

**Green is Golden**  
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When I made my first visit to China in 2001, the benefits of socially responsible business (SRB) practices were not widely known or understood. Today most people know that SRB is concerned with the impact business decisions have on all stakeholders – employees, customers, investors, suppliers, the community and the environment. A socially responsible business considers the needs and desires of all its constituencies. This is contrary to former practices that looked solely at how business decisions affect the company's owners. Yet evidence has shown SRB practices are extremely beneficial for business owners. A business that deals fairly with all stakeholders has more motivated employees, more loyal customers, more cooperative suppliers, more abundant natural resources and a more supportive community. Improving relationships with stakeholders is certain to make a business more prosperous.

Of all the relationships mentioned above, the one that I have had the most difficulty explaining is the one between business and the environment. In almost every one of my three-dozen lectures in China the audience has quickly reminded me that China is a developing country with millions of citizens living in poverty. There has been almost unanimous agreement that protecting the environment is too complicated and costly for a country at China's stage of economic development. My rebuttal has been as follows: 1) some environmental expenditures cut costs and therefore provide a fast, rewarding payback 2) expenditures that lack a quick return are no different than investments in R & D or IT – the payback eventually occurs either in the form of long-term efficiencies, more plentiful natural resources and/or a cleaner, healthier environment 3) economic growth will be of little value if the country's air is not breathable, the water not drinkable and the land not fertile. Reducing pollution lowers illness-related absenteeism, improves productivity and enhances a company's reputation. Nonetheless, specific examples of how companies have benefited from responsible environmental practices were not as plentiful as I would have liked.

In six short years the situation has changed dramatically. Unfortunately, the environment both in China and around the world has continued to deteriorate. Air and water pollution have reached alarming levels and the health of large segments of the world's population is at serious risk. The potentially dire consequences of global warming are now accepted by all but a few holdouts – the U.S. administration being a regrettable example. Fortunately, many companies recognize the importance of a healthy ecosystem and have come to view environmental problems as a major business opportunity. Businesses are starting to understand that environmental practices can yield strategic advantages in an interconnected world with ever stricter rules and regulations. Jeffrey Immelt, the CEO of General Electric, told the audience at the World Resources Institute, "The opportunity to provide environmental solutions is going to be one of the big four or five themes of our

generation of business leadership.”<sup>1</sup> In addition, environmental activists are moving toward more pragmatic approaches to solving ecological challenges by embracing market-based solutions. Both groups understand the startling truth expressed by Sierra Club executive director David Brower, when he said, “There is no business to be done on a dead planet.”<sup>2</sup>

Before discussing the scientific principles that we must follow to ensure a sustainable environment, let me give you a quick description of how we got to the perilous position in which we now find ourselves.

Nature has been evolving for billions of years; humans began their adventure on the planet relatively recently. In the short time humans have walked the earth they have set up extensive transportation, communication and commercial networks to house, feed, cloth and provide information for enjoyable, constructive lives. This human network was designed in a piecemeal fashion without regard to nature’s needs or how our desires affect the whole. The oceans seemed so vast, the earth’s resources so plentiful and the atmosphere so limitless that humans assumed they could extract resources from and dump their waste into the biosphere indefinitely without adverse consequences. We therefore proceeded to fragment, deplete, pollute and erode nature’s long established systems. Many of our once plentiful resources are now in dangerously short supply and numerous species face extinction. In short, nature’s environmental network has become overwhelmed and our ecosystem is losing its ability to adapt and sustain itself. There is sound justification for believing the protection of the planet’s resources is the greatest moral issue of our times. Equally significant for business, environmental restoration may be the greatest commercial opportunity of the 21<sup>st</sup> century.

### **Saving Planet Earth**

The distressing evidence of nature’s deteriorating vitality is what drove Karl-Henrik Robert of Sweden, in 1989, to search for a comprehensive, scientifically based solution to environmental problems. He and a group of respected scientists sought to overcome the deficient piecemeal approach which had existed and develop all-encompassing, technically sound principles upon which to base environmental policies. Robert called the process his group created the Natural Step. Its concepts have been adopted and implemented by many of the largest transnational corporations in the world. The Natural Step espouses four principles that need to be followed to achieve a healthy, sustainable ecosystem. The heart of what I want to discuss today is not just what the Natural Step principles require but how companies are beginning to garner significant profits from the implementation of these principles. In other words, I want to convince you that a prompt and enthusiastic effort to solve our environmental problems is very much in your self-interest.

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<sup>1</sup> Marc Gunther, “Green is Good,” *Fortune*, 2 April 2007, 44.

<sup>2</sup> Susan Casey, “Éminence Green,” *Fortune*, 2 April 2007, 64.

**Conditions for Sustainability** – (meeting present needs without compromising future generations’ ability to meet theirs.)

**The first system condition puts limits on the amount of substances removed from the biosphere. (Take)**

When our natural resources seemed to be limitless we thought we could exploit nature indiscriminately. We have depleted our precious resources – from fossil fuels to fisheries to forests – faster than they could be replenished. We deluded ourselves into thinking nature was out there somewhere and separate from us; as such it had little to do with human welfare. Today the conflict between humanity’s desire for the “good life” (more and bigger homes, cars, furniture, shopping malls etc.) and nature’s ability to support our lavish life style is painfully obvious. With less undeveloped space for natural processes to unfold, the environment is losing its buoyancy. Species are dying, the earth’s climate is changing, the air is polluted, fresh supplies of water are dwindling and environmentally linked health problems – everything from skin cancer to asthma – are on the rise.

The (U.S) National Academy of Sciences has estimated that human consumption passed the earth’s regenerative capacity around 1980. Reports of dwindling oil reserves are now well known but there has been less publicity about other commodities in short supply. According to the International Institute for Environment and Development, at today’s level of production, there may only be 28 years of copper, 21 years of lead, 17 years of silver and 37 years of tin beneath the earth’s crust.<sup>3</sup> Even with more efficient extracting and recycling and greater use of substitute materials, many commodities are likely to experience price and supply pressures in the coming decades. This problem is compounded by the fact that the world’s population is still rising and in countries such as India and China there is a rapidly growing middle class. As these newly invigorated consumers purchase and furnish larger homes and buy their first automobiles, resources will be consumed at ever-higher rates.

As Chinese philosophers explained many centuries ago, every crisis presents great opportunities. There will be immense rewards for solving today’s problems. While government authorities will need to enforce conservation measures, entrepreneurs and other businesses people will have a significant chance to devise more efficient models of distribution, to reduce their use of natural resources and to invent new technologies to alleviate the coming resource and commodity crunch.

For example, according to the Environmental Defense organization, global fisheries, including salmon, cod and tuna, could basically disappear by the middle of this century if current overfishing trends continue.<sup>4</sup> Fishermen around the world are draining the stock of fish faster than they can be replenished and industrial fishing practices, such as bottom trawling, are destroying the ocean ecosystem. Wal-Mart, long condemned for its poor ecology record, has taken steps to counteract current conditions. The world’s largest

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<sup>3</sup> Andrew Zoll, “The Oblivious Capitalist’s Days Are Numbered,” *Fast Company*, March 2007, 64.

<sup>4</sup> “Triumph of an Idea: A New Model for Fisheries,” *Environmental Defense Solutions*, January-February 2007, 8.

retailer has committed to sell only fish certified as caught in sustainable fisheries. This has attracted the attention of the entire supply chain and has done more to protect the stock of fish than anything that government rules and regulations could ever accomplish.<sup>5</sup>

In addition, Wal-Mart has begun an aggressive campaign to slash its in-store energy usage and the fuel consumption of its trucking fleet. It is purchasing more electricity from renewable sources. Switching stores to more efficient bulbs and adding skylights for natural light has reduced Wal-Mart's electricity bill by 17% since 2002. Using less packaging on house-brand toys will save \$2.4 million annually in shipping costs. Selling 100 million compact fluorescent bulbs a year will save customers \$3 billion, a good part of which is expected to return to Wal-Mart in the form of additional customer purchases.<sup>6</sup> Between energy savings and an enhanced reputation on Wall Street and Main Street, Wal-Mart is starting to reap the benefits of being an environmentally friendly enterprise.

Dupont has also embraced sustainability as a strategic goal. According to the VP of fluoroproducts, Cynthia Green, "My team knows that when they walk into my office with an idea about a new product, it better have a reduced environmental footprint, or they can walk right out."<sup>7</sup> The company saved \$3 billion in energy costs between 1990 and 2005 by using 6% less energy even as it increased production by 40%. Its research efforts are now aimed at creating more environmentally friendly products and the company believes a number of these products have significant commercial potential. Bio-PDO, a corn-based bio product that can be turned into a fiber for suits, carpet or even made into deicing solutions for airplanes has a wide range of applications. Tyvek, a chemically-based eco-friendly material, can be used to improve energy efficiency. In fact, a home that makes maximum use of Tyvek can save 15% on its energy costs.<sup>8</sup>

**The second system condition for a sustainable environment requires strict limits be placed on persistent man made substances. (Make)**

Since WWII over 85,000 chemicals – from PCBs to CFCs to DDT – have been developed with little, if any, consideration of what happens when these substances are spent and need to be thrown away. How will they be reabsorbed into the ecosystem? Many man-made substances spread relentlessly and end up polluting the land, water and atmosphere, eventually accumulating in the fat cells of animals and humans. While cause and effect can be difficult to establish, sickness and disease are often the direct result of these uncontrolled hazardous substances. The proliferation of harmful material must be stopped and replaced by the production of nature-neutral substances. Two companies that have taken steps in this direction are briefly discussed below.

Floorworks, a Toronto based hardwood-flooring manufacturer, developed hardwood flooring that eliminates the need for polyurethane so no plastic particles are ever

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<sup>5</sup> Pete Engardio, Kerry Capell, John Carey, and Kenji Hall, "Beyond the Green Corporation," *BusinessWeek*, 29 January 2007, 57.

<sup>6</sup> Ibid.

<sup>7</sup> Nicholas Varchaver, "Chemical Reaction," *Fortune*, 2 April 2007, 58.

<sup>8</sup> Ibid., 54.

dispersed into the air. Their product has been lauded by environmentalists and individuals concerned about climate change quickly become new customers.<sup>9</sup>

Dupont has cut the release of carcinogens by 92% since 1990 and all hazardous waste discharges have fallen by over a billion pounds. A specific example of how they have made progress is shown by their success in reducing the release of greenhouse gases. By changing the way they make HCFC-22, the air conditioning refrigerant that succeeded Freon, they have enhanced the company's sales prospects without harming the ecosystem.<sup>10</sup>

Both of these environmentally friendly reformulations produced a win-win situation in which the environment is healthier and the bottom line is strengthened.

**The third system condition is concerned with the amount and type of trash that is returned to the ecosystem. (Throw)**

Our ecosystem provides food and other essential services for all living things; at the same it purifies the air, land and water. . Environmental researchers Paul Hawkins and Amory Lovins estimate the total “services” provided to the global economy by nature is as much as \$36 trillion per year.<sup>11</sup> The continued provision of these essential services is threatened by our over consumption of products that eventually have to be thrown away. In other words, the amount of waste we dump in the ocean, air or land has reached unsustainable levels. In many cases the planet's reprocessing capacity has reached or surpassed its biological limit. We can no longer degrade the ecosystem faster than it can be regenerated. Commercial products that can't be reabsorbed naturally should be recycled, reused, renewed or redesigned. We must learn to produce, consume and recycle without throwing anything away.

Fortunately, waste reduction is becoming more technologically feasible and increasingly profitable. It is time to require companies to pay the cost to dispose of their products at the end of their useful life. This would make consumers and producers more aware of the full life cycle cost of a product and result in more informed decisions. It would also motivate companies to redesign products to minimize their end-of-life disposal costs.

In addition, if people were charged for the amount of trash they accumulate and/or were paid for the amount of trash they recycle, the goal of zero waste would be considerably closer. In 1989 the recycling rate in the U.S. rate was only 16%. San Francisco, which is the biggest proponent for recycling in the U.S., currently pays its residents for their trash and recycles 68% of its waste.

In fact, zero waste is becoming the goal of a growing number of cities, states and businesses around the world. David Redfield, the person in charge of Wal-Mart's zero

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<sup>9</sup> Joyce M. Rosenberg, “Businesses Find Practical Side to ‘Going Green’,” *The Philadelphia Inquirer*, 23 April 2007, D5.

<sup>10</sup> Varchaver, 57.

<sup>11</sup> Zolli, 64.

waste effort, says, “When you look at a dumpster, you see trash. When I look at it I see materials and money.”<sup>12</sup> Wal-Mart recently brought 3,000 suppliers to meet with vendors from 150 packaging companies so the company could reduce the packaging in its stores. The company is keeping a vendor scorecard based on nine factors including CO2 emissions, the product to package ratio and the use of recycled content. Wal-Mart wants to reduce packaging by 5% that will save the company and its suppliers about \$11 billion. Until recently Wal-Mart paid a trash company to haul away the hangers it uses in its 3900 U.S. stores. Now it sells them for about 15 to 20 cents a pound to a recycling company. Mountain Valley Recycling turns the hangers into pellets of resin, which can be molded into virtually anything made with commodity plastics.<sup>13</sup>

**The final system condition for a sustainable environment requires that all people have their basic human needs met. (Sow)**

What does poverty have to do with the environment? There are some 2 billion people living on less than \$2/day. Unable to meet their basic needs for food, clothing and shelter, these impoverished people have little interest in making sacrifices for the sake of the environment. They will catch all the fish they can, hunt endangered species without guilt, and use the cheapest heating and cooking fuel that is available. As would be expected, their only priority is to live another day.

Policy makers must balance the need for economic growth and resource sustainability when making strategic decisions. Reducing poverty has understandably been a prime motivation for China’s leaders. Nonetheless, their great economic success has come at a steep price – dangerously polluted air, water and land. Since everything is connected, focusing on one problem without considering its effects on other issues can have significant consequences.

The examples that follow illustrate different ways of helping the poor and the benefits of doing so.

In 2006, the Nobel Peace Prize was awarded to Muhammad Yunus, a pioneer in microlending. These are loans made to poor entrepreneurs who need funding to start their petite businesses. Over the last 30 years, microlending has helped millions of people move out of abject poverty. As these fledgling entrepreneurs are able to meet their needs, they become potential customers for higher priced products that more traditional companies sell.<sup>14</sup>

Glaxo Smith Kline discovered that developing drugs for poor nations gained it greater cooperation from host governments. This includes the willingness to ensure that Glaxo’s patents are protected. Since patent protection is the lifeblood of drug companies, the importance of a foreign government’s support in this area can’t be overestimated.<sup>15</sup>

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<sup>12</sup> Marc Gunther, “The End of Garbage,” *Fortune*, 19 March 2007, 166.

<sup>13</sup> Ibid.

<sup>14</sup> Zolli, 64.

<sup>15</sup> Engardio, 60.

Dow Chemical has developed a portfolio of cutting edge solutions for filtering minute contaminants from water. The U.N. estimates 1.2 billion people lack access to clean water. To reach the poor, Dow is working with foundations and the United Nations to raise funds to pay for its water purification system.<sup>16</sup>

Philips Electronics has developed a smokeless wood-burning stove that could substantially reduce the number of pulmonary disease deaths caused by smoke from cooking fires (currently 1.6 million annually). Philips Chief Procurement Officer, Barbara Kux says, “For us, sustainability is a business imperative.”<sup>17</sup>

## Conclusion

China faces major challenges and opportunities with regard to the four system conditions for sustainability. Meeting the first sustainability principle – reducing the amount of resources taken from the earth – may arguably be the most difficult for China. By some estimates, China will add a quarter of a billion people to its middle class by 2020, thus increasing the demand for manufactured products.<sup>18</sup> China already burns almost one-third of all the coal mined in the world and as a result has suffered huge pollution and related health care problems. China’s ability to introduce new technology to clean up its coal plants is hindered because Western companies are reluctant to export advanced technology because of the weak enforcement of intellectual property rights.

With per capita income expected to increase dramatically, the number of cars in China is conservatively projected to rise from about 30 million to over 130 million by 2015. Between its growing use of coal for heating and gasoline for driving, China is fast becoming the largest source of CO<sub>2</sub> emissions.<sup>19</sup> At the current rate, China’s greenhouse-gas emissions are forecast to double that of all members of the Organization for Economic Cooperation and Development (Europe, Canada, South Korea, Japan and the United States) in the next 25 years. As Fatih Birol, the International Energy Agency’s chief economist observed, “Without having China on board, without having them play a significant role, all these efforts, none of it, will make any sense.”<sup>20</sup> To their credit the Chinese government has pledged to spend \$200 billion on renewable energy and to have that account for 15% of the country’s total supply by 2020.<sup>21</sup>

It is clearly in China’s interest to make a maximum effort to mitigate global warming. According to a Chinese government report issued in late 2006, crop output could fall 5% to 10% by 2030 if temperatures continue rising. In addition, rising sea levels could increase floods along the Yellow, Yangtze and Pearl River deltas, the regions that support

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<sup>16</sup> Ibid., 64.

<sup>17</sup> Ibid.

<sup>18</sup> Zolli, 64.

<sup>19</sup> Kiril Sokoloff, “What’s Next in Energy?” *Fortune*, 26 January 2007, 50.

<sup>20</sup> Shai Oster, “China Seems Poised to Pass U.S. as Top Greenhouse Gas Emitter,” *The Wall Street Journal*, 24 April 2007, A6.

<sup>21</sup> Jane Spencer, “Clean-Energy Firms Make Pitch to Asia,” *The Wall Street Journal*, 18 April 2007, A9.

most of China's manufacturing and export industry.<sup>22</sup> If global warming destroys arable land, floods coastal cities and diminishes China's already marginal water supplies, economic growth will be of little importance.

The second system condition challenge – to limit persistent man made substances – is more easily described than accomplished. It has taken an inordinate amount of time to eliminate harmful substances particularly when a product is profitable and people are accustomed to its use. In 1985, 20 nations signed an agreement to phase out the use of Freon, a trademarked name for a family of persistent chemicals that has depleted the ozone layer. China signed the accord four years later but in recent years has been the world's largest producer of Freon. China has now banned the production of Freon but it has taken over twenty years for all nations to eliminate a substance known to be a serious hazard to the planet.

The third system condition – limit what has to be thrown away – has gotten the attention of a number of Chinese entrepreneurs. Two vastly different examples will illustrate the range of what can be done to reduce two very different kinds of waste.

When researchers at the Chengdu Giant Panda Breeding Base visited Thailand they found samples of paper made from elephant dung. Following the same logic, they are now exploring how to turn the panda's droppings into reams of office paper.<sup>23</sup> This is a great example of mimicking nature's practice of turning one species' excrement into another species prized possession.

Zhang Yin, a visionary entrepreneur, formed a company in the 1990s to collect paper for recycling and then ship it to China. Her companies now take tons of waste paper from the U.S. and Europe, ship them to China and recycle them into corrugated cardboard. The cardboard is then used to make boxes that are packed with toys, electronics and furniture and sent to Western consumers. After the boxes are thrown away, the cycle starts all over again. Forbes magazine has identified Ms. Zhang as one of the wealthiest women in the world.<sup>24</sup> The rewards for trend-setting environmental practices are obviously enormous.

The fourth system condition – meet basic human needs – is a worldwide problem; the rich are getting richer while the struggle of the poor intensifies. The top 300,000 Americans earn almost as much income as the bottom 150 million. In fact, the top earners received 440 times as much as the average person in the bottom half. The wage gap in the U.S. is almost double what it was in 1980. Most commentators think this is an unsustainable and ultimately dangerous situation.<sup>25</sup>

Despite the spectacular success China has had in expanding its economy, the benefits have not been as widely shared as some had hoped. An analysis by the World Bank determined that between 2001 and 2003 China's economy expanded almost 10% per

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<sup>22</sup> Oster, A6.

<sup>23</sup> "Double Duty for Panda Poop," *The Philadelphia Inquirer*, 27 March 2007, A9.

<sup>24</sup> David Barboza, "Blazing a Paper Trail in China," *The New York Times*, 16 January 2007, C1.

<sup>25</sup> David Cay Johnston, "Income Gap is Widening, Data Shows," *The New York Times*, 29 March 2007, C1.

annum yet the average income of the poorest 10% of the country's households fell 2.5%. Roughly 130 million Chinese earn \$1 a day or less.<sup>26</sup> China's officials are very aware of the problem and their push for a "harmonious society" that closes the income gap has been a major initiative of the present administration. Environmental degradation is likely to be a major problem in China until poverty is diminished and more people share in the country's robust economic growth.

We have seen that a concerted effort by the world business community is crucial to solving today's environmental problems. Entrepreneurial companies of every size and description have a huge opportunity not only to revitalize the ecosystem but to garner substantial rewards for their time and ingenuity. Hopefully, the enormity of the challenges confronting China will spur its most innovative thinkers to develop solutions that create a healthier, more prosperous world for all the planet's inhabitants.

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<sup>26</sup> Andrew Batson and Shai Oster, "In China, Growth at Whose Cost?" *The Wall Street Journal*, 22 November 2006, A4.