Non Applicable + 1 Differentiation + 1 Cost Reduction $\rightarrow$ SFS=2.5 • 2 Differentiation + 1 Cost Reduction $\rightarrow$ SFS=3 • 1 Non Applicable + 2 Differentiation $\rightarrow$ SFS=3.5	3
SF-4	**Full Strategic Fit** (all three major strengthening activities fit one another) - Example: • 3 Differentiation OR 3 Cost Reduction $\rightarrow$ SFS=4	4

Upgraded Definition of Imperfect Imitatibility of Resources (from table 12)

Level	Criterion	Score(RIIS)
RII-1	**All three Sustainability Impacts exploiting the resources related to indirect stakeholders** as local community, global community and next generation, which can be easily recognized and imitated by competitors	1
RII-2	**Two** out of the three Sustainability Impacts exploiting the resources related to indirect stakeholders.	2
RII-3	**One** out of the three Sustainability Impacts exploiting the resources related to indirect stakeholders.	3
RII-4	**All of the three Sustainability Impacts exploiting the resources related to direct stakeholders** as employee, shareholder, customer, supplier and competitor. - All of the activities implemented by the company can not be easily recognized by the competitors and copied because those related to direct stakeholders are usually about history, ambiguity, interpersonal relations, culture, and reputation.	4

Stakeholder type		Sustainability Impact # (from table 6)
Non Applicable(Mixed)		2,3,4
Direct	Employee	16,17,18,19,20,22,23,24,25,29
	Shareholder	1
	Customer	26,33,34,35,36,37
	Supplier	7,21
	Competitor	31
Indirect	Local Community	5,6,8,9,11,12,13,14,15,27,28,30,32
	Global Community	11,12,13,14,15
	Next-generation	10,

APPENDIX Ⅱ (Case Study and Data Gathering)

Company/ Country		1. Vodafone Group PLC/ UK/							Trends OR Impacts	Score
Strategy	Main Strategic Positioning	Capture the potential of mobile to bring socio-economic value in emerging economies, through broadening access to communications to all sections of society'03, '04, '05							ST7:Increasing population	SPS:3
	Three Main Supporting Activities	low-cost handset•low-cost communication							SI4: N/A	SFS:3.5 RIIS:4
		lower prepaid top-up voucher '06							SI34: Differentiation	
		rural rollout•innovative distribution models '07							SI6: Differentiation	
Financial Performance			3/2009	3/2008	3/2007	3/2006	3/2005	3/2004	note	
	ROA(%)		2.74	7.07	-2.17	-11.72	4.95	-3.40	Variation in 5 years(△ROA): -2.21 %	

※ST: Sustainability Trends SI: Sustainability Impacts, SPS: Strategic Positioning Score, SFS: Strategic Fit Score, RIIS: Resource Imperfectly Imitability Score

Company/ Country		2. BT Group PLC/ UK/							Trends OR Impacts	Score
Strategy	Main Strategic Positioning	Spread the benefits of broadband as widely as possible. BT's aim is to connect every UK community, even remote or rural ones '04, '05							ST6: Urbanization, Digital divide	SPS:1.5
	Three Main Supporting Activities	Setting up public-private partnership across the UK '04							SI30: N/A	SFS:1 RIIS:2
		Customer Satisfaction '08							SI34: Differentiation	
		N/A								
Financial Performance			3/2009	3/2008	3/2007	3/2006	3/2005	3/2004	note	
	ROA(%)		-0.46	6.73	10.28	8.26	8.55	7.32	Variation in 5 years(△ROA): -9.01 %	

Company/ Country	3.Telefónica S.A./Spain	Trends OR Impacts	Score

Strategy	Main Strategic Positioning	Customer Satisfaction '07,'03						ST3:Extended producer responsibility	SPS:2
	Three Main Supporting Activities	Incentive customers to make best use of the possibility offered(education)						SI34: Differentiation	SFS:3 RIIS:1
		Safe use of technology, security problems						SI36: Cost Reduction	
		Quality of service						SI34: Differentiation	
Financial Performance		2009	12/2008	12/2007	12/2006	12/2005	12/2004	note	
	ROA(%)		10.93	10.09	6.21	9.29	8.10	Variation in 5 years(△ROA): +2.83 %	

Company/ Country		4.Deutsche Telekom AG/German						Trends OR Impacts	Score
Strategy	Main Strategic Positioning	Providing equal opportunity for all to participate in the IT world '08						ST6:Digital divide	SPS:3
	Three Main Supporting Activities	Senior citizens						SI34: Differentiation	SFS:4 RIIS:3
		Setting up internet connections in remote areas preventing a regional digital divide						SI34: Differentiation	
		underprivileged children and youth						SI34: Differentiation	
Financial Performance		2009	12/2008	12/2007	12/2006	12/2005	12/2004	note	
	ROA(%)		2.80	2.03	2.00	4.84	2.73	Variation in 5 years(△ROA): +0.07 %	

Company/ Country		5. Telecom Italia S.p.A./Italy						Trends OR Impacts		Score
Strategy	Main Strategic Positioning	Elimination or containment of green house gases emissions						ST8: Climate change		SPS:4
	Three Main Supporting Activities	Vidioconference, telework, infomobility service, telemedicine						SI12: Differentiation		SFS:3 RIIS:3
		Energy efficiency(traffic units/energy consumed)						SI8: Cost Reduction		
		Alternative energy source(cogeneration to photovolic plants, wind farm, and fuel cells)						SI8: Cost Reduction		
Financial Performance			2009	12/2008	12/2007	12/2006	12/2005	12/2004	note	
	ROA(%)			3.38	4.69	6.16	5.77	6.85	Variation in 5 years(△ROA): -3.47 %	

Company/ Country		6. BP PLC/UK						Trends OR Impacts		Score
Strategy	Main Strategic Positioning	Low-carbon energy business						ST8:Climate change		SPS:3
	Three Main Supporting Activities	Strive for energy efficiency in operations						SI8: Cost Reduction		SFS:2.5 RIIS:2
		Engage with governments and regulators to shape legislation						SI30: N/A		
		Invest new energy technology(wind, solar, biofuel and carbon capture storage)						SI12: Differentiation		
Financial Performance			2009	12/2008	12/2007	12/2006	12/2005	12/2004	note	
	ROA(%)			13.35	13.39	15.92	15.43	12.84	Variation in 5 years(△ROA): +0.51 %	

Company/ Country		7. Total S.A./France						Trends OR Impacts	Score
Strategy	Main Strategic Positioning	Secure the future energy						ST3:Fossil Fuel Depletion	SPS:3
	Three Main Supporting Activities	Finding & developing new oil and gas reserves						SI6: Differentiation	SFS:3.5 RIIS:2
		Complex technical challenges(deeper water, artic sea, oil sand)						SI4: N/A	
		Renewable energy(solar power, wind power, hydrogen, biofuel)						SI12: Differentiation	
Financial Performance			2009	12/2008	12/2007	12/2006	12/2005	12/2004	note
	ROA(%)			21.21	23.88	24.57	22.36	21.39	Variation in 5 years($\triangle$ROA): -0.18 %

Company/ Country		8. Royal Dutch Shell PLC/ Netherlands						Trends OR Impacts	Score
Strategy	Main Strategic Positioning	Operational excellence through human resource						ST1:Increasing importance of labors	SPS:4
	Three Main Supporting Activities	Safety is priority						SI18: Cost reduction	SFS:3 RIIS:4
		Technical, operational training						SI19: Differentiation	
		compliance training						SI13: Cost reduction	
Financial Performance			2009	12/2008	12/2007	12/2006	12/2005	12/2004	note
	ROA(%)			18.00	18.77	18.97	20.30	16.80	Variation in 5 years($\triangle$ROA): +1.20 %

Company/ Country		9. Intel Corp./USA						Trends OR Impacts	Score
Strategy	Main Strategic Positioning	Environment Friendly Product & Production						ST3:Climate Change	SPS:1
	Three Main Supporting Activities	Most energy-efficient solutions to date						SI8: Differentiation	SFS:3 RIIS:2
		Reducing energy use						SI8: Cost Reduction	
		Reducing water Use						SI9: Cost Reduction	
Financial Performance		2009	12/2008	12/2007	12/2006	12/2005	12/2004	note	
	ROA(%)		15.16	16.47	14.61	26.10	21.64	Variation in 5 years(△ROA): -6.48 %	

Company/ Country		10. Dell Inc/USA						Trends OR Impacts	Score
Strategy	Main Strategic Positioning	Sustainability Life Cycle(Energy Efficient)						ST3:Climate change	SPS:3
	Three Main Supporting Activities	Most energy-efficient products						SI8: Differentiation	SFS:3 RIIS:2
		Energy efficient production and shipment						SI8: Cost Reduction	
		Green energy						SI8: Differentiation	
Financial Performance		1/2009	2/2008	2/2007	2/2006	1/2005	1/2004	note	
	ROA(%)	12.54	13.89	13.05	19.82	18.97	19.28	Variation in 5 years(△ROA): -6.43 %	

Company/ Country		11. Nokia Corp./Finland						Trends OR Impacts	Score
Strategy	Main Strategic Positioning	A world where everyone can be connected						ST6:Shifting of markets towards emerging areas	SPS:4
	Three Main Supporting Activities	More affordable mobile phone for less developed market						SI28: N/A	SFS:2 RIIS:4
		Working with UNDP '03						SI30: N/A	
		Research on developing countries						SI28: N/A	
Financial Performance		2009	12/2008	12/2007	12/2006	12/2005	12/2004	note	
	ROA(%)		12.56	21.99	25.30	22.29	20.76	Variation in 5 years(△ROA): -8.20 %	

Company/ Country		12. Hewlett-Packard Co./USA						Trends OR Impacts	Score
Strategy	Main Strategic Positioning	Addressing electronic waste(recycle and reuse)						ST6:Electronic pollution	SPS:2
	Three Main Supporting Activities	Design for recyclability						SI7: Cost Reduction	SFS:4 RIIS:1
		The return and recycling of computer and print cartridges						SI7: Cost Reduction	
		Reduce the number of substances and potentially hazarders						SI11: Cost Reduction	
Financial Performance		2009	10/2008	10/2007	10/2006	10/2005	10/2004	note	
	ROA(%)		9.24	10.35	8.77	4.58	5.51	Variation in 5 years(△ROA): +3.73 %	

Company/ Country		13. SAP AG/Germany						Trends OR Impacts		Score
Strategy	Main Strategic Positioning	Solutions for Sustainability						ST3:Lifestyle of Health and Sustainability		SPS:4
	Three Main Supporting Activities	Transportation, REACH, Recycling Management Solutions						SI12: Differentiation		SFS:4 RIIS:1
		Supply Chain Management Solution						SI12: Differentiation		
		Human Capital, Governance, Risk and Compliance Solution						SI12: Differentiation		
Financial Performance		2009	12/2008	12/2007	12/2006	12/2005	12/2004	note		
	ROA(%)		18.84	27.35	28.15	25.56	27.32	Variation in 5 years(△ROA): -8.48 %		

Company/ Country		14. Nestle S.A./Swizerland						Trends OR Impacts		Score
Strategy	Main Strategic Positioning	Nutritional needs and quality diets						ST3:Obesity; Food nutrition		SPS:4
	Three Main Supporting Activities	Nutrition research and development						SI34: Differentiation		SFS:3.5 RIIS:2
		Affordable food and beverage for developing countries						SI4: N/A		
		Better-tasting						SI34: Differentiation		
Financial Performance		2009	12/2008	12/2007	12/2006	12/2005	12/2004	note		
	ROA(%)		21.50	12.91	11.89	9.89	8.97	Variation in 5 years(△ROA): +12.53 %		

Company/ Country		15. Diageo PLC/ UK						Trends OR Impacts	Score
Strategy	Main Strategic Positioning	Responsible Drinking						ST3: Lifestyle of Health and Sustainability	SPS:2
	Three Main Supporting Activities	Deliver a responsible drinking initiative						SI2: Differentiation	SFS:3 RIIS:2
		Engage employees and stakeholders						SI3: N/A	
		Participate in constructive industry consultations with WHO, anti-drink-driving campaign						SI30: N/A	
Financial Performance		2009	6/2008	6/2007	6/2006	6/2005	6/2004	note	
	ROA(%)		13.06	15.01	15.41	13.83	13.97	Variation in 5 years(△ROA): -0.91 %	

Company/ Country		16. Unilever N.V. CVA/ Netherlands						Trends OR Impacts	Score
Strategy	Main Strategic Positioning	Brand Management through sustainable operation						ST3: Lifestyle of Health and Sustainability	SPS:4
	Three Main Supporting Activities	Sustainable Agriculture(sourcing sustainable tea, palm oil, etc)						SI21: Differentiation	SFS:4 RIIS:2
		Nutrition Enhancement Program						SI33: Differentiation	
		Hygiene and well-being(hand washing message)						SI33: Differentiation	
Financial Performance		2009	12/2008	12/2007	12/2006	12/2005	12/2004	note	
	ROA(%)		19.72	13.90	13.03	11.32	9.33	Variation in 5 years(△ROA): +10.39 %	

Company/ Country		17. Groupe Danone/ France						Trends OR Impacts	Score
Strategy	Main Strategic Positioning	Danone Way(translating principles into practice)						ST:N/A	SPS:1
	Three Main Supporting Activities	Caring for people						SI19: Differentiation	SFS:4 RIIS:1
		Quality and supplier management						SI5: Differentiation	
		Dialog with consumers and attention to their expectations						SI33: Differentiation	
Financial Performance			2009	12/2008	12/2007	12/2006	12/2005	12/2004	note
	ROA(%)		5.97	4.96	10.71	9.54	9.76	Variation in 5 years(△ROA): -3.79 %

Company/ Country		18. Cadbury PLC/ UK						Trends OR Impacts	Score
Strategy	Main Strategic Positioning	Management approach to CR						ST:N/A	SPS:1
	Three Main Supporting Activities	Ensure ethical & Sustainable sourcing						SI21: Differentiation	SFS:3 RIIS:1
		Reduce Carbon, Water use & packaging						SI7,8,9: Cost Reduction	
		Invest in community						SI6: Differentiation	
Financial Performance			2009	12/2008	12/2007	12/2006	1/2006	1/2005	note
	ROA(%)		4.50	2.24	7.21	7.67	6.50	Variation in 5 years(△ROA): -2.00 %

Company/ Country		19. GlaxoSmithKline PLC/ UK						Trends OR Impacts	Score
Strategy	Main Strategic Positioning	Meet global health care and needs						ST7:Spread of hazardous pollution and serious diseases	SPS:3
	Three Main Supporting Activities	Vaccine against cervical cancer across the developing world						SI4: N/A	SFS:2 RIIS:2
		Malaria vaccine for African children						SI4: N/A	
		Positive Action programs to help people live with HIV/AIDS						SI4: N/A	
Financial Performance			2009	12/2008	12/2007	12/2006	12/2005	12/2004	note
	ROA(%)			16.90	24.04	30.52	24.75	25.51	Variation in 5 years(△ROA): -8.61 %

Company/ Country		20. Novartis AG/ Switzerland						Trends OR Impacts	Score
Strategy	Main Strategic Positioning	Provide best and cost-effective healthcare service						ST7:Spread of hazardous pollution and serious diseases	SPS:4
	Three Main Supporting Activities	Medicine for aging world population						SI4: N/A	SFS:2 RIIS:2
		Medicine related to unhealthy lifestyle and environmental pollution						SI4: N/A	
		Medicine related to emerging market(e.g. malaria and leprosy programs)						SI4: N/A	
Financial Performance			2009	12/2008	12/2007	12/2006	12/2005	12/2004	note
	ROA(%)			12.13	9.92	12.21	12.58	12.28	Variation in 5 years(△ROA): -0.15 %

Company/ Country		21. Astrazeneca PLC/ UK						Trends OR Impacts	Score
Strategy	Main Strategic Positioning	Building capability in the new science and technology through capable talents '03,'07						ST1: Increasing importance of labors' rights and roles	SPS:2
	Three Main Supporting Activities	Integrity and high ethical standards						SI29: Cost reduction	SFS:2.5 RIIS:1
		Respect for the individual and diversity						SI20: Differentiation	
		Leadership by example at all levels						SI1: N/A	
Financial Performance		2009	12/2008	12/2007	12/2006	12/2005	12/2004	note	
	ROA(%)		18.56	16.65	28.54	26.84	18.88	Variation in 5 years(△ROA): -0.32 %	

Company/ Country		22. Roche Holding AG Part. Cert./ Switzerland						Trends OR Impacts	Score
Strategy	Main Strategic Positioning	Personalized healthcare						ST3:Lifestyle of Health and Sustainability	SPS:4
	Three Main Supporting Activities	Innovation						SI4: N/A	SFS:3.5 RIIS:2
		Commitment to quality and performance						SI34: Differentiation	
		State-of-the-art technologies						SI34: Differentiation	
Financial Performance		2009	12/2008	12/2007	12/2006	12/2005	12/2004	note	
	ROA(%)		18.61	19.57	16.91	13.24	11.28	Variation in 5 years(△ROA): +7.33 %	

Company/ Country		23. Baxter International Inc./ USA						Trends OR Impacts	Score
Strategy	Main Strategic Positioning	Make sustainability part of firm's culture focusing on people						ST1:Increasing importance of labors' rights and roles	SPS:2
	Three Main Supporting Activities	A safe and healthy workplace						SI18: Cost Reduction	SFS:3 RIIS:1
		An inclusive and diverse workplace						SI20: Differentiation	
		Ethical conduct and legal compliance						SI29: Cost Reduction	
Financial Performance		2009	12/2008	12/2007	12/2006	12/2005	12/2004	note	
	ROA(%)		15.91	13.82	11.89	11.35	3.04	Variation in 5 years($\triangle$ROA): +12.87 %	

Company/ Country		24. General Electric Co./ USA						Trends OR Impacts	Score
Strategy	Main Strategic Positioning	New Business coping with Global natural resources(and demographics)						ST8:Natural resource depletion	SPS:4
	Three Main Supporting Activities	Wind power(renewable energy)						SI12: Differentiation	SFS:4 RIIS:3
		Fresh water facility						SI12: Differentiation	
		More energy-efficient product						SI12: Differentiation	
Financial Performance		2009	12/2008	12/2007	12/2006	12/2005	12/2004	note	
	ROA(%)		2.40	3.34	3.34	3.15	2.70	Variation in 5 years($\triangle$ROA): -0.3 %	

Company/ Country		25. 3M Co./ USA						Trends OR Impacts	Score
Strategy	Main Strategic Positioning	Pursuit of customer satisfaction and commercial success within a framework of environmental, social and economic values.						ST3:Lifestyle of Health and Sustainability	SPS:4
	Three Main Supporting Activities	Product Life Cycle Management						SI12: Differentiation	SFS:3.5 RIIS:3
		3M Environmental Product Solution						SI12: Differentiation	
		Engaging Stakeholders						SI3: N/A	
Financial Performance		2009	12/2008	12/2007	12/2006	12/2005	12/2004	note	
	ROA(%)		19.99	24.76	26.42	23.50	20.78	Variation in 5 years(△ROA): -0.79 %	

Company/ Country		26. Siemens AG/ Germany						Trends OR Impacts	Score
Strategy	Main Strategic Positioning	Play a leading role in shaping tomorrow's technologies						ST6: Increasing pollution	SPS:4
	Three Main Supporting Activities	Water and wastewater treatment						SI12: Differentiation	SFS:4 RIIS:4
		Traffic management						SI12: Differentiation	
		A wide range of products and solutions for climate and environmental protection						SI12: Differentiation	
Financial Performance		2009	9/2008	9/2007	9/2006	9/2005	9/2004	note	
	ROA(%)		3.04	5.57	3.91	4.85	5.32	Variation in 5 years(△ROA): -2.28 %	

Company/ Country		27. United Technologies Corp./ USA						Trends OR Impacts	Score
Strategy	Main Strategic Positioning	Product innovations and a focus on productivity and cost reductions through environmental management						ST3: Increasing pollution	SPS:4
	Three Main Supporting Activities	Energy saving(GHG reduction)						SI8: Cost reduction	SFS:4 RIIS:1
		Water use reduction						SI9: Cost reduction	
		Waste reduction						SI11: Cost reduction	
Financial Performance			2009	12/2008	12/2007	12/2006	12/2005	12/2004	note
	ROA(%)			12.28	11.70	11.65	10.20	9.74	Variation in 5 years(△ROA): +2.54 %

Company/ Country		28. Caterpillar Inc./ USA						Trends OR Impacts	Score
Strategy	Main Strategic Positioning	Environmental management(focusing on EHS)						ST3: Increasing pollution	SPS:2
	Three Main Supporting Activities	Energy saving(GHG reduction)						SI8: Cost reduction	SFS:3 RIIS:2
		Water use reduction, Waste reduction						SI9: Cost reduction	
		Material and energy efficient products						SI12: Differentiation	
Financial Performance			2009	12/2008	12/2007	12/2006	12/2005	12/2004	note
	ROA(%)			6.60	8.82	9.45	8.20	6.28	Variation in 5 years(△ROA): +0.32 %

Company/ Country		29. National Grid PLC/ UK							Trends OR Impacts	Score
Strategy	Main Strategic Positioning	Operate in the most efficient, cost effective and environmentally sound way							ST6:Incrasing pollution	SPS:2
	Three Main Supporting Activities	Reduce employee Lost Time							SI18: Cost Reduction	SFS:4 RIIS:1
		Reduce significant environmental incidents							SI11: Cost Reduction	
		Reduce GHG							SI8: Cost Reduction	
Financial Performance		3/2009	3/2008	3/2007	3/2006	3/2005	3/2004	note		
	ROA(%)	3.13	5.80	6.17	6.63	5.22	5.71	Variation in 5 years(△ROA): -2.09 %		

Company/ Country		30. RWE AG							Trends OR Impacts	Score
Strategy	Main Strategic Positioning	Protection of climate change							ST8: Climate change	SPS:3
	Three Main Supporting Activities	State-of-the-art power plant with lower CO2 output(even with coal)							SI8: Differentiation	SFS:4 RIIS:2
		Use renewable energy profitably							SI8: Differentiation	
		House-holds with smart meters helping the customers to save electricity							SI8: Differentiation	
Financial Performance		2009	12/2008	12/2007	12/2006	12/2005	12/2004	note		
	ROA(%)		5.21	6.29	3.78	3.54	4.21	Variation in 5 years(△ROA): +1.00 %		

Company/ Country		31. Centrica PLC/ UK						Trends OR Impacts	Score
Strategy	Main Strategic Positioning	Generate power through low emission technologies, minimizing climate change as Centrica move towards a low-carbon future						ST8: Climate change	SPS:3
	Three Main Supporting Activities	Lead the consumer market for low carbon energy products and services						SI8: Differentiation	SFS:3 RIIS:2
		Maintain low-carbon position in power generation(British Gas New Energy)						SI12: Differentiation	
		Reduce the environmental impact of operation						SI11: Cost Reduction	
Financial Performance			2009	12/2008	12/2007	12/2006	12/2005	12/2004	note
	ROA(%)			2.45	17.81	0.31	13.63	11.89	Variation in 5 years(△ROA): -9.44 %

Company/ Country		32. Enel S.p.A./ Italy						Trends OR Impacts	Score
Strategy	Main Strategic Positioning	Environment-proof power stations						ST8: Climate change	SPS:2
	Three Main Supporting Activities	Clean coal						SI11: Cost reduction	SFS:3 RIIS:2
		Capture CO2						SI11: Cost reduction	
		Wind 100% green energy						SI12: Differentiation	
Financial Performance			2009	12/2008	12/2007	12/2006	12/2005	12/2004	note
	ROA(%)			4.79	4.92	9.48	9.49	7.68	Variation in 5 years(△ROA): -2.89 %

Company/ Country		33. Endesa S.A./ Spain						Trends OR Impacts	Score
Strategy	Main Strategic Positioning	Human resource management & development						ST1: Increasing importance of labors' rights and roles	SPS:2
	Three Main Supporting Activities	Health, Safety of employee						SI18: Cost Reduction	SFS:3 RIIS:1
		HRD						SI19: Differentiation	
		Good governance and ethical conduct						SI1,29: Cost Reduction	
Financial Performance		2009	12/2008	12/2007	12/2006	12/2005	12/2004	note	
	ROA(%)		7.36	6.75	8.88	8.21	4.27	Variation in 5 years(△ROA): +3.09 %	

Average ROA of thirty three companies which have been listed in DJSI for last 5 years.

Financial Performance		Last FY	Last FY-1	Last FY-2	Last FY-3	Last FY-4	note
	Average ROA(%)	10.74	12.29	12.53	12.28	11.33	Average(△ROA): -0.59 %

Average ROA of ninety four[20] companies which are listed as Top100 total asset companies in Bureau van Dijk Osiris Web DB

Financial Performance		Last FY	Last FY-1	Last FY-2	Last FY-3	Last FY-4	note
	Average ROA(%)	-0.07	1.08	1.27	1.17	1.10	Average(△ROA): -1.17 %

---

[20] ROA of six companies were not fully available in the DB.

BIBLIOGRAPHY

1. Takis Katsoulakos and Yannis Katsoulacos, *Strategic management, corporate responsibility and stakeholder management integrating corporate responsibility principles and stakeholder approaches into mainstream strategy: a stakeholder-oriented and integrative strategic management framework*, CORPORATE GOVERNANCE, VOL, 7 NO. 4, 2007, 355-369

2. Homer H. Johnson, *Does it pay to be good? Social responsibility and financial performance*, Business Horizons, November-December 2003

3. Marc Vilanova, Josep Maria Lozano, Daniel Arenas, *Exploring the Nature of the Relationshio Between CSR and Competitiveness*, Journal of Business Ethics, Apr 2009, Vol 87, 57-69

4. Michael E. Porter and Mark R. Kramer, *Strategy & Society: The Link Between Competitive Advantage and Corporate Social Responsibility*, Harvard Business Review, December 2006

5. Freeman, E.R., *Strategic Management: A Stakeholder Approach*, Pitman, Boston, MA, 1984

6. Robert B. Gibson, *Sustainability Assessment (Criteria and Process)*, London, Earthscan, 2005

7. Andres R. Edwards, *The Sustainability Revolution: portrait of a paradigm shift*, Gabriola Island, Canada, New Society Publishers, 2005

8. Adrian Henriques and Peter Lærke-Engelschmidt, *Focus on Sustainability and its implications for CSR*, London, British Standards Institution,2007, 3-9

9. Michael E Porter, *Competitive Advantage: Creating and Sustaining Superior Performance,* 1998

10. Michael E. Porter, *The Five Competitive Forces That Shape Strategy*, Harvard Business Review, January 2008

11. W. Edward Stead and Jean Garner Stead, *Sustainable Strategic Management*, New York: M.E.Sharpe, Inc, 2004

12. SAM, *Corporate Sustainability Management Training Course*, Seoul, 2008

13. William R. Blackburn, *The Sustainability Handbook: The Complete Management Guide to Achieving Social, Economic and Environmental Responsibility*, Washington DC: Environmental Law Institute, 2007

14. Rodger Spiller, *Ethical Business and Investment: A Model for Business and Society*, Journal of Business Ethics, Vol. 27, No. 1/2, Sep 2009, 149-160

15. Lucio Lamberti, Emanuele Lettieri, *CSR Practices and Corporate Strategy: Evidence from a Longitudinal Case Study*, Journal of Business Ethics, Vol.87, Jun 2009, 153-168

16. Morgan P. Miles, Linda S. Munilla, Jenny Darroch, *The Role of Strategic Conversations with Stakeholders in the Formation of Corporate Social Responsibility Strategy*, Journal of Business Ethics, Vol. 69, iss. 2; Dec 2006, 195-205

17. Michael E. Porter, *What Is Strategy?*, Harvard Business Review, Nov-Dec 1996, 61-78

18. Alan D. Smith, *Making the case for the competitive advantage of corporate social responsibility*, Business Strategy Series, Northampton: 2007, Vol. 8, Iss. 3, 186-195

19. Global Reporting Initiative, *Sustainability Reporting Guidelines*, 2006

20. Jay B. Barney, *Firm resources and sustained competitive advantage*, Journal of Management, Vol. 17 No.1, 1991 , 99-120

21. Jay B. Barney, *Gaining and sustaining competitive advantage*, Pearson Education, Inc., New Jersey, 2007, 133-150

22. Augustine A. Lado, Nancy G. Boyd, Peter Wright, *A Competency-Based Model of Sustainable Competitive Advantage: Toward a Conceptual Integration*, Journal of Management, Bloomington: Mar 1992. Vol. 18, 77-91

23. Jay B. Barney, *Is the Resource-Based "View" a Useful Perspective For Strategic Management Research? Yes*, Academy of Management Review, 2001, Vol. 26, No. 1, 41-56

24. Jeffrey R. Williams, *How Sustainable is Your Competitive Advantage*, California Management Review, Berkeley: Spring 1992. Vol. 34, lss.3, 29-51

25. Villalonga, B., *Intangible resources and the sustainability of competitive advantage*, Journal of Economic Behavior, November, 2002

26. Mabel Soh, *A correlation study of the relationship between a firm's intangible resources and its sustainable competitive advantage*, dissertation, The George Washington University, 2005, 55-61

27. Richard C. Peters, *Corporate Social Responsibility And Strategic Performance: Realizing A Competitive Advantage Through Corporate Social Reputation And A Stakeholder Network Approach*, dissertation, Florida Atlantic University, 2007, 74-75

28. Dow Jones, STOXX Limited and SAM Group: http://www.sustainability-index.com

29. Finacial Data(ROA): Bureau van Dijk Osiris Web DB

    https://osiris.bvdep.com/version-2009811/cgi/template.dll?product=20

30. Sustainability reports, http://www.corporateregister.com

31. Telefónica, *Corporate Responsibility Report*, 2003, 2006, 2007

32. Hewlett-Packard Co., *Global Citizenship Report*, 2004, 2007

33. Nestle, *Nestle and Water/ Sustainability, Protection, Stewardship*, 2004

34. Nestle, *Management Report 2008/ The world's leading Nutrition Health and Wellness Company*, 2009

35. Baxter International, *2004 Sustainability report Summary*, 2005

36. Baxter International, *Baxter 2008 Sustainability priorities report*, 2009

37. Endesa, *Sustainability report*, 2004, 2007