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The Future of Business Organizations and Their Attention to Environmental Sustainability

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Abstract

Business organizations around the world use different approaches to environmental sustainability principles and practices. The business organization, specifically the limited liability company, has been a powerful world influence. These organizations use environmental principles and practices within specific functional areas such as operations and marketing. Also, companies make escalating commitments to sustainability, from compliance with regulatory requirements to developing new business theories and governance forms. These organizational practices are complemented by social entrepreneurs who develop new businesses and solve large, intractable problems. The investment community has been much more active in using environmental and social sustainability as investment criteria. The future of environmental sustainability and the business organization lies in increasing attention to the environment with more internalization of prices of environmental outcomes and much more clarity around standards, acceptable company practices, and partnerships. Finally, we will see shifts of national power to China, a country that will dictate standards for many nations' approaches to environmental sustainability.

Hegel predicted that the basic unit of modern society would be the state, Marx that it would be the commune, Lenin and Hitler that it would be the political party. Before that, a succession of other commentators claimed the same for the parish church, the feudal manor, and the monarchy. All have been shown wanting compared to the company (Micklethwait and Wooldridge, 2005). The most important organization in the world is the company, which has become the basis of prosperity of the West and best hope for the future of the rest of the world. The only real rival for the company is the family.

This claim is important to our understanding about how companies and sustainability go together. There are two ways to define a company. First, it is an organization engaged in business. This definition includes everything from informal Assyrian trading arrangements in the 24th century BC to modern leveraged buyouts. Second is the limited-liability-joint-stock company which is a distinct legal entity endowed by governments with certain collective rights and responsibilities. Our focus is on this limited-liability-joint-stock company, even though this article contains information, at times,

on other entities such as non-governmental organizations and some interesting experiments with alternative governance forms.

The three essential ideas about this corporate form are (a) that it could be an artificial person with the same ability to do business as a real person; (b) that it could issue tradable shares to any number of investors; and (c) that those investors have limited liability so that they would lose only the money they had committed to the firm (Micklethwait and Wooldrige, 2005). Surprisingly, the history of the formation of this type of company has been much more dramatic despite the recent failings of several companies in various sectors; financial services such as Lehman Brothers (Cogan, 2008), natural resources such as BP (Parry, 2012) and consumer goods, such as Wal-Mart (Rubinfeld, 2012). Before limited-liability-stock companies were firmly established many companies were not transparent, did not support shareholders, and tended to collude on prices and products (Micklethwait and Wooldrige, 2005). The modern company has become more ethical and more impactful in our society. Companies have increased the pool of capital available for investments and allowed investors to spread risks by purchasing small and easily marketable shares in several enterprises. Companies provide a way of imposing effective management structures on large organizations. And for investors, if the company does not act appropriately, investors simply put their money elsewhere (Micklethwait and Wooldridge, 2005).

Also, modern theory about companies shows that clusters of companies create more employment than non-clustered companies (Porter and Rivkin, 2012; Muro, Rothwell, and Saha, 2012). Silicon Valley is only one of many examples where companies of all types (customers, suppliers, universities, venture capitalists, etc.) focus on an industry to mutually support an industry's development.

Thus, it is no wonder that we should explore how businesses, the limited-liability-joint-stock company more specifically, are impacted by and impacting environmental sustainability outcomes. This article's goal is to explore how companies are adopting principles and practices related to environmental sustainability and are the cause of some of the environmental problems we face as a world. This article will take a global perspective, highlighting best practices and future directions for this organizational and environmental view.

Why Companies Focus on Environmental Sustainability

What is the business case for focusing on environmental sustainability as a source of competitiveness? There are clear environmental, social and regulatory pressures on organizations that provide incentives for them to pay attention to their environmental impacts and the impacts of the environment on companies. Resources are increasingly scarce as evidenced by the ever decreasing pool of fossil fuels, ecosystem degradation, and scarce water. The world is facing environmental pressures such as deforestation, ozone layer depletion, desertification, climate change, acid rain, extinction of entire species, poor air quality and ill-health outcomes from environmental changes.

These pressures impact companies in various ways. For example, as water rises due to climate change many coasts will be sinking because of the subsidence that follows as cities suck up groundwater (The Economist, 2010; Hansen, 2010). Water changes will force some companies to privatize water sources, partner more closely with municipalities or relocate operations. For example, the North Carolina coastline is depleting at a rapid rate impacting that region's economy. Water is rising three times faster on the North Carolina Coast than it did a century ago as warming oceans expand and land ice melts. Some experts believe this rise will be as much as 1 meter by 2100

(Henderson, 2011a). Economists say that in just four counties on the North Carolina coast \$6.8 billion worth of property will be at risk from rising seas (Henderson, 2011b). Other scientists and mostly politicians deny these claims, however. (Henderson, 2012).

Many of these environmental situations have already reached our planetary boundaries meaning that we are past the designated point where the Earth can sustain human existence in the long run (Rockström, 2009). These pressures and limitations will influence company practices especially as they design their strategies for competitiveness.

Assumptions About Business and Sustainability

The business case for focusing on environmental sustainability includes several assumptions that guide the presentation of this information. First, environmental issues trump social and economic outcomes. This assumption means a triple bottom line perspective, rather than a narrower business model that short term earnings are paramount, biased toward environmental considerations. Triple bottom line refers to one of two ideas for business outcomes: a balanced performance commitment across environmental, social, and economic outcomes or a balance among environmental, social and governance practices (known as ESG) within a business (Soyka, 2012).

Second, organizations are part of the problem and solution. Environmentalists have negatively targeted organizations as the major cause of poor environmental conditions until recent attempts to partner with these same companies to solve environmental problems. (Brulle, 2000; Nordhaus and Shellenberger, 2007; Hawken, 2007). For example, the Nature Conservancy has partnered with organizations such as 3M, BP, Lowes and Xerox. (Nature Conservancy, 2012)

Third, underlying this material is the precautionary principle, i.e., that we act even in the face of scientific uncertainty accepting contemporary science including forecasts and evaluations to take actions necessary to ensure global sustainability (Broughton, 2011).

Assume that the science is false, and we take actions to mitigate global warming’s impact, for example. We incur unnecessary costs and possibly a global depression from ill-invested money. If the science is false and we do not act, then we get to use the money for other purposes. Yet, what if the science is correct (which is a core assumption in this article). If we act, we get a chance to mitigate ill effects of global warming before the impacts are too late to mitigate. If we do not act, we will face devastation.

Given this simplistic illustration, we must act. The downside of being wrong is too great. Having a negative economic growth is much more manageable than devastation to our human existence. Table 1 below is an illustration of the precautionary principle related to global climate change.

Table 1: Global Climate Change – Global Warming	Action	
	Yes	No
False	Cost Global Depression	OK, used money for other issues
True	Cost; we mitigate impacts	Catastrophe

Fourth, this article assumes that nature provides services (known as ecosystem services such as fresh water and social and forest sequestration of carbon) that benefit us and for which we can value into the prices of goods and services (Kareiva, P., Tallis, H., Picketts, T., Daily, G., and Polasky, S. 2011). This assumption leads to the conclusion that we will discover the price value of these ecosystems. This trend is discussed under the article's section about the future of business and sustainability.

Fifth, this business case is based on weak sustainability (Hackett, 2006; Socolow, 1974). Weak sustainability assumes that human-made capital can substitute for natural capital and the services provided by ecological systems. If natural systems are limited, and there is little substitution between different types of natural and human-made capital stocks, then per capita consumption may not be sustainable in a world with a growing population. This weak sustainability presents a bias towards human survival. The substitution of human-made capital for exhausted natural capital is justified so long as the increase in the productive capacity of human-made capital more than offsets the loss in productive capacity from natural capital. This non-declining aggregate must be maintained over time. For example, according to weak sustainability advocates the decline in wetlands may be offset with constructed wetlands that are sustainable.

Does "Green" Pay?

In brief, "yes" with a caveat that well-organized and well-done efforts gain more returns than others. Well-chosen pollution prevention, eco-efficiency and similar initiatives pay for themselves (Hart and Ahuja, 1996; Russo and Fouts, 1997). There is a strong, positive correlation between improved proactive environmental practices and the firm's value (Lioui and Sharma, 2012). Environmental efficiency and innovation tend to add value to the firm as tangible and intangible assets increase in value (Konar and Cohen, 2001; Dowell, Hart and Yeung, 2000; Guenster, Derwall, Bauer, and Koeddiijk, 2006). The cost of equity capital is lower for firms with relatively advanced environmental management practices (Plumlee, Brown and Marshall, 2008). Yet, investors do not seem to value sustainability disclosure but are interested in the firm's actual performance. Companies that report better sustainability performance attract additional dedicated institutional investor and analyst coverage as well as lower analyst forecast errors, such as on future earnings (Soyka, 2012). Voluntary environmental disclosure mediates the effect of poor environmental performance on environmental reputation. Membership in the Dow Jones Sustainability Index appears to be driven more by what firms say than what they do (Cho, Guidry, Hageman and Patten, 2012).

Evidence shows that investing in improved employee welfare and relations, environmental policy and performance, and product characteristics contributes to reducing a company's cost of equity and potentially offers other benefits. Credit markets are more limited in their responses yet it is increasingly clear that credit markets are sensitive to environmental liabilities. Climate change is the largest emerging issue that when a firm discloses its GHG emissions, and they are viewed as high compared to some standard, they contribute to a negative company valuation (Griffin, Lont, and Sun, 2010). The companies within the Global 100 Most Sustainable Companies (Hoepner, Yu, and Ferguson, 2010) outperformed the overall market with mixed results across some industries. For example, consumer facing industries had stronger results.

This is a complex area of study, especially since authors use different definitions of sustainability, environmental impact, and corporate social responsibility. Yet, in general, the studies of the relationship between environmental sustainability practices and a company's financial performance

are promising. Many studies show at least some relationships between positive environmental outcomes from a company's actions and that firm's value (Soyka, 2012).

Given that companies can gain value from environmental sustainability practices, what are these company practices and how can we understand the varied approaches to using environmental sustainability principles and practices for value creation?

Business Focus on Sustainability: Organizational Functions

One way to view the sustainability focus and actions of companies is according to various functions within organizations (Epstein, 2008). This view is on how each function within an organization adopts environmental sustainability principles and practices to increase an organization's competitiveness (Ambec and Lanoie, 2008; Hitcock and Willard, 2009). Here are a few examples.

Operations are obvious areas to see how corporations have adopted environmental sustainability principles and practices. Manufacturing has led the way to more sustainable practices by focusing on cost effective uses of resources including new sources of energy and reductions in water use. Also, lean management practices (Womack and Jones, 2006) are now common among plant managers. Lean management is a process of eliminating waste from every possible place through process redesign. Green chemistry (Liroff, 2010), product and process design to decrease environmental impact (Bejan and Zane, 2012; Macnab, 2012) and new materials, some designed from nature (Benyus, 2000; Phansey, 2010) are now part of conversations about product development and company operations.

Finance and accounting are less obvious participants in using environmental sustainability principles and practices. Yet, several recent advances are noticeable. For example, the need for nonfinancial reporting has increased dramatically since the 1990s. This increase comes from several incentives. More and more companies and investors have concluded that financial statements do not provide a complete picture of a company's performance (Eccles and Krus, 2010). Many of a company's assets are intangible and not shown on the company's balance sheet. Nonfinancial information can be categorized into three major types: (1) intangible assets including intellectual capital such as patents and inventions; (2) key performance indicators such as customer satisfaction ratings and product acceptance in market share and (3) environmental, social and governance information. Some studies suggest that as much as 35 percent of a company's market value is tied up in these intangibles (Wyatt, 2008).

Also, companies are required to disclose information about their environmental conditions by responding to the Securities and Exchange Commission Regulation S-K and Regulation S-X, Securities Act Rule 408 and Exchange Act Rule 12b-20. The SEC requires companies to disclose information on climate change and business risks and opportunities associated with energy, greenhouse gas emissions and natural resources (Soyka, 2012: 204-206).

Marketing is another organizational function that has benefitted and been challenged by environmental sustainability principles and practices (Esty and Winston, 2006). Green marketing and green advertising can be defined as promotional messages that target the needs and desires of environmentally concerned consumers (Ginsberg and Bloom, 2004; Zonkham and Carson, 1995). This definition means that any advertisement should contain at least one of three criteria: (1) explicitly or implicitly address the relationship between a product or service and the biophysical

environment through labeling, for example (Teisl, 2011); (2) promotes a green lifestyle with or without highlighting a product or service and (3) presents a corporate image of environmental responsibility (Banerjee, Gulas and Iyer, 1995).

Marketing departments can subdivide their messages into one of five types: product and service claims; process claims; image claims; environmental claims such as decreases climate impacts; and social claims, such as Starbuck's fair trade program. Companies try to avoid false claims to be accused of greenwashing (Borin, 2010). Greenwashing is a company's false or perfunctory claims about their environmental efforts.

Companies are taking environmental issues into account as they create their strategies for competitiveness (Nidumolu, Prahalad, and Rangaswami, 2009; Larson, 2010; Laszlo, Christensen, Fogel, Wagner, and Whitehouse, 2010; Laszlo and Zhexembayeva, 2011). For example, adapting to a low-carbon economy is often seen as a strategic issue (Grobbel, Maly and Molitor, 2004; Enkvist, Nauc ler, and Oppenheim, 2008; Sussman and Freed, 2008; Schuchard, Sapru, Stewart, Unruh, and Winston, 2007). A common practice among companies that view their strategies through an environmental sustainability lens is to adopt certain principles that guide all of their actions (Unruh, 2008). The most common principles come from Natural Step that advocates a sustainable society must eliminate its contribution to the (1) progressive buildup of substances extracted from the Earth's crust (for example, heavy metals and fossil fuels) (2) the progressive buildup of chemicals and compounds produced by society (for example, dioxins, PCBs, and DDT) (3) progressive physical degradation and destruction of nature and natural processes (for example, over harvesting forests and paving over critical wildlife habitat); and (4) conditions that undermine people's capacity to meet their basic human needs (for example, unsafe working conditions and not enough pay to live on). (The Natural Step, 2012)

Industries have certain practices different from each other and which influence functional areas within firms. For example, financial services companies and their industry associations tend to focus on lending practices and their own built environment (Fogel, 2010). The cement industry (Twig and Hunziker, 2010) and steel industry (Irons, 2010) have focused on more environmentally friendly products and processes; Travel, tourism and hospitality have developed model hotels, unique travel packages and travel practices that use less natural resources and provide environmental education to consumers (Lund-Durlacher, 2010; Walmsley and Font, 2010); the Health Care industry associations and companies have has reengineered their supply chains using environmental standards (Whitehouse, Zabinski, Jameton and Smith, 2010); and biotechnology (Leung, 2010) and pharmaceuticals (Laszlo, Whitehouse and George, 2010) have focused on moving toward more natural ingredients in drugs.

These are just a few examples of functions and industries that adhere to environmental sustainability principles and practices and many more can be cited (Moran and Fremeth, 2009). Another way to review company practices is to look at their escalating commitment to changing an entire organization. The following section will cover this methodology of classifying organizations and supporting the business case for company adoption of environmental sustainability as a focus.

Business Focus on Sustainability: Three Easy Levels for Escalating Commitment

Another way to view the sustainability focus and actions of business organizations is as an escalating commitment to innovation and using environmental sustainability as core to an organization's strategy (Nidumolu, Prahalad, and Rangaswami, 2009; Larson, 2010; Laszlo, Christensen, Fogel,

Wagner, and Whitehouse, 2010; Laszlo and Zhexembayeva, 2011). Organizations are under pressure to comply with regulatory regimes especially related to pollution and product design (Hoffman, 2000). This compliance mentality was the focus historically on those firms that said they were environmental friendly. For example, chemical companies often claimed that they were compliant with regulatory requirements despite evidence that they were polluting our environment, especially when customers used the chemicals. This stance changed when DuPont advocated an environmental sustainable approach to the development of chemical products.

A step up from this compliance-only focus is cost cutting, probably the most common reason firms say that the business case exists for a focus on environmental issues. For example, firms have identified several ways to cut costs and waste from their production processes. This cost cutting involves using less resources such as energy and water. Cost cutting creates long-term benefits by restructuring a firm's cost structure.

A third commitment level is to work on sustainable value chains. A defining example is Wal-Mart which is transforming the sustainability and retailing worlds. It is engaging in a significant expansion of its highly influential supplier scorecard program (Mui, 2007). Wal-Mart announced in early 2012 that it will broaden its initial 15-question scorecard to 100 major categories, with category-specific questions.

When Wal-Mart introduced its initial scorecard, tens of thousands of suppliers increased their investments in sustainability. This expanded scorecard promises to have an even bigger impact. Not only will it shift the landscape for Wal-Mart suppliers, but it also could greatly influence supplier scorecard programs at many other companies (Denend and Plambeck, 2006; Humes, 2011).

Aggressive suppliers have an opportunity to stand out from their competition by getting a higher score. With an increased emphasis on education and incentives for Wal-Mart buyers and merchants, leading suppliers may get future returns for their sustainability investments. Suppliers that approach scorecard programs with a "compliance" approach, i.e., those that do the least amount of work required, may find themselves at a competitive disadvantage.

The key to Wal-Mart's efforts is the use of scientifically derived assessment criteria developed by The Sustainability Consortium (TSC). Members of the consortium include many of the world's largest consumer goods manufacturers and brands, as well as leading nongovernmental organizations. If other TSC retail members, such as Safeway, Marks & Spencer and Best Buy, develop similar scorecard programs, consumer product sustainability will be changed forever.

Wal-Mart is not without its detractors. It has been seen as exploiting workers (Greenhouse, 2003; Woodman, 2012; the Economist, 2011b), causing suppliers to go out of business (Gunther, 2006), violating the foreign corrupt practices act (Rubinfeld, 2012), and creating harmful environmental outcomes in local communities (Gunther, 2006). While we can point to some Wal-Mart behaviors that are positive for environmental outcomes, on-balance many are not sure Wal-Mart is the best role model for a best-in-class company.

The next level of commitment is to work on new products and services. This use of environmental sustainability as a lens on a firm's development of new products and services is one taken by Patagonia, Burt's Bees, and various other consumer products companies. Clorox has tried to change its approach to its markets by acquiring Burt's Bees and Brita (Ofek and Barley, 2011). The

purchases, bought at a premium, were designed to help Clorox revamp its various products. Clorox has a strategy that is responsive to four trends – health and wellness, sustainability, affordability and multicultural trends. The focus on sustainability, a priority in the near future, was not progressing so Clorox bought Burt's Bees to help the company revamp its products, especially what the company calls products around you (e.g., cleaners) and on you (e.g., cosmetics). This purchase helped Clorox develop its Greenworks products. This product development focus is common when firms engage in life cycle analysis, a methodology to identify the environmental impact of products and to re-engineer the products to lessen the environmental footprint (Baumann and Tillman, 2004).

Also, many firms give employees incentives to provide environmental sustainability ideas such as Natura, a Brazilian cosmetics company that gives bonuses to staff who find ways to reduce the firm's environmental impact. Some give customers incentives such as Manila Water, a utility company in the Philippines that reduced the amount of water it was losing through wastage and illegal tapping from 63% in 1997 to less than 12% in 2010. They made water affordable for the poor to achieve these results (The Economist, 2011c).

Business Focus on Sustainability: Three Difficult Levels for Escalating Commitment

The final three levels of commitment are less common among firms: new business models, new platforms and a new theory of the firm (Hart, 2007; Lowitt, 2011; Hawken, Lovins, and Lovins, 2009; Porter and Van der Linde, 1995).

A business model describes the rationale of how an organization creates, delivers and captures value. This description includes various organizational components that show the logic of how a company intends to make money (Osterwalder and Pigneur, 2010: 15). Components include descriptions of customer segments, partnerships, how the company solves customer problems, and satisfies customer needs, and the relationship among revenue streams and the firm's cost structure. Environmental sustainability principles and practices are ideal for changing a firm's business model. For example, certain customer segments care a great deal about a product's environmental footprint. Servicing this customer segment could change a firm's value capture and delivery by repositioning a product or altering delivery channels.

Many large multinational companies partner with NGOs for various reasons. Coca Cola works very closely with several NGOs such as the Alliance for Water Stewardship, to increase the efficiency of its use of resources, especially water. This change in its business model is substantial as Coca Cola commits itself to many of the principles advocated by these NGOs. Coca Cola formed these partnerships because it wanted to increase its transparency and to learn new methods for water sustainability.

Commitment to new business platforms includes changing a company's production methods. This level involves knowledge of how renewable and nonrenewable resources impact business ecosystems and industries. For example, business platforms can be used so that customers and suppliers manage energy in radically different ways. Also, technologies would be redesigned to allow companies to use by-products from industrial processes. Broad Group, a Chinese maker of air conditioners taps the water heat from buildings to power its machines. Zhang Zidao Fishery Group, a Chinese aquaculture company, recycles uneaten fish to fertilize crops (The Economist, 2011c).

Another platform is created by the intersection of the internet and energy management (Fox-Penner, 2010). The interface uses digital technology to manage every aspect of energy generation to use in the home. The newer aspects of this arrangement, usually called “the smart grid” are management of home appliances, management of commercial spaces, and two way communications between users and providers (Mackay, 2009; Fox-Penner, 2010).

Finally, the most comprehensive commitment level is to rethink a company’s theory of the firm and create new organizational types (Davis, Lukomnik, and Pitt-Watson, 2006). This rethinking involves at least new governance structures and legal forms.

Public companies have had severe difficulties. U.S. public companies once admired such as Enron, Tyco, WorldCom, and Global Crossings have imploded. Lehman Brothers collapsed and GM and Citicorp, among others, recently needed government bailouts. State-owned enterprises, on the other hand, were growing in emerging markets (accounting for 80% of the Chinese market, 62% of the Russian market and 38% of Brazil’s market) and private equity firms grew in the West (The Economist, 2012). Asia demonstrated that family-owned conglomerates such as Tata and Birla could be a successful governance model.

Partnerships have demonstrated that one could limit tax liabilities and the number of investors. These corporate forms have adopted interesting forms including Liability Limited Partnerships (LLPs), Publically Traded Partnerships (PTPs) and Real Estate Investment Trusts (REITS).

France has two tiers of partners in its Sociétés en Commandite par Actions (SCACs); general ones jointly and severally liable for a company’s debts and limited partnerships who are ordinary stakeholders with little power and who can lose only what invested.

A brownie supplier to Ben & Jerry's ice cream, a skateboard maker and a payday lender are among the hundreds of existing businesses that plan or have incorporated as Benefit Corporations. (Loten, 2012; B-Lab, 2012). Benefit Corporations are a diverse community with one unifying goal: “to redefine success in business.” (Marquis, Klaber and Thomason, 201). Benefit Corporations are a combination of legal form and a declaration to action that supports social, environmental and economic outcomes.

Companies that use this corporate form will be taking advantage of a new and untested corporate charter, available in only a half dozen states. The following U.S. states have passed the legislation: Maryland, Oct. 1, 2010; Vermont, July 1, 2011; New Jersey, March 7, 2011; Virginia, July 1, 2011; Hawaii, effective July 8, 2011; California , effective Jan. 1, 2012; New York, effective Feb. 10, 2012. The following are introduced: Colorado, Jan. 13, 2011; North Carolina, Feb. 1, 2011; Pennsylvania; Feb. 11, 2011; Michigan, May 4, 2011. Outdoor-apparel company Patagonia Inc., which places high priority on sustainable and renewable production methods, incorporated under the new structure in California in 2012.

One advantage of this governance structure is protection from investor allegations of not maximizing shareholder value. A benefit corporation isn't a nonprofit nor is it tax exempt. For an investor, this corporate form may be a bad idea due to lack of accountability. If management makes a bad decision, there may be little an investor can do about it. Some proponents of the benefit corporation believe its biggest value may come at the time of the sale or breakup of a business, because directors might be able to consider factors other than maximizing short-term value. These

other considerations were an issue for Ben & Jerry's Homemade Inc., the ice cream company sold to Unilever PLC in 2000, despite the objections of co-founder Ben Cohen and some directors. If benefit corporations had existed back in 2000, the board probably wouldn't have agreed to the Unilever deal because Ben and Jerry felt that Unilever might not maintain a focus on environmental sustainability and social goals.

The L3C (low-profit, limited liability company), is another new corporate structure designed to attract a wide range of investment sources thereby improving the viability of social ventures. In April 2008, Vermont became the first state to recognize the L3C as a legal corporate structure. Similar legislation is available in Georgia, Michigan, Montana and North Carolina.

The L3C's goal is to bring together a mix of investment money from a variety of sources. This process starts with investments from foundations known as Program Related Investments (PRIs). Foundations are required to spend at least five percent of their assets in a given fiscal year to maintain their tax-exempt status. They have two basic options for spending their money: they can make grants with no financial return on the money or they can make program-related investments (PRIs) investing in for-profit ventures and potentially earn a return.

Unlike the Limited Liability Corporation (LLC), the L3C is explicitly formed to further a socially beneficial mission. The L3C's operating agreement specifically outlines its PRI-qualified purpose. This requirement makes it much easier for foundations to make program related investments in social ventures while ensuring their tax-exempt status remains secure.

Some examples of types of L3C companies that have been created are in areas such as carbon trading, alternative energy, food bank processing, social services, social benefit consulting and media, arts funding, job creation programs, economic development, housing for low income and aging populations, medical facilities, environmental remediation, and medical research.

Township Village Enterprises (TVEs) are yet another experiment in alternative corporate forms. They are market-oriented public enterprises under the purview of local governments based in townships and villages in China. The State Council of the People's Republic of China first officially used the term TVE in 1984 (Huang, 2008). Some suggest that TVEs refer to enterprise location, as opposed to the ownership structure. That is, TVE never referred to only companies owned by township and villages; rather, TVE refers to companies located in townships and villages. Yet, generally, TVEs act like private companies but maintain a semblance of public ownership. (Huang, 2008).

The changing of the business organization and reaching this last level of commitment will involve adopting new discourses and fostering engaging conversation (Senge, Smith and Kruschwitz, 2010) such as for those that put environmental issues at the core of a company's strategy (Dryzek, 2005; Dopplett, 2010). Consider one view:

...Business has to begin to take on and engage in questions and dialogue that it has, until now, largely avoided. If natural capital is diminished, while manufactured capital is expanding, business must ultimately create production and distribution systems that reverse this loss and eventually increase the supply of natural capital...It will mean a fundamental reevaluation of business's roles and responsibilities (Hawken, Lovins, and Lovins, 1999:320)

The next section explains one other type of investment that could support environmental sustainable outcomes and is a new business platform, i.e., investing in new businesses for social purposes. I will discuss entrepreneurship and what makes for successful entrepreneurial efforts to solve social problems.

Social Entrepreneurship: Extending a New Theory of the Firm

Entrepreneurs have always been the drivers of progress that act as engines of growth, harnessing opportunity and innovation to fuel economic advancement. Social entrepreneurs, like their business counterparts, are similarly focused; they tap into vast reserves of ambition, creativity and resourcefulness to solve large, intractable problems (Sees and Anderson, 2003). Social entrepreneurs pioneer innovative, effective, sustainable approaches to meet the needs of the marginalized, the disadvantaged and the disenfranchised. See Table 2 for a description of how social entrepreneurship is different from other types of entrepreneurship.

Table 2: Types of Entrepreneurs (adapted from Dacin, Dacin and Matear, 2010)

	Conventional (Schumpeter, 1950)	Institutional (DiMaggio and Powell, 1983)	Cultural (Wilson & Stokes, 2004)	Social	Intra- preneurship
Structure	Profit	Profit	Not-for-profit and profit	Not-for-profit and profit	Within an organization
Primary Motive	Returns to shareholders	Institutional reform and development	Cultural diffusion and enlightenment	Social change and well-being	Returns to shareholders
Offering to consumers/ constituents	Product or service	Legitimacy	Support and establish norms and values	Promote ideology and social change	Products or services
Contemporary Examples	Business services; software developers; tourism; new technology	Edison, Facebook, Google, Kodak, Apple	Museums, Folk art festivals, orchestras, dance,	Tom’s Shoes, Grameen Foundation, Barefoot College	Compete with existing businesses within the firm

Social firms, like other types of enterprises, have dominant logics that guide their actions. They are as old as time with known examples such as Marie Montessori who established unique schools and pedagogy for high poverty areas. These organizations have a different dominant logic about how a manager conceptualizes his or her business (Morris, Kuratko and Covin, 2007).

Tremendous business opportunities exist in addressing the world’s most intractable problems (Seelos and Mair, 2005; Hamm, 2008). Microfinance, for example, makes accessible loans and other assistance to help people who would otherwise not have access to capital markets. These finance businesses set up infrastructures to loan money and facilitate business. The most well-known attempt has been Grameen Bank, located throughout the world (Yunus, 1999; Yunus, 2007; Prahald, 2006; Smith and Turman, 2007).

Companies such as Nutriset, a private company since 1986 in France has been selling food produce to combat hunger and malnutrition since 1986. The company had sales of \$25 million (2006) up

from \$6.5 million in 2001 (Nutraset, 2012). Other examples are Scojo Foundation that supplies glasses sold in developing nations and that trains kiosk owners; getting computers in the hands of children (Negoponte, 2007), UV treatments to treat water through WaterHealth (WaterHealth, 2012), and supplying eco-friendly houses (Fogel and Nestor, 2011)

Established companies and many people in developed nations have a collective interest in eliminating poverty as this situation could be a threat to its collective security and poverty is linked to disease and environmental degradation (Banerjee and Duflo, 2011). Also, companies need skilled labor which is linked to education of large numbers of people (Marber, 2009). While charity may be one solution to addressing the poverty challenge, many analysts point to its failure. (Skoll Foundation, 2012). Sub-Saharan Africa, despite millions in aid, has not grown economically. More than 2 billion people live on \$2 per day. Charitable giving in the United States fell slightly from 2006 to 2010 to just under 2 percent of GDP (Giving USA Foundation, 2010). Religious groups were the major beneficiaries of charitable giving (35% in 2010) followed by education (14% in 2008) and foundations (11%). Some of these organizations, especially religious and foundations, addressed world poverty.

So, some people argue that the wealthy can save the world by giving money to social entrepreneurs (Bishop and Green, 2009). Others, however, state that the hype will divert attention from the deeper changes required to transform societies. These deeper changes will come from business solutions to difficult social problems.

This next section focuses on another innovation related to companies and sustainability, i.e., socially responsible investing and use of sovereign wealth funds to achieve triple bottom line results.

Socially Responsible Investing (SRI) and Sovereign Wealth Funds

SRI refers using socially responsible, environmentally and economically sustainable criteria for investments. The SRI industry uses non-financial criteria in public and private investment for those who want their investments to be consistent with their values and to join with others to change unethical corporate and government behavior.

SRI usually refers to the process of exclusion, engagement or positive investment at an individual, institutional or government decision making level. An example of exclusion is not investing in alcohol or excessively polluting companies. An example of engagement is when US investors, through pension, state and religious funds, joined together to pressure US businesses to end their implicit or explicit support of apartheid (BBC, 2009). This engagement and investment stance formed a major turning point in the effort to end apartheid. In 2002 some funds led by a coalition of Catholic nuns, petitioned General Electric to report on greenhouse gas emissions and the steps the GE Board could take to promote energy efficiency and deal with climate change. This effort was supported by 23 percent of GE's investors and a precursor to GE's Ecoimagination (Davis, Lukomnik, and Pitt-Watson, 2006). Good examples of social investment funds are Portfolio21, Highwater Global, Winslow Green Growth Fund and New Alternatives (Social Invest, 2012).

Governments have been important to and intertwined with SRI. Some governments have made superannuation saving compulsory or have insisted on disclosure about whether funds are SRI, such as in Britain. China has established the National Council for Social Security Fund for social security

The tragedy of the commons is another reason why we do not act. This tragedy is a dilemma arising from multiple individuals, acting independently and rationally according to their own self-interest that depletes a shared limited resource, even when it is clear that it is not in anyone's long-term interest to realize this outcome (Hardin, 2006). Situations exemplifying the tragedy of the commons include the overfishing and destruction of fish-runs on rivers that have been dammed, the use of limited water available in arid regions and pollution caused by driving cars.

We tend to lack a long-term focus. When we discuss climate change impacts 100 years from now, most people have trouble relating to these outcomes and the time horizon. Also, we tend to have power clashes and claims of fairness. For example, many developing nations claim that they should be able to use fossil fuels to build their economies, just like a mature economy did earlier in their development.

Irrational behavior and values clashes may lead to destroy the ecosystems that sustain our lives. American culture emphasizes independence, individualism and a sense that we can control our destinies (Diamond, 2005). These cultural values are related to the ways we treat our natural world. We tend to believe that it is our right to buy and build, to pollute even if we have to pay for that right and to use resources at will. Other societies do not have these same attitudes and values (Weaver, 2002).

We tend to have a psychological denial that anything is wrong. We have beautiful weather, our water supply continues to run, and data show that our world is improving in terms of overall poverty (Marber, 2009).

Most disturbing is the lack of regard for science. Articles appear continuously saying that most of the scientists are wrong about their concerns over environmental degradation (e.g., Allegre, et al, 2012; Michaels, 2004). Yet, many more scientists point out clearly that policy actions and the science are needed and clear and our urgency is well founded (Nordhaus, 2012).

These reasons and many more are points for action. They tend to be natural tendencies when dealing with such large intractable issues and need to be confronted by those who are taking action to offset negative environmental outcomes and missed opportunities for increasing firm level competitiveness. Given this background and some tendency to avoid action, what does the future hold? This prognostication is the basis of the next section.

The Future

One clear trend is that this way of thinking and acting will increase dramatically over the next decades (Diamond, 2005: 522). The majority of businesses in the USA say that the benefits resulting from their sustainability initiatives have exceeded expectations (Accenture, 2011). Some research shows that businesses are falling into two camps: embracers and cautious adopters (MIT Sloan Management Review and The Boston Consulting Group, 2011).

Ernst von Weizsäcker, former member of the German Bundestag, stated almost twenty years ago: “We are entering the century of the environment, whether we want to or not. In this century everyone who considers himself a realist will be forced to justify his behavior in light of the contribution it made toward the preservation of the environment” (von Weizsäcker, 1994). Yet, this

“justification” is more evident in some countries as opposed as others, such as Germany and Australia being most evident, United States being the least evident. Organizations that rank social responsibility company practices will influence companies to act especially those that receive poor ratings (Chaterji and Toftel, 2010).

We will see environmental management systems gain prominence in companies (Tinley and Pillai, 2006; Blackburn, 2008). This development will probably result in common practice within companies, especially as companies more and more meld their financial with nonfinancial information. These management systems will be more integrated with the financial reporting system used commonly within companies. One example is a company that combines its reports is PGI, a manufacturer and marketer of engineered materials, focused primarily on the production of nonwoven products. Its 2012 Stakeholder’s Report states “this is PGI’s first annual Stakeholder’s Report, which integrates our sustainability report, based on the Global Reporting Initiative’s (GRI) G3 reporting framework, with the qualitative and quantitative data from our annual report.” (PGI Stakeholder’s Report, 2012: 10).

Regulatory agencies are increasingly aware that they will influence corporate behavior. The higher the uncertainty in regulations the less uniform the corporate responses (Engar and Hoffman, 2011). Therefore, regulatory actions from government legislative bodies and the agencies that enforce those regulations will partially dictate how effective companies can be in the future. Hopefully we will see innovation-friendly regulation (Porter and van der Linds, 1995). The SEC is getting more aggressive to have companies disclose information, including detailed information about oil and gas companies’ hydraulic fracturing operations and their risks (Solomon, 2011). Yet this continued press from regulators is highly uncertain as political whimsy in the world may whipsaw businesses as political administrations change.

One way the sustainability conversation will increase in importance is that pricing externalities will be more common. An externality is when prices in a competitive market do not reflect the full costs or benefits of producing or consuming a product or service. These can be negative or positive. Also, producers and consumers may neither bear all of the costs nor reap all of the benefits of the economic activity, and too much or too little of the goods will be produced or consumed in terms of overall costs and benefits to society. For example, coal plants cause air pollution that imposes costs on the whole society. Ecosystem services are available to all yet are not priced into the costs of producers who use these ecosystems.

The pricing of externalities is increasing seen as a company responsibility. For example, Conservation International, The Nature Conservancy, and the accounting firm PriceWaterhouseCoopers are currently developing methodologies to value ecosystems. A web-based tool called Artificial Intelligence for Ecosystem Services (ARIES) developed in partnership with the Gund Institute for Ecological Economics and with funding from the U.S. National Science Foundation, allows users to value ecosystems rapidly and on multiple scales, from local to global levels (ARIES, 2012; Chouinard, Ellison and Ridgeway, 2011). . We are seeing experimentation with tradable rights that are pricing carbon, for example. This experimentation is happening in Europe through the European Trading Scheme (Fogel, 2011; Convey and Redmond, 2007; Skjaereth and Wettestad, 2009). Unfortunately, many of these experiments have not worked well; for example, carbon prices in the EU have fallen over 65% in 2012 from 2011 (Williams and Torello, 2012).

We will see a distinct increase in experimentation with market solutions for traditional conservation and preservation approaches (Bureau of International Information Programs, 2008). For example, Reducing Emissions from Deforestation and Degradation (REDD projects) could offer a way forward. REDD involves some kind of incentive for changing the way forest resources are used. As such, it offers a new way of curbing CO2 emissions through paying for actions that prevent forest loss or degradation. These transfer mechanisms can include carbon trading, or paying for forest management (Freestone, 2011).

This market environmentalism argues for free market, property rights and tort law as the best means of preserving the environment (Friedman, 2009). While environmental problems may be viewed as market failures, free market environmentalists argue that environmental problems arise because laws override or obscure property rights and thus fail to adequately protect or define those rights (DeSoto, 2000). Also, laws governing class or individual tort claims provide polluters with immunity from tort claims or interfere with those claims in such a way as to make it difficult to legally sustain them (Anderson and Leal, 2001).

Free-market environmentalists argue that the best ways to protect the environment are to use tort and contract laws governing and protecting property rights and tort claims to protect the environment. Free market environmentalists believe that if affected parties can compel producers to compensate them, producers will reduce or eliminate the externality (Amran & Kulatilaka, 2009; Viana, 2010). Market proponents advocate changes to the legal system that empower affected parties to obtain such compensation (Howell, 2010).

We will certainly see a consolidation of standards, where certain standards will become the accepted methodologies for measuring companies, regions, and countries. Many researchers argue that companies that create their own sustainability standards risk accusations of greenwashing (Unruh and Ettenson, 2010). Therefore, we are likely to see more consolidation and use of a few standards. For example, the trend is mounting toward having the GRI become the major reporting methodology for companies (Global Reporting Initiative, 2012). Yet, specific company measurements will continue such as Nike's Materials Sustainability Index that provides designers with information on potential environmental impacts of products they use. UPS calculates carbon footprints, even at the individual package level.

We will see more and more global standards that can help transnational corporations manage various country-level business. The widespread growth of the transnational corporations necessitates that meaningful discussions of sustainable development include a critical analysis of the role of business in societies throughout the world (White and Baraldi, 2012). We may see new governance structures as global models develop and influence western capitalism. More and more transnational and national companies are reporting on nonfinancial data, using the GRI as the standard (White and Baraldi, 2012).

The development of green jobs and jobs related to environmental sustainability are increasing dramatically (Green and Dane, 2010). We are likely to see new job categories such as natural resource managers, technology employment where employees need to understand the new environmental devices, and jobs that service these new technologies. One estimate says that U.S. green jobs could rise by 40 million by 2030 (Walsh, 2008).

China will become one of the largest, if not the largest, economies in the world. This position of power will influence every aspect of our lives, including environmental sustainability. (Watts, 2010; Hessker, 2011; McGregor, 2010; Barboza, 2011; Seligsohn and Hsu, 2011). Foreign firms will find that certain resources are either more expensive or not available. Firms will be influenced by China's actions on the world markets. This influence is already pervasive yet in the future we will see this power increase.

China has become a dominant international economic influence with its enormous trade surpluses and with the world's largest foreign exchange reserves (Barboza, 2011). Chinese investment is part of their centralized political process (McGregor, 2012), but investment at the local level has a disorganized characteristic (Hessler, 2010). The price of Chinese economic growth has been a deteriorating environment. A recent State of the Environment report makes alarming reading (Watts, 2011). In its recent five year plan Chinese officials committed to address pollution, climate change and energy use (Seligsohn and Hsu, 2011). The challenge will be for domestic use of non-fossil energy investments that significantly reduce the use of coal while still meeting its citizens' expectations. China's use of nuclear power may be revised because of Japan's Fukushima disaster as happened in Germany.

Australia supplies coal to China at considerable profit. A current attempt to introduce a carbon tax in Australia and incentives for clean technology if successful will start to shift investment away from environmentally damaging coal extraction and use. Australians are aware of their vulnerability to water but many have yet to recognize the challenge that China brings. (Greenpeace, Australia, 2011) If China continues to rely on coal for its energy, it will face major ecological degradation, and significant reduction in its food supply. At some stage during this degradation Australia will have decreasing opportunities to supply coal. If the country moves to renewable energy use, then that may have a negative impact on the Australian economy (Howell, 2010). Firms within Australia will be pressured to change the ways they do business.

Beyond the organization, more attention will be paid to ecosystem clusters (Cohen, 2011; Howell and Cartwright, 2011; Brookings Institute, 2011). We will see more attention and development of clusters within regions. This focus has been the basis of all types of analyses of national competitiveness. For example, several researchers at Harvard University Business School have joined to study clusters within the United States, including how these clusters develop and create jobs (Porter and Rivkin, 2012).

Also, partnership and a mentality of partnering will be more common not unlike Unilever that has created a 45,000-strong army of entrepreneurs who sell its products in 100,000 villages in India. Nike has shared its Materials Sustainability Index with members of the Sustainability Apparel Coalition whose number account for over 30% of the global market for clothes and footwear.

Conclusions

Companies are essential to a sustainable future. The trends mentioned above will probably be matched with massive changes in regulations, country-based efforts and various industry-level developments of standards and practices. One hope is that we are in a mode of action to change current practices to ensure that the future is at least as viable as the present.

Companies have choices to support the balance among forms of capital: natural, human, manufactured and financial. Companies are powerful actors and they can lead the way for all of us to create a sustainable future.

Hopeful signs are the attention companies are paying to environmental outcomes and to working with various types of other organizations and industry associations to determine best practices to balance environmental, social and economic outcomes. Yet, time is of the essence – we must act now!

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