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**A Strategic Thinking and Systems  
Analysis of Socially Responsible  
Business Models in the  
Telecommunications Industry**

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## **A Strategic Thinking and Systems Analysis of Socially Responsible Business Models in the Telecommunications**

**Industry**

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### **Abstract**

The dramatic changes of global climate, industrial and technological innovations, and social needs have launched a review on the solely profit-oriented business practices and their side effects on the global society and economic systems. Corporate social responsibility (CSR) has become one of the emerging topics among the areas of business, management, and social science. Conventional business models have long focused on the developments to fulfill the economic needs. However, recent studies have consistently suggested that societal needs can define the modern markets and social harms can create internal costs for firms. For corporates and organizations, socially responsible business models are very demanding for enhancing their sustainable competitive advantages and can be rapidly spread over many industries highly associated with the society such as the telecommunications industry. Telecommunications systems can be considered as a core in this world's operations. Complex networks, telephones, mobile phones and internet-linked PCs are bundled together to serve nearly all of us. Over the past decade, rapid deregulation and innovation have made the telecommunications industry to deeper association with the society. In many countries around the world, even government monopolies are now privatized and they face a relatively open competition. Strategic thinking and innovative business models are indeed required for better practices.

In this paper, we propose a strategic thinking and comprehensive systems analysis of socially responsible business models in the telecommunications industry. Systems thinking methodology and causal loop diagram are applied to the causal loops analysis of three different business paradigms: (1) the conventional business models, (2) CSR anchored business models, and (3) the socially responsible business models with shared values. The systems thinking modeling can improve our understanding on the features of socially responsible business models in the telecommunications industry and, most importantly, the strategies for business improvements and the challenges to be cautious with future business and market competition.

**Keywords :** Corporate social responsibility, creating shared value, business model, systems thinking, green economy

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## Research Background

Adam Smith's Wealth of Nations advocated free market capitalism and corporations giving life to global economic and political arenas. Corporations have enhanced wealth for capitalists and nations, created jobs, and enhanced the quality of life for employees, but this has also caused gaps between national powers, between the rich and the poor in society, oppressed human rights of laborers, and environmental concerns. In recent years, humanity continues to use corporations to create wealth and enhance the quality of life, but has also modified capitalism to prevent corporate harms on society through legal, public good, and human rights perspectives. Many studies have prompted corporations to rethink their corporate social responsibility (CSR) toward stakeholders, concretizing corporate ethics (Chen, 2009).

Following the thinking of CSR, corporations have started to shape their public images, proactively participating in community and sponsorship activities. Corporations rethink the opportunities and mechanisms in their orientation, and the pursuit of maximized profit for shareholders is not the only responsibility and objective. Thus, CSR is not only a means for corporations to improve the image, and do not just involve donating money. Besides abiding by basic legal regulations and participation in social welfare, corporations should also combine CSR behavior with corporate missions, values, and cultures, in order to enhance and manage corporate efficiency and competitiveness. Professor Michael Porter of Harvard University has proposed that since corporations and society are interdependent, both sides should hold to the principle of "shared values" to make mutually beneficial decisions. Corporations should integrate social perspectives into the core framework of pursuing competitiveness and business strategies.

This study is based on the CSR strategies as variables derived from corporate growth theory framework by Professor Sberman (2000) of MIT Sloan School of Management and Angeloantonio Russo and Antonio Tencati's (2009) CSR strategy analysis on 3,626 corporations in Italy, and follows the concept of Creating Shared Value (CSV) (Porter & Kramer, 2011) to integrate the influence of key issues in CSR and CSV strategies on corporate growth. This study explores issues such as whether corporate assistance in the resolution of social issues can bring actual economic benefit to the sustainable growth of corporations in the context of intense industrial competition. The modeling software VENSIM is used, along with theory and previous literature to construct a model based on the hypothesis, to develop a system causal feedback structure diagram for CSR and CSV strategies and corporate growth.

Past articles discuss individual CSR actions or strategies by corporations, and few have incorporated a systems perspective of competition and environment in corporate growth, and also lack an integrated perspective on CSV strategy. Based on the research motivation above, this study uses telecommunications industry as the research subject. In the intensely competitive telecommunications management environment, the telecommunications industry should cope with climate change and consider

visionary innovation and sustainable development, emphasizing issues of corporate economic development, environment, and society. Corporations should continue enhancing communication with investors and shareholders, in order to enhance social value to create corporate value. This study aims to explore corporate adoption of CSR and CSV strategies as well as the influence and benefits on corporate growth, so that corporate owners in telecommunications industries can use them as a reference in establishing strategies.

**Research Objectives**

The main goals of this study is to construct a model based on systems thinking to explore the influence of different CSR strategies on corporate growth and the benefits of CSR and CSV strategies.

This study first explores the important factors in corporate operational growth, and researches the influence of CSR and CSV strategies on corporate growth and the benefits. Based on past research literature, the causal loop diagrams will be proposed.

**Research Method**

This study uses Systems thinking as the research methodology foundation, as well as the connection between system design and causal relationships to find the key factors in CSR and CSV strategies that affect corporate growth, to research the interactive relationship and causal feedback performance. This is provided so that corporate owners can carry out simulations before making decisions and in the strategy formation process, to serve as a reference and suggestion for the thinking process and management in strategy formation.

Indicate	Positive Reinforcement	Negative Reinforcement	Reinforcing Loop	Balancing Loop	Time Delay
Figure	+ →	- →	R ↻	B ↻	

Figure 1 Basic language diagrams in systems thinking

Basic language in systems thinking (Figure 1)

1. Reinforcing feedback  
As long as something continues growing, it can be assured to be a strengthening operation, like a snowball. The effects can be positive and can be negative.
2. Balancing feedback  
Whenever target-oriented behavior is found, balancing feedback is at work.
3. Time delay



It would interfere with the influence process causing the results of the action to be produced gradually.

**The model framework of this study**

The model framework of this study refers to the corporate growth model theory that does not include CSR, by Professor Sterman (2000) of MIT Sloan School of Management, and the CSR strategy analysis by Angeloantonio Russo and Antonio Tencati (2009) on 3,626 corporations in Italy, as well as the CSV theory proposed by Professor Porter of Harvard University to engage in systems thinking and model construction procedures.

1. Corporate growth and management environment

(1) Positive feedback basic model for corporate growth

MIT Sloan School of Management Professor Sterman (2000) used 35 systems thinking cycle path diagrams to construct various positive feedback models of corporate growth. The essence of the theory is that for corporations to continue to grow, it is necessary to continuously enhance sales energy and lower the energy of unit costs. Following the theory, this study constructs a correlation diagram for capacity to lower cost and capacity to increase sales, as shown in Figure 2.

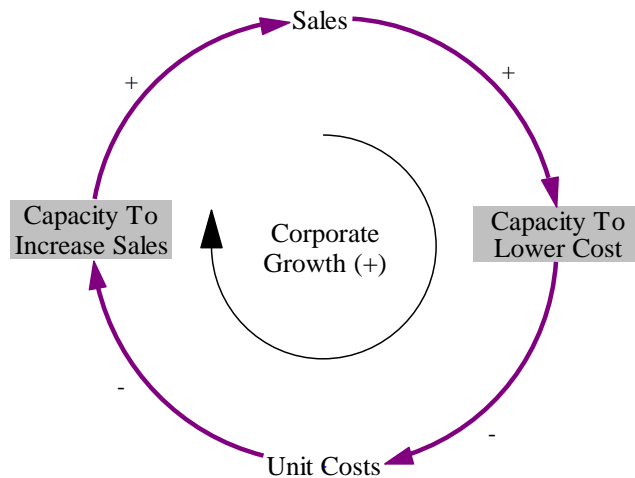


Figure 2 Positive feedback basic model for corporate growth

(2) Corporate growth upper limit basic model

(a) Corporate growth is limited by rules:

Corporations expand the scale of production to lower unit costs, and enhance high-pollution public harms and risk crises, such as: increase of the problem of resource depletion and carbon emissions. Pressure from climate change and social issues has caused a rise of environmental protection and sustainable development consciousness, and the environmental impact issues from products produced by corporations has received increasing attention; international legislation is being promoted

(such as WEEE, RoHS, and EuP), the main regulations and restrictions arise from American and European regulations of environmental regulations, also resulting in major regulations and effects on Taiwanese corporations. Corporate management is being limited by increasing numbers of regulations, resulting in increased costs in environmental processing, resulting in lowered cost energy, as seen in Figure 3(right cycle balancing loop).

- (b) Corporate growth is limited by intra-industry competition:  
 If product sales are good, there is higher potential for profit and increased market attraction. However, in the environment of global competition, the addition of other companies in the industry would increase competition in the industry, resulting in inability to enhance sales energy, as seen in Figure 3(left cycle balancing loop).

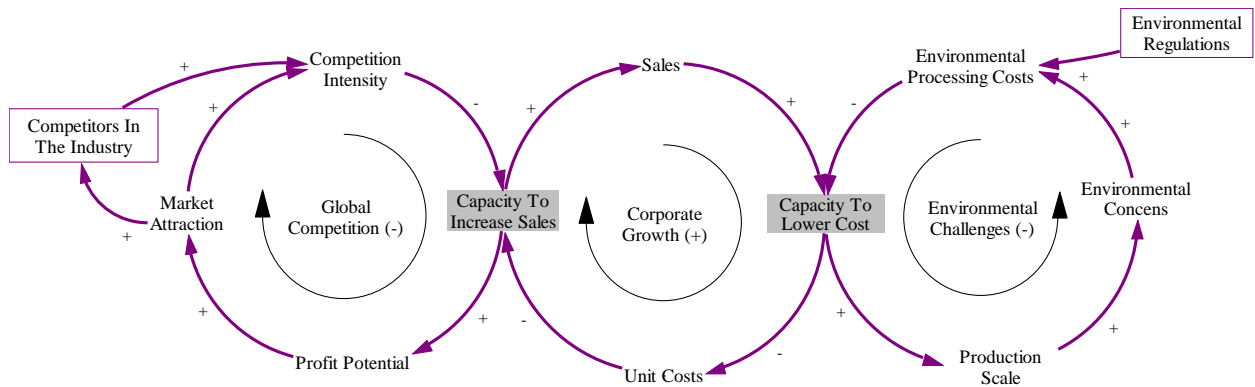


Figure 3 Corporate growth upper limit basic model

(3) Corporate adoption of CSR strategy items  
 Angeloantonio Russo and Antonio Tencati (2009) analyzed the 3,626 corporations in Italy, including micro-companies, small companies, medium companies, and large companies. In formal and informal CSR strategic responses to stakeholders, they discovered the CSR strategies used by corporations, as seen in Table 1.

Table 1 Formal vs. Informal CSR Strategies:

CSR strategy	Variable
Environment	Pollution reduction, Noise reduction Energy reduction, Water reduction Waste management, Alternative energy Packaging recovery
Employment	Corporate internal communication Flexible working time Corporate activities for employees' benefit Integrative medical care

	Briefing with employees Training activities Subsidized financing
Local community	Sponsorship, Giving Corporate advertising, Cause-related marketing
Supply chain	Suppliers' selection Customers' selection
Community volunteering	Hiring of disadvantaged persons Volunteering
Report	EMAS, ISO14001 Environmental report Ethical code SA8000 Social report

Angeloantonio Russo and Antonio Tencati(2009)

Corporate social responsibility reports are non-financial performance information reports. Corporations can use this to improve its external reputation, strengthen the corporate reputation of the company, and serve as a communication tool with the stakeholders (Mo, 2007). In addition, the rise of corporate social responsibility investment products, and their input in environmental and social responsibility can enhance corporate investment value (Chen, 2009).

This study uses the above CSR strategy items as variables (EMAS is excluded because it is rarely used in Taiwan) to explore the influence of CSR strategy on corporate growth. The primary purpose of the research simulation is to construct the model, to help corporate owners to evaluate and consider the usage of different CSR strategies and how they influence corporate growth, helping corporations to make the optimal decisions.

### Model design

#### 1. Correlation of CSR image strategy and establishment to the elevation of corporate image

The CSR exemplar in the telecommunications industry, Chunghwa Telecom, has the primary intrinsic motivation for public welfare activities as: 1) to enhance the corporate image and public relations; 2) to gain a sense of identification from the community and society; 3) to enhance corporate name recognition; 4) to follow the world trends; 5) company culture; 6) increase media exposure (Xie, 2008). CSR strategies in sponsorship, gifts, and corporate advertising can all enhance corporate image and name recognition, as shown in Figure 4.

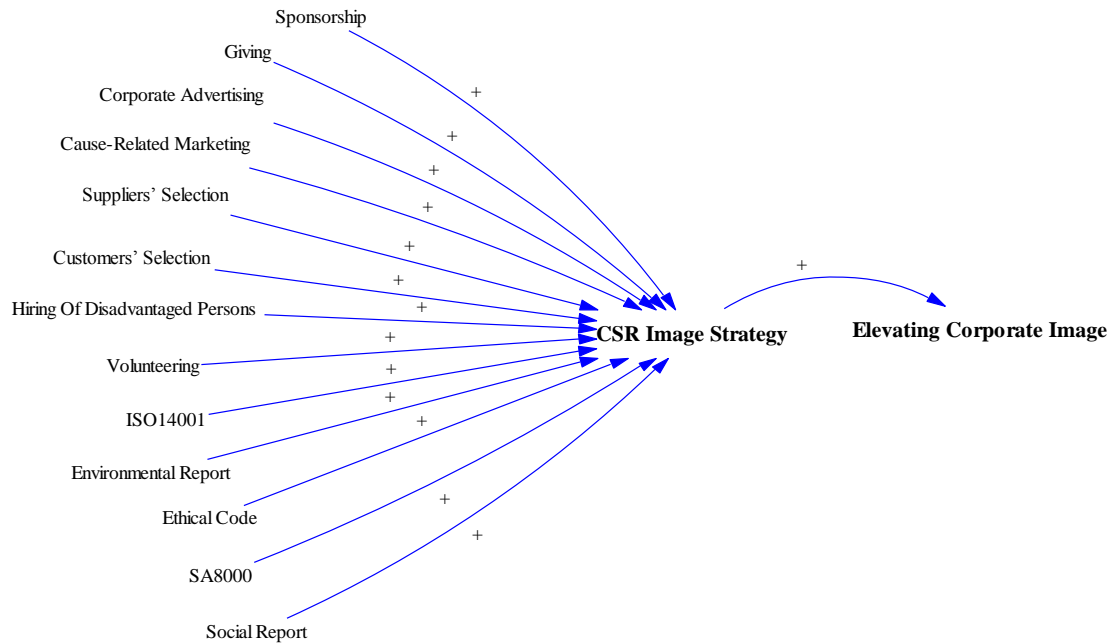


Figure 4 Correlation of CSR image strategy and establishment to the elevation of corporate image

## 2. CSR environmental strategy and correlation to environmental protection actions

There is already large-scale depletion of water, energy, and other resources; increased expenses due to scarcity would affect the management of corporations. Climate change continues to worsen, so corporations have started to pay more attention to carbon emission checks, energy-saving, and decrease of carbon emissions. The future increasing value of carbon is becoming a clear trend, and may impact business models in the future. Environmental protection measures such as lowering pollution, lowering noise, saving energy and lowering carbon emissions may enhance corporate costs in the short run, but in the long run it can save costs (Angeloantonio Russo and Antonio Tencati, 2009). In terms of alternative energy, Thomas Friedman(2008) mentions that in the next decade, the cost for producing energy, whether it is solar power modules, wind turbines, or water power generation units connected to dams, as long as they are complete, the dynamic costs would certainly be zero. As shown in Figure 5.

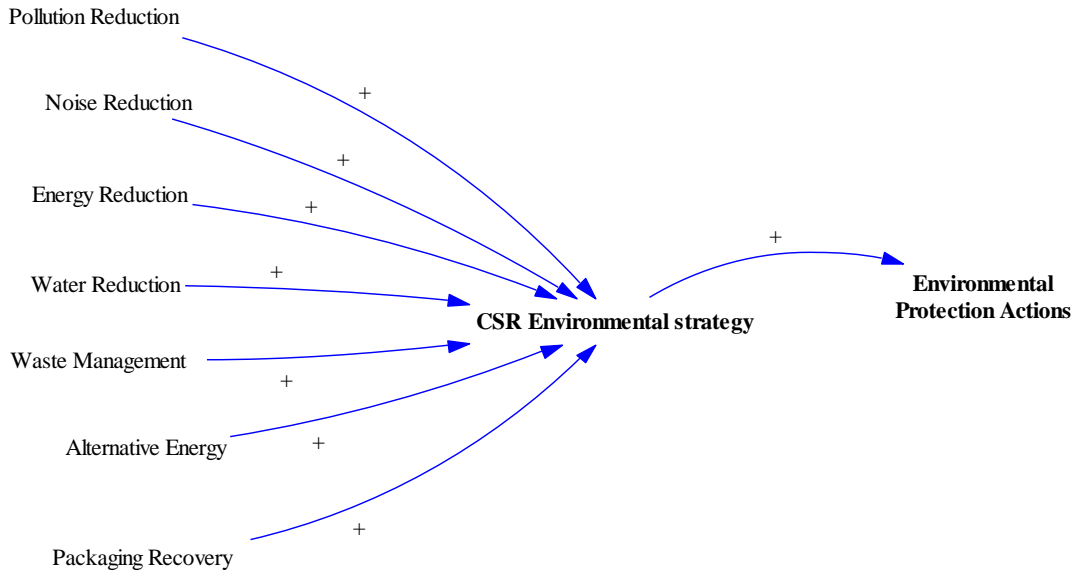


Figure 5 CSR environmental strategy and correlation to environmental protection actions

### 3. CSR employment strategy and correlation to employee subsidies and welfare

The level of corporate value is based on the extent to which it contributes to society. The main contribution to society by corporations is the provision of high-quality products and services to satisfy consumer needs; in order to provide high-quality products and services, it is necessary to have high-quality employees, so corporations must train and take care of its employees. In this way, the company would have successful management, and the profits would naturally be returned to the shareholders (Shih, 1996). The most preferred and actually adopted actions for taking care of employees are internal communications at companies, flexible work hours, subsidies, and welfare activities for employees, as shown in Figure 6.

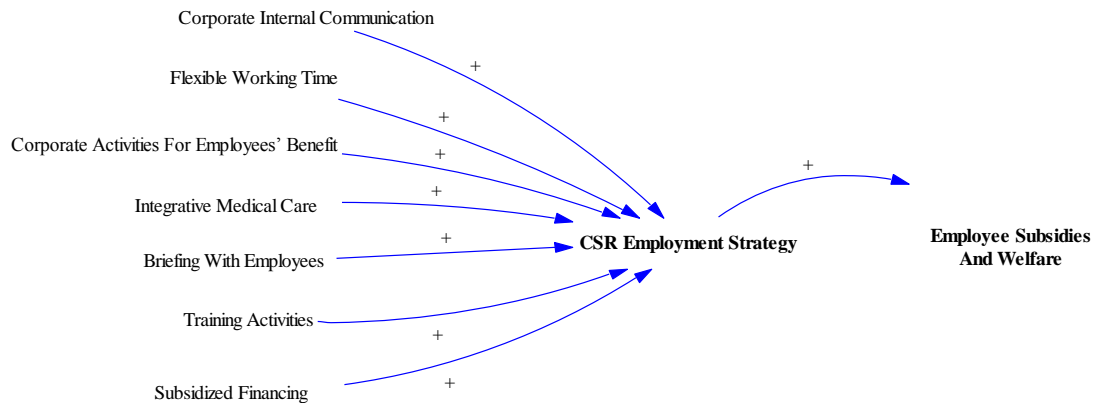


Figure 6 CSR employment strategy and correlation to employee subsidies and welfare

#### 4. CSR image strategy and correlation to sales

Aaker & Keller (1990) researched well-known brands in the market, discovering that if a company has good corporate image, it would enhance consumer identification and loyalty to the brand; if consumers are more familiar with products, they would have better confidence and attitudes, leading to higher intention to purchase products (Laroche and Saunders, 1996). In the environment of global competition, the telecommunications industry has intensified competition due to other businesses and new competitors, resulting in higher pressure in corporate management, which makes corporations work harder at establishing and elevating their corporate image. Thus, corporations adopting the CSR image strategies would help elevating their reputation and name recognition, enhance product attraction, and in turn elevating sales, as shown in Figure 7(left top reinforcing loop).

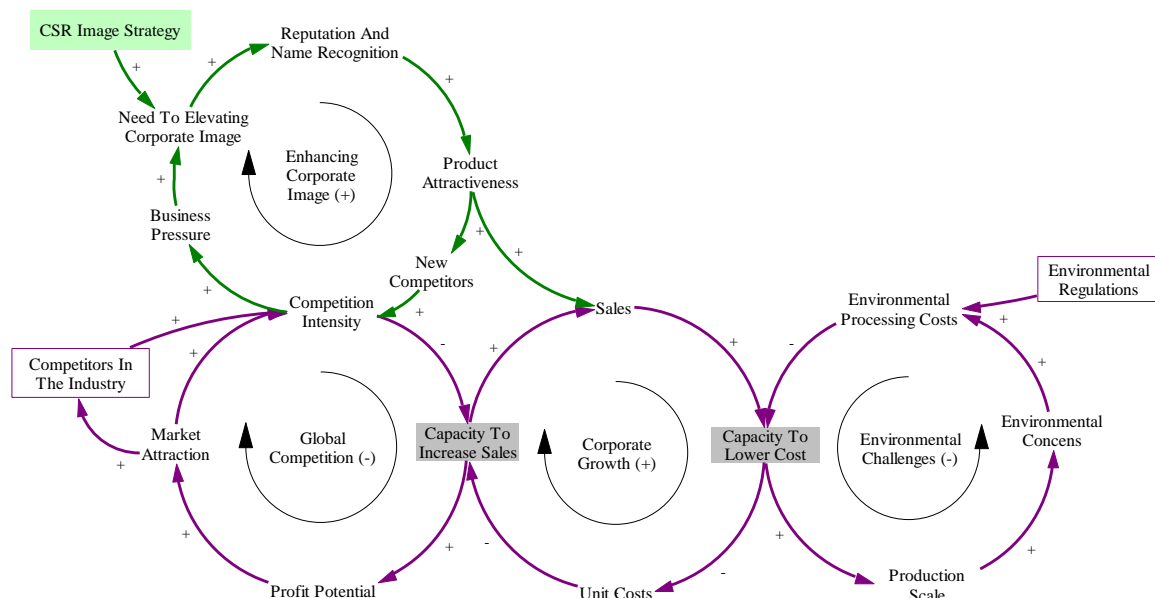


Figure 7 CSR image strategy and correlation to sales loop

#### 5. CSR environmental strategy and correlation to sales

When corporations engage in more actions relating to environmental protection, it can decrease the environmental processing costs. When environmental processing costs increase it would decrease income. Thus, corporations emphasize environmental processing costs and work on logistical efficiency, usage efficiency of energy and resources, green logistics can decrease the costs for materials and operations. Through green materials, green product design, and green marketing, new business opportunities can be created in the long run to enhance sales, as seen in Figure 8(right top reinforcing loop).

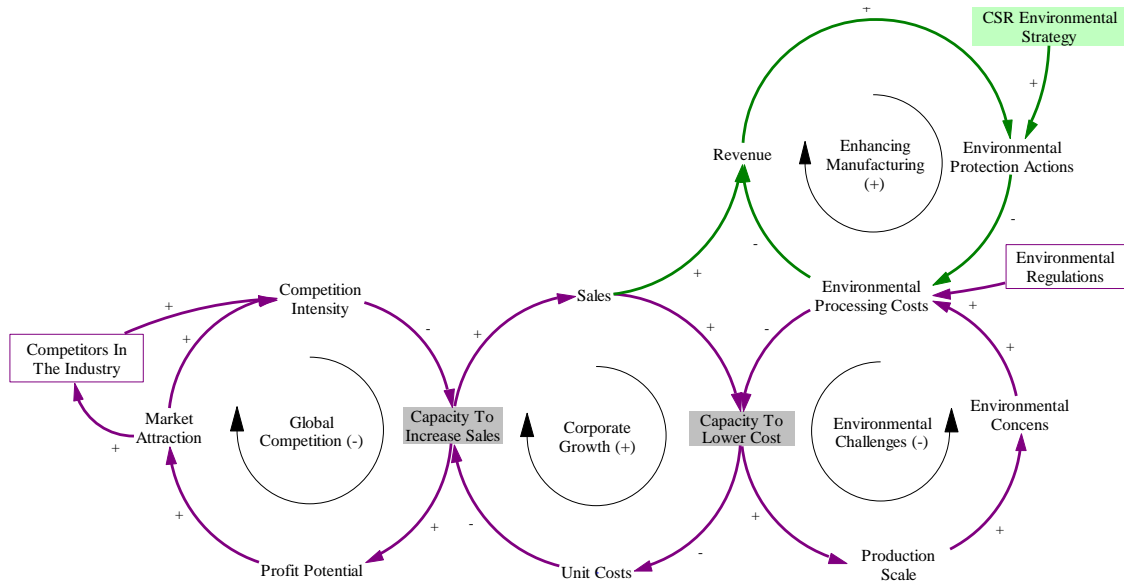


Figure 8 CSR environmental strategy and correlation to sales loop

6. CSR employment strategies and correlation to sales

The purpose of providing employee welfare is to improve the lives of laborers, enhance work efficiency, and this is one of the basic rights of laborers (Huang, 1998). Employee subsidies and welfare would affect work satisfaction, if work satisfaction is high, then there will be good work performance, and there would be higher quality of labor. Thus, corporations share profits with employees and elevating their stipends and welfare would enhance labor quality, in turn increase product attraction, and enhance sales, as shown in Figure 9 (middle top reinforcing loop).

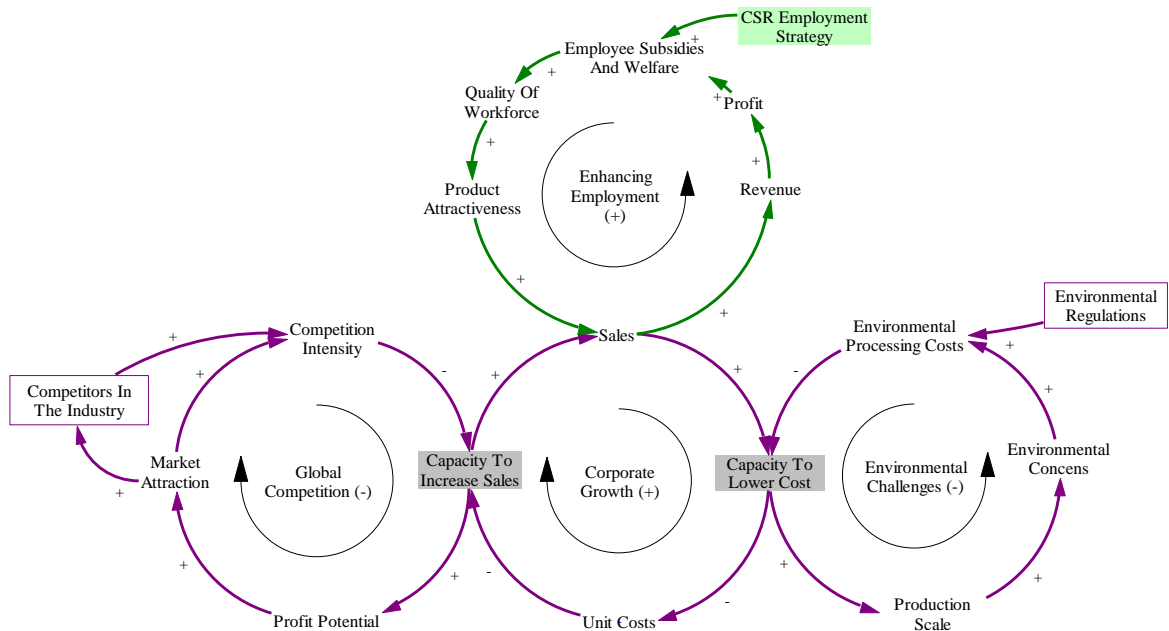


Figure 9 CSR employment strategies and correlation to sales loop

7. CSR and CSV strategies and causal feedback diagram with corporate growth

When corporations face industrial competition and regulatory restrictions, pressure on corporate management increases; research finds that when corporate owners adopt CSR strategies, it does help increase sales and decrease environmental processing costs. Porter and Kramer(2011) has also proposed a reconsideration of products and the market to redefine productivity in the value chain, creating support clusters where the company is located. These three types of strategies are a part of the positive CSV cycle; the improvement of value in one field can create opportunities for the other fields.

Below is a description of the essences of CSV strategies that Porter and Kramer(2011) suggests corporations take, and it also discusses how they correlate to corporate growth:

(1) Correlation between reconceiving products and markets and elevation of sales energy

Porter and Kramer(2011) proposes that corporations overlook needs that benefit customers, including innovative markets and products such as healthcare, better residences, eldercare, and environmental products. This market is still not satisfied, and still has major potential and opportunities. Thus, corporate emphasis on developing innovative products and markets that benefit society can enhance sales energy.

(2) Correlation between redefining productivity in the value chain and lowering unit costs energy

Porter and Kramer(2011) suggests that corporations should redefine value chain productivity and change the corporate value chain through changes in energy depletion and logistics, changes in resource usage, and changes in location (ex: operational sales activities close to the headquarters). He proposes that corporations should rethink products and markets to decrease corporate harms on the environment, and this can satisfy more customer needs and social benefits. Thus, in order to achieve sustainable management, corporations need to focus on improving the value chain productivity in the environment to lower corporate operational costs.

(3) Correlation between Enabling local cluster development and market attraction

Porter and Kramer(2011) suggests that corporations should promote local cluster development to bring higher productivity and innovative ability for corporations. He also proposes that corporations should establish clusters at their own primary sites of operations. The achievements can motivate community prosperity and create more work opportunities to benefit the local economy. Thus, if the cluster is more powerful, it will have greater market attraction.



Integrating the above corporate growth and three reinforcing loops of CSR corporate image aspects, care for employment, and manufacturing operations, adding CSV strategies to construct the following loop diagram, as shown in Figure 10.

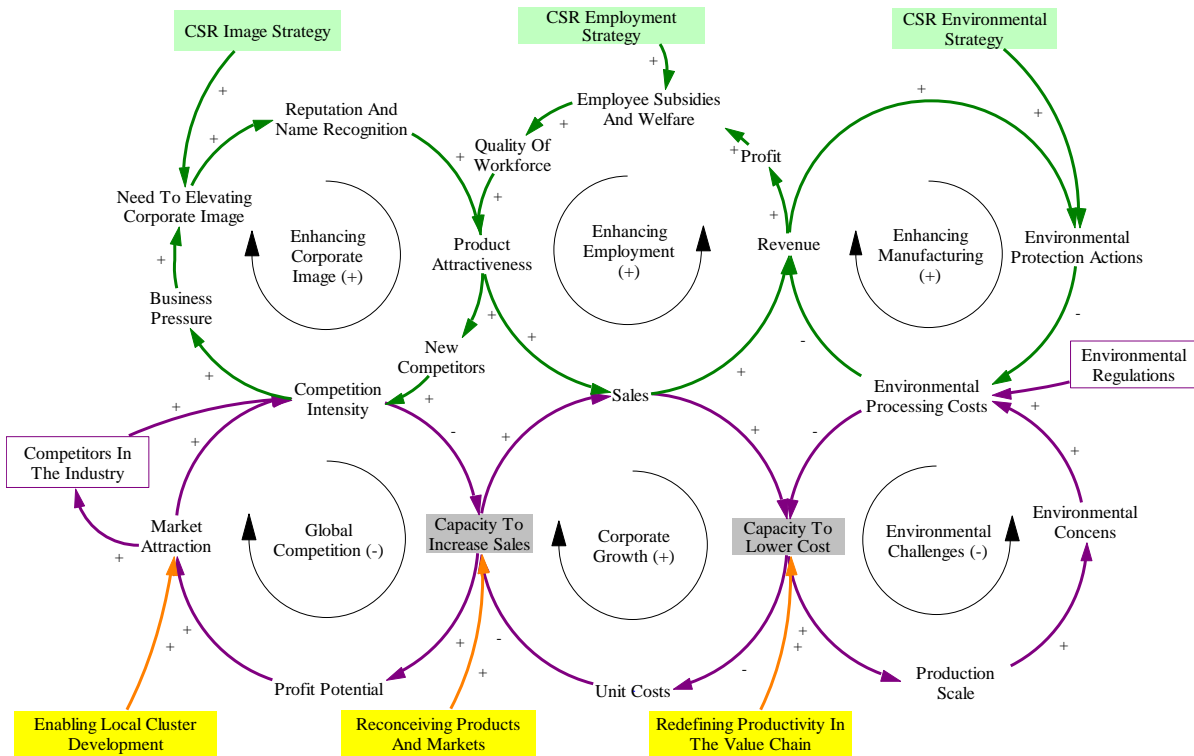


Figure 10 CSR and CSV strategies and causal feedback diagram with corporate growth loop

Some practical examples are used to show that in Taiwan, the CSV strategies and usage by the CSR paragon in the telecommunications industry, Chunghwa Telecom.

(a) Strategy for reconceiving products and the markets:

In terms of alternative energy, in 2009 Chunghwa Telecom constructed the first solar power generating system in Taiwan, using solar power to charge mobile phones, information billboards, and communications power, so that people can still talk during blackouts. ICT uses the plan to help visually-impaired to work remotely, to establish a Call Center constituted by the visually-impaired, creating more job opportunities for them in Taiwan. This successful experience was completely exported as an operational model to the Philippines and Beijing areas. C helped to establish the “ADOC 2.0 Visually Disabled Digital Opportunity Center.”

(b) Strategy for redefining productivity in the value chain :

The service platform Intelligent Energy Network (iEN) developed by Chunghwa Telecom combines telecommunications networks and information technology, researching and developing customized energy- and power-saving products that have energy diagnostics, control, management, and improvement projects, with comprehensive solutions. This enhances the energy efficiency of office buildings, and can be applied to green buildings to achieve the objectives of minimizing energy usage and environmental impact.

(c) Strategy for enabling local cluster development:

Chunghwa Telecom assists local cultural industries, constructing the "Click Taiwan," providing a platform for community industries to share information; deeply entering communities to establish "good digital neighbors," and shrinking the digital gap. In February 2008, it completed the plan of "broadband in every village," so that Taiwan became the first country with "broadband in every village."

### **Conclusion and Suggestions**

By using systems thinking methodology, this study demonstrates that corporations can use CSR strategies in image, employment, and environment to form three reinforcing loops, which can indeed result in continuous positive feedback influence on corporate sustainability. In addition, CSV strategies can directly strengthen sales and lower cost energy.

1. Corporate managers considering CSR and CSV strategies:

When there is rapid development of external competitors, corporations face competitive pressure resulting in lack of profit, decision-makers may emphasize lowering costs to achieve sales performance. However, corporations have limited resources, and when they are restricted by regulations, they need to fully use resource efficiency to lower the long-term costs for environmental processing, achieving the objectives of lowering costs and elevating sales. Corporations need to continue evaluating environmental and economic benefits relative to costs to adopt CSR and CSV strategies. This avoids resource waste in the production process and elevation of usage efficiency of resources. The design of green products can create new business opportunities to achieve corporate growth in itself, rather than growth through mergers that lack clear competitive advantages.

This study uses systems thinking to construct a blueprint for corporate growth based on CSR and CSV. If corporates incorporate CSR thinking in management strategies can create good corporate culture and an attitude that is accountable to stakeholders, elevating corporate image and name recognition. This study argues that corporate adoption of CSR and CSV strategies are opportunities for corporate managers, so that they can achieve stronger competitive advantages compared to competitors, as well as corporate and social shared values.

2. Suggestions for improving business practices:

The pursuit of corporate growth is an important objective of business management. When corporate managers face massive external competitive pressure, managers are worried that their operational objectives cannot be

smoothly completed, pressure may be converted into waves of restructuring, layoffs, and moving to low-cost areas, while elevating financial leverage to return capital to investors and create short-term performance. The result is usually that a product becomes mass-produced, with price competition, lack of innovation and competitive advantage for growth. Thus, this study uses systems thinking to evaluate the causal feedback relationship between CSR and CSV strategies and corporate growth. According to the research results, it is suggested that operational rules for sustainable corporate develop as the following:

(1) As much as possible, avoid the pursuit of short-term operational performance causing negative views toward corporations as only pursuing profit, affecting future development. The managers hope that the corporations will become sustainable, and the basic solution is to adopt CSR and CSV strategies, continuously emphasize the effects and achievements of the strategies, before developing into corporations with sustainable growth.

(2) The crisis of social issues and climate change has caused more business owners to adopt CSR strategies to become accountable to stakeholders. Results of this study show that corporate owners should be more concerned with CSR and CSV strategies to create opportunities for corporations, developing new business opportunities and elevating corporate competitiveness, creating corporate and social shared values.

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