E X C H A N G E

Green Management Matters Regardless

by Alfred A. Marcus and Adam R. Fremeth

Executive Overview

Today, it is undeniable that a new enthusiasm exists for green management, not only among managers but among business school students, though this enthusiasm is just starting to be tapped in a more formal way in curriculum, instructional materials, and faculty careers and advancement. Green management matters for many reasons, but fundamentally it matters because people expect managers to use resources wisely and responsibly; protect the environment; minimize the amounts of air, water, energy, minerals, and other materials found in the final goods people consume; recycle and reuse these goods to the extent possible rather than drawing on nature to replenish them; respect nature's calm, tranquility, and beauty; and eliminate toxins that harm people in the workplace and communities. From a moral or normative perspective the obligation for green management is absolute, and whether it "pays" to be green is only partly relevant.

As the theme of the annual Academy of Management meeting "Green Management Matters" is introduced with some ambivalence ("For many of us, the connection between our work and the issue of environmental sustainability is not obvious")[1], answering the question of why green management matters is important. What is the connection between management and environmental sustainability?

Demands for green management spring from a variety of sources, including societal mandates incorporated into laws, treaties, and regulations (Marcus, 1980a) and fear of shunning, loss of sales, and decline in reputation if management does not have a tangible commitment to green management (Sexton, Marcus, Easter, & Burkhardt, 1999). Many claims have been made for green management, including a happier, healthier, and more productive workforce and the recruitment of more talented and creative employees. Indeed, nearly every major business in the world today has recognized the claims of green management not just as a defensive mechanism to retain legitimacy and the right to operate, but as a centerpiece of an organization's ongoing mission and reason for being. A cursory review of business Web sites reveals an astounding array of assertions about green management, some of them truly astonishing given that the businesses that make them (consider for instance, Exxon-Mobil) have less than totally clean histories.

All of this suggests that corporations are embedded in a particular culture and history that shape their symbols, words, meanings, and norms. Pragmatists thus suggest starting not with first principles, assumptions, or overarching theories

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[1] Quote taken from the Academy of Management Web site, http://meeting.aomonline.org/2009/.

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from economics or from presumed theoretical perspectives but from within "the direct practice of social life" (Dewey, 1925, as cited by Scherer & Palazzo, 2007, p. 1102). "This *pragmatic* argument . . . discussed in political and social theory . . . is acknowledged by postmodern authors . . . and . . . critical theorists," according to Scherer and Palazzo (2007, p. 1102). Today, it is undeniable that a new enthusiasm exists for green management. Green management (Ehrenfeld, 1999; Starik & Marcus, 2000) matters for many reasons, but fundamentally it matters because at this time in history and in this culture people expect managers to:

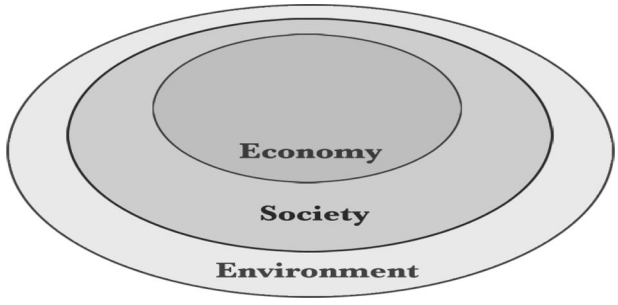
- Use resources wisely and responsibly.
- Protect the environment.
- Minimize the amounts of air, water, energy, minerals, and other materials used in the final goods people consume.
- Recycle and reuse these goods to the extent possible, rather than drawing on nature to replenish them.
- Respect nature's calm, tranquility, and beauty.
- Eliminate toxins that harm people in the workplace and communities.
- Reduce greenhouse gas emissions and avoid activities that do irrevocable damage to the climate.

The question is, why have these expectations become so widely accepted? Many theories have been advanced (Bansal, 2003; Delmas & Toffel, 2004; Marcus, 2005; Sharma, 2000; Vogel, 2005). However, the attention green management receives ultimately may spring from a very simple source. At least partially it derives from the common recognition people have at this time in this culture that the planet is crowded, that well-educated and wealthy segments of the population are aging, that poorer and younger segments are moving from place to place in search of opportunities they do not have in their own countries, that violence exists and has the potential to expand, that there is risk of pandemics, and that collectively we are putting increasing stress on the world's resources and threatening the globe's climate and other life support systems (Marcus, 2009a). More than six billion people currently inhabit the planet, and by the year 2050 this number is likely to grow to more than nine billion before world population is expected to plateau and fall off (Marcus, Islam, & Moloney, 2008). This fantastic flourishing of the human species puts an extreme strain on nature to adequately and equitably provide for the amenities humans need. Technologically, we are very sophisticated, which may allow us to expand the carrying capacity of the earth, but we also are divided into belligerent groups that make it hard for us to take collective action and sensibly address common problems. These problems are dire and involve not only protecting nature but a full array of additional issues often discussed under the rubric of sustainable development such as water shortages, drought, disease, education, human rights, poverty, and the adequacy of the world's food supplies.

Sustainable Development

The demands sustainable development makes on management are not just for this generation, but for future ones (Marcus & Kaiser, 2006). They are not just environmental but social and economic (see Figure 1). Sustainable development has been defined as "meeting the needs of the present without compromising the ability of future generations to meet their needs" (Brundtland Commission, 1987). The cornerstone is a conception of interlocking environmental, social, and economic spheres, whose development should be harmonious. Referred to as the "triple bottom line" (Elkington, 1994), these three spheres have been described as follows.

Figure 1
Sustainable Development: Three Overlapping Spheres



Source: Adams, W. M. (2006).

Environmental: Organizations create environmental impacts at various levels, including local, national, regional, and international. These occur in relation to air, water, land, and biodiversity resources. Some are well understood, while others present substantial measurement challenges owing to their complexity, uncertainty, and synergies.

Social: The social dimension of sustainability captures the impact of an organization's activity on society, including on employees, customers, community, supply chain, and business partners. Social performance is a key ingredient in assuring an organization's license to operate, and supports the organization's ability to deliver high-quality environmental and economic performance.

Economic: The ways organizations affect the economies in which they operate are captured and disclosed by conventional financial accounting and reporting.[2] Additional measures are required to capture the full range of an organization's economic impacts.

Sustainable development seeks a level of harmony among these realms, but invariably this is a harmony that is hard to achieve. The goal is to resolve the conflicts in a way that causes the least harm and respects the rights of present and future generations, but conflicting interests make it hard to realize this goal. Though measurement is still weak, many companies throughout the world, large and small, have signed on to voluntary guidelines and agreements that commit them to some form of sustainable development.

Does It "Pay"?

Management scholars have examined the voluntary nature of the organizational commitment to sustainable development (Ambec & Lanoie, 2008; Christmann & Taylor, 2001; Delmas & Marcus, 2004; King & Lenox, 2000), but much of the academic research has centered on the question of whether it "pays" (Majumdar & Marcus 2001; Marcus, 2005; Porter, 1991). From a moral or normative perspective the obligation to sustainable development is absolute, and whether it pays is not that relevant. Nonetheless, the attention given to whether it pays continues to be important, for if it pays then progress toward sustainability is likely to be more rapid. Businesses will not necessarily introduce green management practices because of the normative obligation, but because green management coincides with their economic interest to satisfy key stakeholders and thrive as profitable enterprises.

At one time many practicing managers regarded a preoccupation with green management almost exclusively as a threat. Today it is more widely accepted that green management can be profitable (Porter & van der Linde, 1995; Sharma, 2000; Sharma & Vredenburg, 1998). The conventional view was that green management imposed costs, slowed productivity growth, and hindered competitiveness. A revised view sees it as a driving force for corporate entrepreneurship and innovation (Cohen & Winn, 2007; Dean & McMullen, 2007). Green management can play a central role in the optimization of production processes and new-product development not only in pollution-sensitive industries, such as petrochemicals and electric power and manufacturing, but also in high-tech industries (King, 1999). Extracting more economic value from fewer natural resources and raw materials can improve existing products and services and lead to the development of new ones. Win-win solutions exist so that sustainable goals can be achieved at the same time as business objectives (Hart, 1995).

As observed in numerous accounts (Porter & van der Linde, 1995; Vogel, 2005), many firms no longer resist green management. Rather they try to incorporate and profit from it. Indeed, there is little doubt that for some companies, green management has created opportunities for competitive advantage. These companies not only have been able to lower costs and achieve cost leadership by pursuing environmental efficiency, but they also have pursued a differentiation or a focus strategy based on developing "green products" for niche markets (Shrivastava, 1995). An early example was 3M (Marcus, Geffen, & Sexton, 2002), which in 1975 decided to:

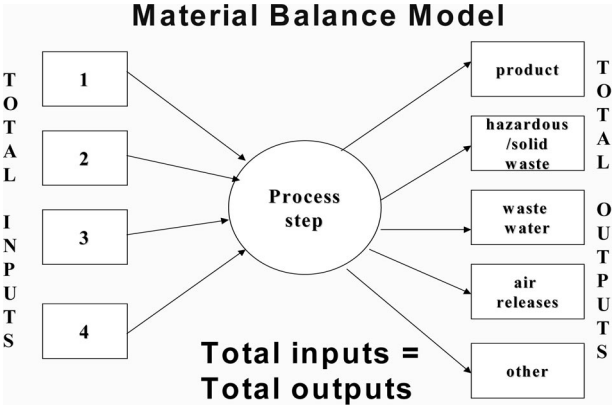
[2] See http://www.globalreporting.org.

- Solve its own environmental problems, preventing pollution at the source whenever and wherever possible.
- Develop products that have a minimal effect on the environment.
- Conserve natural resources through reclamation and other appropriate methods.
- Meet and maintain government regulations and assist government agencies in environmental activities wherever possible.

3M was best known for innovating in pollution prevention (P2), developing the first successful industrial program committed to source reduction through product reformulation, process modification, equipment redesign, recycling, and reuse. The program it created was called 3P, or Pollution Prevention Pays.

The 3M example was followed by other companies. In the 1990s, for instance, such companies as Novartis, Chevron, Dow, General Dynamics, IBM, and Monsanto inventoried their wastes and evaluated impacts, paying attention to product and process design, plant configuration, information and control systems, human resources, R&D, suppliers, and corporate organization (Marcus, 2005). Usually, these companies assembled a P2 team, determined a method for measuring progress, prepared process flow diagrams and material balance models (see Figure 2), and set up tracking systems for materials. They made operational and material changes, including material use substitutions and process and production changes. Companies made considerable progress. For example, in 1979 Novartis made only 30 units of finished products for every 70 units of waste, but by 2000, because of extensive efforts to prevent pollution, it produced 75 units of finished products for every 25 units of waste. Pollution, indeed, should be seen as a form of inefficiency that challenges firms to lower their costs (Porter & van der Linde, 1995). It is an indication of unneeded scrap, harmful substances, and energy not completely used, which creates no value for customers.

Figure 2
A Material Balance Model



Source: Marcus, A. (2005b).

Introducing New Products and Services

Response to the challenge of green management, however, has meant more than pollution prevention. In many companies it has involved the development of new products and services. But not all these attempts to introduce new products and services have been successful. Consider Ringer, a producer of natural and nontoxic pesticides and lawn and garden products (Marcus, 2005, 2009b). The company had innovative products that reduced harm, but the products and services were high-priced and worked more slowly than conventional ones. Faced with dedicated and resourceful competition from such companies as the Scotts Company, Ringer had problems gaining market acceptance and becoming profitable. After struggling during most of the 1990s, it went bankrupt.

In many cases, new product and/or service introductions were less than successful. Another example is Deluxe Printing (Marcus 2005a, 2009b). It won awards for the development of a new ink system called PrintWise that unlike soy inks, which rely on petroleum-based products and solvents, was pollution-free and vegetable-based and used water. To succeed in this business, Deluxe had to revolutionize its industry as well as transform itself. Never before had it manufactured or sold ink, yet it now had to sell PrintWise to its competitors. Like Ringer, Deluxe relied on a high-price strategy, one that its customers were not willing to accept. Although the company's core check-printing business was in decline, the challenges it faced in the ink business were so difficult

that it eventually sold PrintWise to a French company.

In contrast to Ringer and Deluxe, Osmonics successfully manufactured and sold filtration devices and equipment to other companies (Marcus 2005a, 2009b). Its products were used to recycle materials in manufacturing processes. In this way it played a role in pollution prevention in industries as diverse as electroplating and dairying. Though Osmonics had its ups and downs as a company it succeeded as an ongoing concern, ultimately being purchased by General Electric.

The challenge of sustainability has also stimulated new product innovation in the automobile industry (Marcus, 1996; Marcus & Geffen, 2005), a story still playing itself out today. Throughout the 1990s, auto companies struggled to commercialize less polluting products. In response to new clean-air legislation in several states, including California, they designed electric vehicles (Marcus & Kaiser, 2006). General Motors (GM) was a pioneer in developing electric automobiles and researching a wide variety of environmentally friendly, including solar-powered, vehicles. GM's EV-1 electric car entered the market on a lease-only basis as part of a pilot program. However, GM eventually discontinued the car. Instead it committed itself to hydrogen fuel-cell technology that would not be commercially available for some time. Hybrids (part electric and part conventional) then were marketed by other car makers, which emphasized their environmental benefits. Honda was the first to sell a hybrid, the Insight two-seater. By 2002, Honda had a hybrid version of the Civic. However, Toyota's Prius hybrid, introduced in the United States in 2000, proved to be more popular than either the Insight or the Civic; in 2006 Americans bought more than 350,000 Priuses. GM now is faulted for not following up on its original 1990s green car initiatives. At the 2009 Detroit auto show, it displayed a model of a new electric vehicle called the Volt (Taylor, 2009). However, the Volt was not yet available for purchase, and at an estimated $40,000 per car was not thought likely to be a commercial success. To what extent has GM's demise been related to its failures in developing an environmentally friendly car?

A failure to respond to the challenge of green management has consequences. How new fields (Marcus & Anderson, 2009) emerge, like the environmentally friendly vehicle, needs to be researched. The advantage of an all-electric car is that it gets by with a more efficient motor that does not need a host of parts such as the catalytic converter and spark plugs. The all-electric car requires less maintenance. However, there remain serious limitations. Among them are that the best batteries in existence have a range of only about 150 miles per charge (Keegan, 2009). Plug-in hybrids that use batteries and an internal-combustion engine to extend the vehicles' range may be a better option. Some people believe that there will be more than a million plug-in hybrid cars on U.S. roads by 2015. For this to happen, a new, multibillion-dollar battery industry, with the potential to generate thousands of jobs, must be created. The United States, however, lags far behind foreign firms in this area. Japanese companies NEC and Sanyo have been involved, as has the Chinese firm BYD, which boasts Warren Buffett as a major investor. The batteries in GM's Volt will come from the Korean company LG Chem. Ford's plug-in hybrid batteries are slated to be manufactured by a French-American joint venture, Johnson Controls/Saft. The United States has a number of small companies, such as Ener1, A123, Quantum Technologies, Altair Nanotechnologies, Tesla Motors, and ActaCell (backed by Google) that are doing advanced battery technology work, and though their technologies have some promise, they must catch up to the foreign competition in production.

Would a new business model stimulate the development of an all-electric car industry? A way to drive down the prices of batteries is to have customers lease them from a third party. The Israeli startup Better Place proposes to do this. Its business model is to own and maintain the batteries and sell subscription plans for their use (Keegan, 2009). It would operate like a cell phone company, selling miles instead of minutes. Better Place is creating conveniently located charging spots that use robotic arms to replace old batteries with new in a few minutes and is building charging stations in places such as Japan, Israel, Den-

mark, and the United States. Under the business model it proposes, in countries where gasoline prices are high, the lifetime cost of owning and operating an electric car would be similar to that of owning and operating a gas-powered vehicle. The role new business models will play in overcoming the challenges of green management is an important one that management researchers should take up (Marcus, McEvily, & Sutcliffe, 1994).

Acquiring Green Competencies

The opportunities for innovation in green management are great, but so too are the obstacles. As indicated, much of the academic work on green management centers on the question of whether it pays. Standard economic assumptions are that green spending imposes costs and slows productivity improvements, but some have argued that by inducing firms to economize, green spending can improve productivity (Porter, 1991). For instance, based on evidence from case studies, Porter and van der Linde (1995) concluded that spending on green management can enhance a firm's competitiveness. A considerable body of work now supports this idea that *under some circumstances* it does pay to be green (Gladwin, 1993; Hart, 1995; King and Lenox, 2002; Orsato, 2006; Russo & Fouts, 1997; Shrivastava, 1995).

What are these circumstances? Green management tends to pay when corporations acquire green management competencies. A literature on these competencies has emerged that mirrors the larger literature on corporate competencies (Marcus & Anderson, 2006; Marcus & Geffen, 1998, Marcus, Geffen, & Sexton, 2000; Marcus & McEvily, 1999; McEvily & Marcus, 2005). Competencies allow an organization to tie together complementary and cospecialized capabilities. Because they involve a complex harmonization of parts, they are difficult to imitate. For instance, a competency for quick response and flexibility in mass merchandise retailing starts with close ties to suppliers, but also includes understanding what is happening in the field—what is selling and what promotions are working—and maintaining detailed information about customer behavior and market trends (Stalk, Evans, & Shulman, 1992). Similarly, a competency in environmental management rests on a number of constituent capabilities. In the retail food industry, for instance, it may start with practices such as newspaper, plastic, and paper recycling but extend to consumer education, advanced recycling (recycling of wooden pallets, cooking oil, meat/fat/bones, or plastic bags), and offering environmental products and services. In the same way that a business competency is composed of many capabilities, so too is a green management competency. Constituent capabilities, built up over time, are brought together and related in complex ways, and the more complex the relations among them, the more valuable they are in providing competitive advantage. Many researchers have looked at competencies in green management (Aragon-Correa & Sharma, 2003; Hart, 1995; Shrivastava, 1995). Christmann (2000), for instance, has demonstrated a link between best practices in greening and complementary competencies in process innovation and implementation.

The roots of these green competencies are somewhat different from the roots of competencies in other areas of concern to business, however. General business competencies yield private benefits that firms can fully appropriate. Thus, firms are self-motivated to seek them. However, with regard to green competencies, there are likely to be other causes that bring them into existence (Marcus & Anderson, 2006). Because green management is a type of public good, whose full value a firm cannot entirely appropriate (Teece, 2007), government's role in the acquisition of green capabilities obviously is important (Marcus, 1980b).

Government's role, however, means more than just regulatory enactments that command firms to act and punish them for refusing to act in accord with government requirements. To capture the richness and complexity of the firm-government interface in green management, the focus must be on a broad array of public policies. These policies do not just refer to legally binding mandates imposed by the government on firms and other polluters, but to policies and programs such as voluntary government/industry agreements, joint research and development efforts, government information dissemination programs, grants, subsidies, transfers, taxes, and other program initiatives

(Fiorino, 2006; Vogel, 2005). It also must be recognized that firms do not merely respond to these policies. They exert considerable influence on the policy process and help create the policies to which they then must respond (Fremeth, 2009). A key aspect in green competency acquisition is the role that managers play in creating these policies.

There has been a considerable amount of research on the factors that influence green competency acquisition, but more could be done. What drives some firms to acquire these competencies sooner than others? What motivates the leaders and the laggards? What combination of public policies, social movement pressures, and market opportunities makes some firms more skillful in green management than others?

Does It "Pay" Any Less?

In the years since it was first declared that there might be an association between green management and competitiveness, management scholars have explored many arguments and offered a variety of frameworks that address this issue (Klassen & Whybark, 1999; Margolis & Walsh, 2003; Vogel, 2005). Yet critics still challenge the idea of win-win solutions and argue that in many instances, green management adds to the costs of business and there is no chance of economic payback (Walley & Whitehead, 1994). Though companies should seize on opportunities to increase shareholder value, ensuring compliance with governmental requirements often dominates the corporate agenda and eliminates the possibility of win-win solutions. Consumers have not been willing to buy a sufficiently large range of green products, and if the products cost more and do not work well, they will reject them. Being early to market does not guarantee success if firms are too far ahead of consumer tastes.

How different, though, is green management from the other strategic initiatives a firm may take? Indeed, there is risk in any strategic initiative in which a corporation might become involved. Here are three examples that suggest that green management may not be that different.

Strategic Planning. The value of strategic planning has been ardently debated within the management literature (Liedtka, 2001; Mintzberg, 1994). Proponents maintain that a well-developed plan provides a clear and structured approach to meet an organization's objectives. A structured approach mitigates the uncertainty of the external environment and positions the firm to better meet the threats and opportunities it encounters (Miller & Cardinal, 1994; Rogers, Miller, & Judge, 1999). Despite the alleged benefits of strategic planning, some argue that the time and organizational expense is value destroying (Mintzberg, 1994). Indeed, the evidence of whether strategic planning pays is mixed, and empirical results of a direct relationship between planning and performance are inconsistent (Armstrong, 1982; Boyd, 1991; Miller & Cardinal, 1994; Pearce, Freeman, & Robinson, 1987; Robinson & Pearce, 1983; Schwenk & Shrader, 1993).

Mergers and Acquisitions. While hundreds of deals close in a typical year and billions of dollars in cash or stock get exchanged, the answer to whether this activity enhances company value also remains elusive. A veritable mountain of research in both management and finance concludes that most of this activity is futile. The general warning of "buyer beware" persists because of poor valuation in the preacquisition stage and the hazards that lie ahead in the postacquisition phase. The consensus among most researchers is that acquiring firms typically lose value, but this well-accepted result has had little impact on the prevalence of mergers and acquisitions.

Internationalization. The costs and benefits of internationalization also have received substantial empirical attention in the management literature over the past decades, yet whether this type of initiative benefits firms also is controversial. While some studies have shown that internationalization leads to enhanced performance (Delios & Beamish, 1999; Grant, 1987), other studies have not had convincing results or have found no correlation (Morck & Yeung, 1991; Rugman, Lecraw, & Booth, 1985) or a negative one (Collins, 1990; Geringer, Tallman, & Olsen, 2000; Michel & Shaked, 1986).

Green management, then, may be little different from these other moves a firm's managers make. If there is risk in everything a corporation does, then the risk of green management is not

likely to be greater than the risk of other corporate initiatives.

Why It Still Matters

Important research still must be carried out about the circumstances under which it pays to be green. It can ask the question about the degree to which all corporate initiatives are just ritual. It can seek to understand the contextual and moderating factors that lead to success. For instance, to what extent do time and experience play a role in increasing the likelihood of success? Do firms face greater costs at the earliest stages of acquiring competencies that are overcome with experience and learning (Capar & Kotabe, 2003; Lu & Beamish, 2001)? Is the relationship between greening and financial performance U-shaped as opposed to linear, as it is in other instances of management initiatives (Daniels & Bracker, 1989; Geringer, Beamish, & daCosta, 1989; Hitt, Hoskisson, & Kim, 1997)? Relationships of this nature (Lu & Beamish, 2004; Thomas & Eden, 2004) need to be explored.

Yet in important ways green management is different from these other corporate initiatives. Regardless of whether it pays, society expects management to be green. If one accepts an absolute imperative that management must strive toward greening, then the question of whether it pays or not is not that relevant. Should nature have intrinsic value, the burden of proof is on humans to demonstrate minimum harm when they tamper with it (Staib, 2009). Utilitarians are less likely to accord to nature such an absolute right. When humans extract air, water, energy, minerals, and other materials and disturb fragile ecosystems there must be superior benefits to compensate for the damage. Certainly, efforts to carry out cost-benefit analyses are commendable. They are prudent and responsible, but utilitarian calculations are also onerous and complex, much more so than adhering to an absolutist stance of according nature intrinsic value. If utilitarians wish to get it right, the burden of proof is on them to understand the full costs and benefits, but rarely do they reach such total closure. Even with perfect knowledge they do not have reliable indicators to make good comparisons between hard-to-compare goals. An element of residual risk (Marcus, 1988) exists in whatever humans do.

Thus, the debate between the position that nature has absolute rights and the position that it is simply a commodity lies in the background of most green management decisions. A temporal dimension adds to the complexity. What discount rate should be applied when costs to the environment are immediate and benefits far off? If the carrying capacity of the earth is limited, then what humans extract from nature in the present is at the expense of future generations. If the harm is irreversible, under what circumstances do humans have the right to remove endowments from nature that future generations will need to sustain life? Green management is not simply a matter of whether it pays. There are these deeper implications.

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