創新與永續性商業管理

An innovative and sustainable business management

By

Dr. Shwn-Meei Lee, Hsiuping Institute of Technology, Taichung, Taiwan

Email:smlee@mail.hit.edu.tw

Dr. Hiroshi Chris Honda, Northwestern Polytechnic University, California, U.S.A.

Email:chrishonda@yahoo.com

Abstract

環境永續發展是企業的社會責任，越來越多地企業意識到自環境永續性和綠色行銷可以獲得許多競爭優勢和商業機會。綠色創新蔚為國內及全球環境風潮，有趣的是綠色創新更能夠有效地運用在推動環境永續性及經濟方面。綠色創新管理同時也可解釋為鑑定、執行與監控新的概念之過程來改進環境績效(環保成效)。綠色消費意識持續高漲，各國企業皆積極導入綠色營銷體系，建立一個永續的綠色商業之環境而努力。因此期望藉由本研究的執行，能夠達到以下之效益：(1)普及綠色消費習慣、營造綠色商業風潮 (2)建立綠色移轉模式 (3)擴散綠色商業的示範標竿，共創永續發展的商業環境，以藉由鼓勵綠色商業的觀念更加普及來帶動綠色經濟，為國人營造更有潛力更優質的商業環境。

關鍵詞：綠色商業、綠色經濟、永續性環境、環境管理系統、創新管理

Keywords: green business, green economics, sustainable environment, environmental management system, and innovation management.

1.0 Introduction

Green businesses aim to solve both environmental and social problems, instead of causing them. In addition, they adopt principles, policies, and practices that improve the quality of life for their customers, employees, communities and the environment (Green Business, *BusinessWeek*, 2009).

Green business or sustainable business, is enterprise that has no negative impact on the global or local environment, community, society, or economy, which is a business that strives to meet the triple bottom line. The triple bottom line (also known as people, planet, profit, or “the three pillar”) has captured a full spectrum of values and criteria for measuring organizational success: economic, ecological and social.

Often, sustainable business have progressive environmental and human rights policies. In general, a business is described as green if it matches the following four criteria: (a) It incorporates principles of sustainability into each of its business decisions.

(b) It supplies environmentally friendly products or services that replaces demand for nongreen products and/or services. (c) It is greener than traditional competition. (d) It has made an enduring commitment to environmental principles in its business operations (Cooney, 2008).

In the past it was commonly believed that the environment could absorb whatever we threw away through simple

dilution, laws were created based on cradle-to-grave lifecycle framework. This lifecycle framework is a one-way manufacturing flow where a product is produced, used, and then disposed of. This cradle-to-grave framework focuses on preventing toxic harm by regulating the disposal of hazardous materials. We face many uncertainties about the safety of chemicals that are in products we use and throw them away every day. We often have little or no information about chemical ingredients and their potential hazards. We will spend billions of dollars for the long-term stewardship of the hazardous waste stream that continues to accumulate in our bodies and in our homes. Green business can help create a sustainable future and help us turn back the tide of hazardous substances by taking a cradle-to-cradle approach. This approach requires the examination of products throughout their entire lifecycle in order to create a sustainable industrial model where no waste or pollutants are produced at any stage of manufacturing, shipping, use, and disposal. Through the advancement and adoption of green business, today's toxic substances will be replaced by substances that are benign by design.

A major initiative of green business is to eliminate or decrease the impact made on the environment by harmful chemicals, materials, and waste generated by processes to manufacture products and services (Becker, 2008). The impact of such human activities in terms of the amount of greenhouse gases produced can be measured in units of carbon dioxide and is referred to as the carbon footprint. The carbon footprint concept branched off from ecological footprint analysis, which examines the ecological capacity required to support the consumption of products (Hawken & Lovins, 2008). One of the most common examples of sustainable business initiatives is the act of going paperless (Rennie, 2008). On a higher level, sustainable business practices can include reviewing processes in order to eliminate or recycle waste, making all products recyclable, and eliminating the use of nonrenewable resources via alternatives energies.

2.0 Related Literature

Traditionally, industries consumed raw materials and produced not only goods but also a large amount of waste that was simply discarded. Increasingly, however, manufacturers are finding that the waste products from one manufacturing process can be used as raw materials in another industry. By selling these wastes, industries gain additional profits and lessen the amounts of materials that must be disposed. Minimization of waste by industry is known as sustainable manufacturing. Sustainable manufacturing requires that companies provide information about their waste products to other industries so that any potential waste recovery can be implemented. However, many companies are reluctant to reveal the kinds of wastes they produce because their competitors may be able to deduce valuable trade secrets from the nature of their wastes. This difficulty will have to be overcome if sustainable manufacturing is to be fully implemented (Raven & Berg, 2009).

The period before 1980s can be viewed as the resistance-to-change management era. At this stage, most companies only dealt with environmental regulations by (1) hiring outside environmental consultants, who usually favored end-of-pipe pollution control solutions, (2) using lawyers to oppose or find legal loopholes in the regulations, (3) lobbying elected officials to have environmental laws and regulations overthrown or weakened.

By 1985, most company managers accepted environmental regulations and continued to reply mostly on pollution

control. However, they packed little attain emphasis on trying to find innovative solutions to pollution and resource waste problems because they believed them to be too costly.

In the 1990s, a growing number of company managers began to realize that environmental improvement is an economic and competitive opportunity instead of a cost to be resisted. This was the beginning of the innovation management era that environmental and business visionaries project will go through many phases over the next few years, which include implementing:

(a) Total quality management, with an emphasis on preventing pollution and more recently on greatly improving resources productivity.

(b) Life cycle management based on assuming environmental stewardship of a product throughout its entire life cycle. After products are sold or leased to customers, companies are responsible for maintaining them and taking them back for repair, upgrading, recycling, or remanufacturing.

(c) A switch from selling products to selling services.

(d) Process design management to achieve cleaner production by totally redesigning existing manufacturing processes or developing new ones with the goals of (1) eliminating or sharply reducing pollution and resource waste and (2) decreasing production, waste management, product liability, and pollution compliance costs.

(e) Total life quality management in which many companies become involved in eco-industrial networks where they exchange resources and wastes in industrial webs not unlike the food webs found in nature (Miller, 2004).

From their Cradle to Cradle product concept (McDonough, 2002), McDonough and Braungart have argued that the conflict between industry and the environment is not an indictment of commerce but an outgrowth of purely opportunistic design. The design of products and manufacturing systems growing out of the Industrial Revolution have reflected the spirit of the day-and yielded a host of unintended yet tragic consequences. Today, with our growing knowledge of the living earth, design can reflect a new spirit. In fact, when designers employ the intelligence of natural systems-the effectiveness of nutrient cycling, the abundance of the sun's energy-they can create products, industrial systems, buildings, even regional plans that allow nature and commerce to fruitfully co-exist.

2.1 Green Business

The green guide for new businesses provided some important information on implementing an environmental strategy for your business, including steps to becoming energy efficient, compliant with environmental regulations, and a recognized "green business."

Step1: Comply with Environmental Regulations

Step2: Develop an Environmental Management Plan

Step3: Building Green

Step4: Buy Green Products

Step5: Adopt Energy Efficient Practices

Step6: Reduce, Reuse, Recycle Waste

Step7: Conserve Water

Step8: Prevent Pollution

Step9: Create a Green Marketing Strategy

Step10: Join Industry Partnership and Stewardship Programs

2.2 Green Economics

The green economics is the economics of the real world. It is the world of work, human needs, the Earth's materials, and how they mesh together most harmoniously. It is primarily about "use value," "not "exchange value" or money. The green economics is about quality, not quantity, for the sake of it. It is about regeneration of individuals, communities, and ecosystems. It is not about accumulation of either money or material.

Green economics is not just about the environment. Certainly we must move to harmonize with natural systems, to make our economies flow benignly like sailboats in the wind of ecosystem processes. Human beings and human workers can no longer serve as cogs in the machine of accumulation, be it capitalistic or socialistic. Ecological development requires an unleashing of human development and an extension of democracy. Social and ecological transformation go hand in hand (Milani, 2000).

This is a very different kind of "self-regulation" than current profit-and power-driven market forces. The basis for self-regulation in a green economy would be community and intelligent design, which provides incentives for the right things.

Ten Principles of a Green Economy:

1. The Primacy of Use, Intrinsic Value, and Quality: This is the fundamental principle of the green economy as a service economy, focused on end-use, or human and environmental needs.
2. Following Natural Flows: The economy moves like a proverbial sailboat in a wind of natural processes by flowing not only with solar, renewable, but also with natural hydrological cycles, with regional vegetation and food webs, and with local materials.
3. Waste Equals Food: In nature there is no waste, as every process output is an input for some other process.
4. Elegance and Multifunctionality: Complex food webs are implied by the previous principle-integrated relationships which are antithetical to industrial society's segmentation and fragmentation.
5. Appropriate Scale/Linked Scale: This does not simply mean small is beautiful, but that every regenerative activity has its most appropriate scale of operation.
6. Diversity: In a world of constant flux, health and stability seem to depend on diversity.
7. Self-Reliance, Self-Organization, Self-Design: Complex systems necessarily rely on "nested hierarchies" of intelligence, which coordinate among themselves in a kind of resonant dance.
8. Participation and Direct Democracy: To enable flexibility and resilience, ecological economic design can provide the means for deeper levels of participation in the decisions that count in society.

9. Human Creativity and Human Development: Displacing resources form production and turning into the spontaneous productivity of nature requires tremendous creativity.
10. The Strategic Role of the Built Environment, the Landscape, and Spatial Design: Green economic conversion must be radical, but it must also be tremendous on the entire economy (Milani, 2000).

3. Purpose

Most of today's advanced industrialized countries have high-throughput economies that attempt to sustain ever-increasing economic growth by increasing the flow of matter and energy resources through their economies of such societies to planetary sinks (air, water, soil, organisms), where pollutants and wastes end up and can accumulate to harmful levels. What happens if more and more people continue to use and waste more and more energy and matter resources at an increasing rate? The law of conservation of matter and the two laws of thermodynamics tells us that eventually this will exceed the capacity of the environment to dilute and degrade waste matter and absorb waste heat. However, they do not tells us how close we are to reaching such limit. A stopgap solution to this is to convert a high-throughput economy to a matter-recycling economy. The goal of such a conversion is to allow economic growth to continue without depleting matter resources or producing excessive pollution and environmental degradation. Even though recycling matter saves energy, the two laws of thermodynamics tells us that recycling matter resources always requires using high-quality energy and adds waste heat to the environment (Miller, 2009).

The purposes of this research are: (a) provide an understanding of the mounting demand for business management practices to create not just financial value but to effectively respond as well to the environmental sustainability and social responsibility demands of society. (b) provide a knowledge of the current best practices of businesses in responding to this demand to create "sustainable value" and an understanding of the basic principles behind them. (c) develop an appreciation, and hopefully a sense of commitment to practice "greener" business management practices in their future professional careers.

4. Structure

(a) Innovation-directed Management

Phase 1	**Phase 2**	**Phase 3**	**Phase 4**
Total quality management	Life cycle management	Process design management	Total life quality management
Pollution prevention and increased resource productivity	Product stewardship	Clean technology	Ecoindustrial webs, environmentally sustainable economies and societies

Figure 1. Environmental management
(Miller, 2003)

(b) Lifecycle thinking

The following lifecycle model is an example that must take place, a renewable and reusable approach must be adapted to attain long-term sustainability and growth for us.

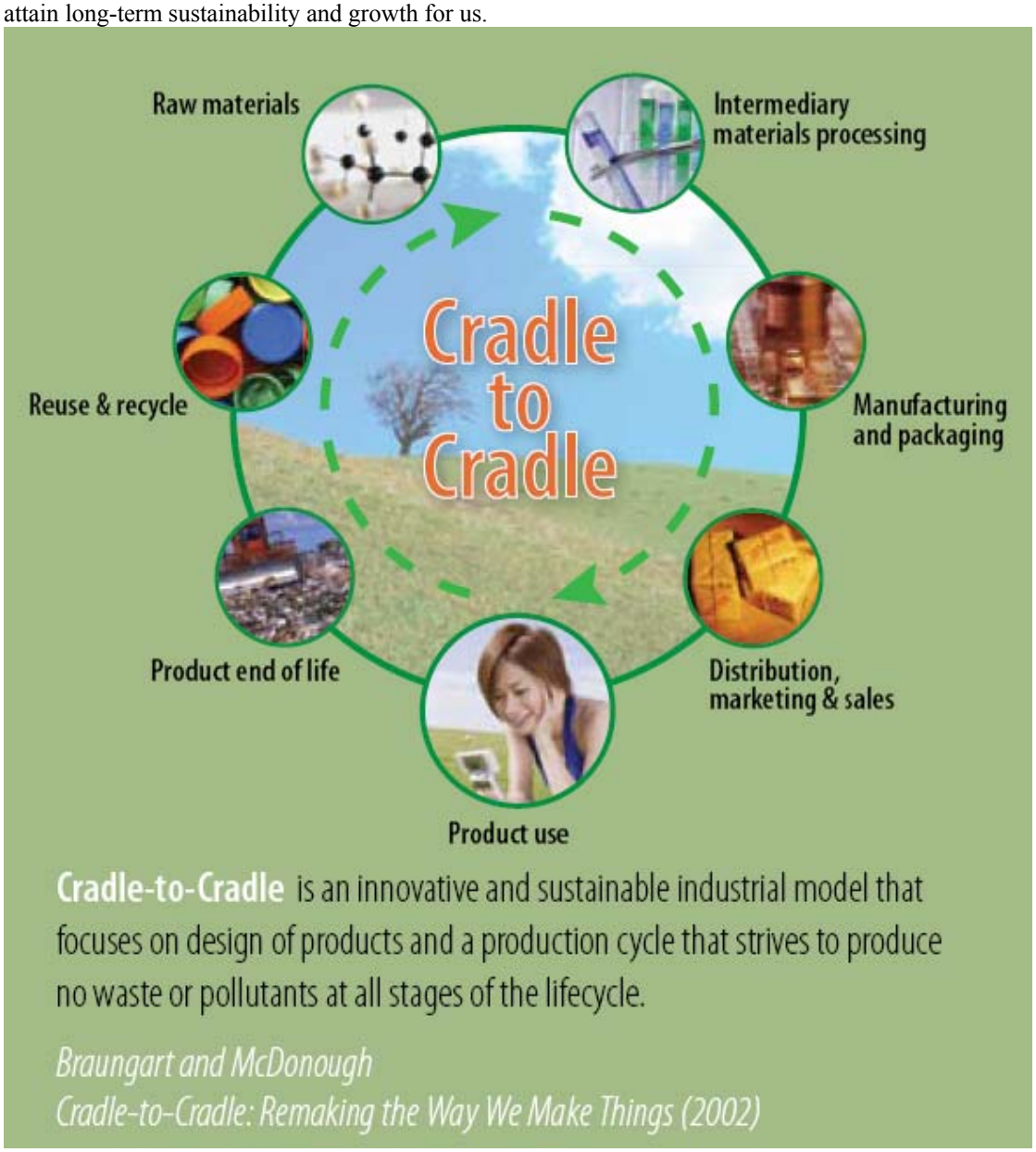

Figure 2. An innovative and sustainable industrial model

(McDonough, 2002)

5. Importance of this research

There is serious growth opportunity in this sector, and companies are looking for varied skill sets to meet their needs around sustainability. There's no set roadmap for companies to follow in an effort to design and implement a successful sustainability strategy. In fact, many of us working in this space are hungry for clear, concise information on how to tackle the sustainability challenge in cost- and time-effective way.

It is a must and important that making a business for "green". Especially in this economy, the bottom line matters-a lot.

Corporate sustainability projects must be able to show cost savings and a rapid ROI (return on investment) in order to be approved and widely supported within Fortune 1000 companies.

It is the priority for energy use, and how to curb it through efficiencies. Of all the sustainability issues out there, the top corporate priority is how best to reduce energy use, cut costs and minimize carbon footprints.

6. Conclusion

The environmental sustainability is not simply a matter of compliance or only risk management. Business is increasingly recognizing the many competitive advantages and business opportunities to be gained from eco-sustainability and green marketing. Many evidences indicate people are more concerned about the environment and are changing their behavior accordingly. As a result there is a growing market for sustainable and socially responsible products and services. The types of businesses that exist, the products they produce and their approaches to marketing are changing. People generally want to do the right thing, so the challenge and opportunity for the green marketer is to make it easy for people to do so.

Green business has been recognized as an environmental leader. It operates efficiently, strengthening the bottom line. It improves employee morale, health and productivity. It holds a marketing edge over the competition. As consumers become more environmentally conscious and energy costs continue to rise, businesses are rapidly adopting environmentally friendly business practices. Many business owners fear it's too costly to adopt eco-friendly practices, however, small investments can reap large gains. Green practices can save money while creating happier customers and a healthier planet.

Based on green case studies shown that companies known for proactive environmental policies can garner favor from customers, employees, regulators, the media, and others. Because of their reputation, they are able to reap benefits such as reduced pressure from activist groups and the media, increased ability to attract and retain high quality employees, improved community relations, enhanced brand image, stronger customer loyalty, and increased appeal to socially responsible investors and portfolio managers.

Adopting environmentally-friendly and energy efficient business practices provides numerous benefits to new business owners looking to control cost, attract customers, and become socially responsible. Renewable energy will fundamentally transform the economics of supply and demand of energy and create a new cycle of growth in areas as diverse as farming, transportation, and construction.

The green innovation can happen either to respond to local or global environmental concerns or to construct an environmental leadership in the sector. Interestingly, green innovation can have ecological or economical motivation, and as other types of innovation, it can be incremental or radical. Green innovation management could be defined as the process to identify, implement and monitor new ideas to improve environmental performance.

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