

## CHAPTER 1

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# Developing the Business Case

The theme of this book is using the power of Six Sigma to solve the current global challenge of environmental sustainability. One of the most complex problems that organizations face today is achieving success through strategies that are compatible with and supportive of environmental sustainability. At the heart of this problem are the strategies that organizations pursue to manage the people who do the work and the real estate that supports those people. Key to building successful environmental sustainability initiatives is minimizing the negative impacts and improving the positive impacts that workers and buildings have on the environment.

Our intention is to show how typical Six Sigma define, measure, analyze, improve, and control (DMAIC) structures, such as program governance, project charters, transfer functions, measurement systems, risk assessment, and process design, lend themselves to environmental sustainability. We will use examples of how specific sustainability problems in areas such as carbon emissions, energy conservation, materials recycling, water use, and finance can be solved using Six Sigma tools. The goal of this book is to address key concepts that apply to all businesses. This is a business book, not a technical one. As such, we focus on examples more common to services companies and office buildings than to direct-emitter companies and manufacturing plants. In keeping with our Six Sigma framework, all good initiatives start with a valid business case.

Before we address developing the business case for corporate environmental sustainability programs, we will briefly scan the market context within which the investment decision is made.

At the macroeconomic level, policymakers are concerned with issues such as national security, job creation, and consumer price pressure. In this

context, social-political efforts to implement sustainable environmental policies gain traction by tying U.S. reliance on foreign oil to threats to national security but lose traction advocating for carbon pricing that could make households pay more for energy. To advance national climate-change legislation, all these issues need to be addressed. The interdependencies of these moving parts make this a difficult challenge. Organizations such as Ceres and Business for Innovative Climate and Energy Policy (Bicep) feel that putting a price on carbon is a change that would greatly increase investment and innovation in “decarbonizing” our economy. Carbon emissions are seen as an economic negative externality that gives emitters a free ride for their impact on climate change. Only by internalizing these costs, some say, will companies be incented to improve. If emissions stay the same and a price is put on those emissions, companies and their customers will have to pay more for the same levels of energy-intensive economic activity. If national economic growth in places such as China required cheap but dirty energy from coal and a price is put on emissions, China would feel that its growth could come only at a price higher than the developed world already enjoyed. The interlocking issues within economies, between nations, and across ecosystems can make one feel that unless all players agree to do something at once, the global community is at a stalemate. How to solve this prisoners’ dilemma?

The fact remains that as politically and economically complex as these tradeoffs are, natural resources such as the planet’s supply of water are finite, and the Earth’s biosphere is a closed system.

## Who Should Address This Challenge?

Responsibility for solving our biggest challenges lies with our biggest institutions: government, media, business, and academia, for example. Before the organizations that comprise these institutions will act, they need a compelling reason. The reason might start with a person. In environmental sustainability, as in other fundamental challenges, such as wellness, action can be catalyzed by the personal interest of influential people. (Organizations are, after all, composed of individuals.) People with positional power—a corporate director, a CEO, a senior manager, a manager of an investment fund—might have a personal passion for the environment, and the next thing you know, the company is moving. People with less

positional power but who wield influence in the company—a guru engineer, a scientist, a successful brand manager—also might possess a passion to push for change.

Passion is enough to get things moving inside a company. But be careful. As Lauralee Martin, chief financial officer (CFO) of global financial services at real estate company Jones Lang LaSalle, says, “Passion—strong, barely controllable emotions—can easily distract impactful change; but, if focused, it can power success. The Passionate will grab at symbolic solutions, even if ineffective.” In other words, don’t use passion as the fuel for your corporate sustainability program; use passion to fuel the efforts to develop the business case that generates shareholder value.

Passion can be an important ingredient in getting started because it creates a commitment to innovation and a desire to see new ideas become adopted successfully. But not all business leaders are looking at sustainability because they are passionate about the environment. Some businesses, particularly those in industries with high levels of direct environmental impact, such as mining, oil and gas, chemicals, forestry, and waste, have had environmental programs for decades. At the very least, these programs have developed as a compliance response to regulation. Leading companies have gone beyond compliance to develop environment and safety programs that have become part of the company culture. Recently, businesses also have been prompted by their customers to adopt stronger environmental practices. For example, large companies such as Walmart,<sup>1</sup> Procter & Gamble, and Kaiser Permanente have adopted supplier guidelines for sustainable practices and score their suppliers for progress made on efforts to reduce carbon emissions. In 2000, the Carbon Disclosure Project<sup>2</sup> was launched as a centrally organized effort to get companies to be transparent about carbon emissions, and by the end of 2009, almost 2,500 companies were participating. In 2010, the U.S. Securities and Exchange Commission issued guidance<sup>3</sup> to public companies saying that they should explain the impacts of climate change and climate regulation on their financial disclosure forms. Whether the initial triggers are intrinsic or extrinsic, there are a multitude of triggers that compel a company dialog to consider launching a formal environmental sustainability program.

Once a company commits to a discovery process for a sustainability program, one or more leaders will steward the sustainability agenda across the company. The best way to channel the passion of these leaders is into the

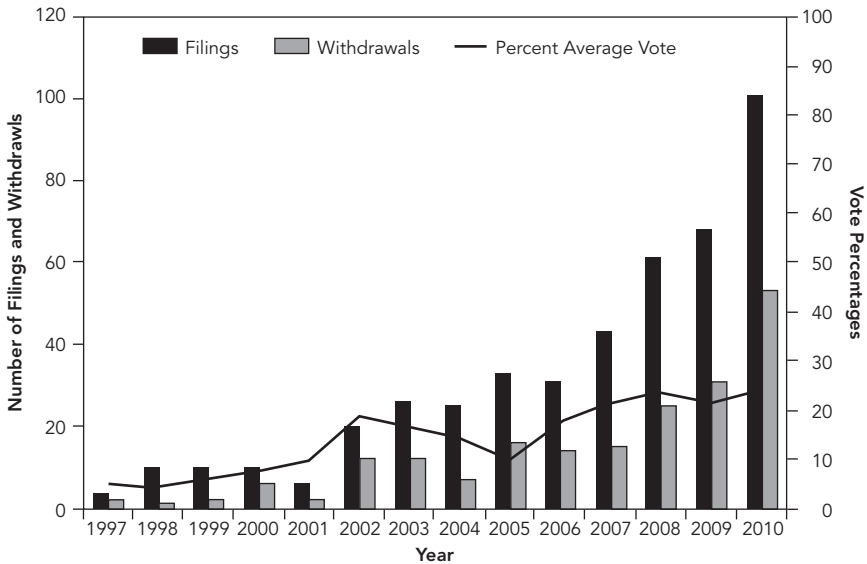
development of a business case that suits that company's industry and value chain. In the following two sections we will address development of the business case for sustainability at the company level as well as the business case for individual sustainability projects.

## **Developing the Sustainability Business Case at the Company Level**

When corporate executives feel that sustainability is closer to philanthropy than to core business issues—and many do—they take very little action in this area until an external force triggers the need. In one high-tech company's example, this external trigger arose when a large Europe-based customer demanded that the company put in place a program to measure, disclose, and reduce its carbon footprint. The high-tech company was in no position to refuse, and besides, the cost to measure the company's carbon footprint wasn't very much compared with the revenue from this customer. If your customer hands you lemons, make lemonade! This high-tech company went on to make its products more energy efficient, set and meet multiyear carbon-footprint-reduction goals in a very public way, and become a voice in the global discussion about climate change. Stakeholders and shareholders like it when a company can exhibit the discipline to say what it's going to do and then do it.

Another company we know, a regional bank, was on the receiving end of a shareholder resolution for disclosing its carbon footprint. (Shareholder resolutions on this topic have become more and more common over the past several years, as shown by Figure 1-1.)

In this particular bank, the resolution was a bit of a wakeup call but didn't resonate strongly with senior managers (at least not far beyond the CEO, some of his direct staff, and the Investor Relations Department). Management wasn't hearing from customers that this was very important to them. There have been some stutter-start attempts to explore the effort involved in a carbon-footprint baseline, but the initiative is languishing because the company leaders are not interested enough to figure out the business case. The bank is making good progress on energy-efficiency efforts because of the direct cost savings, but taking the incremental next step in converting kilowatts to carbon, the sustainability equivalent of a "while you're in there" project, has not been deemed worth the cost.



**Figure 1-1** North American shareholder resolutions on climate change. (Ceres/Bicep)

For the purpose of illustrating certain examples, we’ll be referring to a composite case study from a company we’ll call Apex. As an insurance company, Apex is not a heavy emitter of carbon, does not use large quantities of natural resources, nor put an extraordinary amount of hazardous waste into the physical environment. Because of the personal interest—passion, even—of a senior leader, though, Apex initiated a journey into sustainability. And because of the way the company went about it, we suggest that it is an excellent example of building a business case for a sustainability program. Our Apex vice president had plenty of access to the most senior leaders of this company. And he’d been at the company a long time, enjoying a stellar reputation. This vice president could have used his access and relationships to sway other leaders toward a greener future and probably would have seen some success in doing so. But that’s not what he did.

First, this Apex vice president started with the basics. He formed a hypothesis that improving the environmental performance of the company was important for Apex to compete as a business. The hypothesis needed to be tested. There were three influential factors that tugged at Apex to go in a

greener direction, but no one knew if the factors were strong enough to support a real business case. The factors were

- ▲ *Workforce—the interest of current and potential employees.* How strongly did they feel about working for a company that is friendly to the environment?
- ▲ *Customers—the interest of clients and potential clients.* To what degree were they incorporating green into purchase decisions?
- ▲ *Regulations—the constraints and opportunities afforded by government regulation.* How might Apex be affected by emerging regulations?

Of course, the Apex vice president did not expect to uncover perfect information in all these areas. He wasn't interested in analyzing the question into perpetuity either. But he knew that without the support of a business case, the Apex sustainability program, at best, would blindly follow whatever idea looked popular in the market and, at worst, become a short-lived fad that would sap the company's credibility. It was critical to define the *why*. It took two years of fact collection and microtests to prove the hypothesis and define the Apex sustainability program roadmap in a way that other company executives could understand and support.

## **Workforce**

The Apex vice president, with help from a staff member or two, reviewed public data about the preferences of workers in America. They found research that showed that from 1995 to 2008, the portion of American workers who were either interested in or committed to working for a green company had grown to a majority. Some employees, especially workers under age 35, considered the ecofriendliness of prospective employers in evaluating job offers. Various surveys from employment Web sites and from the Society of Human Resource Managers showed healthy percentages of green preference in new job selections and in staying at a company. By 2009, 600 schools had signed on to the American College and University President's Climate Change Commitment, which covers not only reducing the direct environmental impact of campus operations but also requires integrating environmental sustainability into the curriculum. Current and future workers were being educated on sustainability and finding it important.

## Customers

It wasn't very hard for the Apex vice president to find evidence that customers expected Apex to show evidence of good environmental practices. By reviewing requests for proposals (RFPs) from potential customers, the vice president was able to establish that some (but not all) customers were asking for information about Apex environmental practices. Information requests ranged from questions about Apex's initiatives, policies, and participation in third-party organizations to questions about how Apex could improve the customer's environmental impact.

The following list represents some of the questions our clients and we see in RFPs:

- ▲ Please detail your corporate environmental goals and policy.
- ▲ What awards and recognition has your company received for environmental performance? What certifications has your company attained?
- ▲ Describe the policies and procedures that your company uses to ensure minimum impact on the environment.
- ▲ Describe your company's commitment to international sustainability frameworks such as the Hanover Principles.
- ▲ Is your company participating in the Carbon Disclosure Project, Global Reporting Initiative, or similar efforts?
- ▲ How is environmental performance incented and governed at the board of directors and/or at the top executive level in your company?
- ▲ How does your company account for greenhouse gas emissions?
- ▲ How does your company develop (and maintain) energy policies, incentives, and awareness programs to encourage energy conservation?
- ▲ How can your company help our company identify opportunities for tax incentives or utility company rebates?
- ▲ What processes has your company certified using ISO 14000?

Apex knew that to seek buy-in from executives in the company, a laundry list of RFP questions would not be very effective. Instead, the Apex vice president summarized his findings in a simple profile of "green customer expectations" so that these features would be the foil for future discussions. The green customer expects Apex to:

- ▲ Demonstrate executive commitment to sustainability, backed up by policy

- ▲ Report on environmental goals and progress (most likely in areas such as carbon footprint)
- ▲ Manage sustainability up and down the supply chain
- ▲ Have a climate-change mitigation strategy
- ▲ Participate in external organizations committed to mitigating climate change or to helping the environment

In presenting this profile, the Apex vice president was transparent that this represented a small proportion of Apex customers. Backed by research, however, he now knew what to look for to determine if this was a growing trend, not to mention that the list of customer expectations helped to form design criteria for a sustainability program.

### *Regulations*

In addition to looking at trends in local, state, and federal regulations, it's a good idea to identify the regulatory bodies that affect your company and industry. Since Apex is an insurance company, one important such body is the National Association of Insurance Commissioners (NAIC). The NAIC recently declared its intent to require insurers to submit an annual climate-risk disclosure survey starting in 2010. This issue of disclosing climate risk was getting traction in the market, not just in insurance. As a directive, disclosing risks seems straightforward. In order to do this, though, companies must identify scenarios where they could be exposed to energy supply fluctuations, flooding, changes in weather patterns, and the like. Some of these factors could pose risks upstream in the company's supply chain (think of the potential impact to Starbucks or to Levi Strauss of drought in countries that produce coffee or cotton). Because these issues can be very localized, a company doing business in markets across the United States or around the world has its work cut out for it.

By reviewing information from sources such as the U.S. Green Building Council, the Pew Center on Global Climate Change, and the Council of State Governments, Apex discovered that 42 states had passed new legislation or had pending legislation regarding green building codes, greenhouse gas, and landfill restrictions. Although some municipal codes offer opportunities such as expedited building permits for green building commitments, most new regulations introduced additional constraints on company operations or additional costs for monitoring and reporting. As

a services business, Apex wasn't accustomed to environment-related regulations, as would be a manufacturing or chemicals or mining company. (In these latter companies, leadership on sustainability programs often emerges from the environmental health and safety (EH&S) organization. However, EH&S groups also tend to possess a strong compliance mentality, which can make it difficult for companies to see sustainability as an opportunity for innovation and growth.)

Developing a focused business case—from the outside in—becomes part of an iterative process. Because there are so many stakeholders who care about the company's environmental and social performance, formal processes to engage stakeholders have become a de facto part of sustainability programs. At the early stages of setting up the business case, we recommend not overengaging with stakeholders. Too much input can become noise, and too many requests can become difficult to prioritize. However, it is important to engage company decision makers to get buy-in for launching the program. Make the case succinctly, and propose some simple initiatives that have a clear return on investment (ROI). Taking action on the first initiatives will build further support for the program and earn the right to expand scope and scale—and the funds generated from early success can be used to launch next-generation initiatives. We work with one energy company that launched its internal energy-efficiency program with a pool of capital dollars for funding energy conservation projects. The pool is used as an internal investment program with its own payback criteria. Projects that are funded from the pool reimburse the fund, which, as it grows larger, can fund more projects.

Matching centralized funding with centralized expertise and project-approval oversight can be a powerful tool for ensuring that the right projects get done and for aggregating the results. When the company is very large and/or has a distributed supply chain including many partners, the central pool of funds and expertise may be the only way to give proper attention to complex projects such as renewable power generation. But centralized funding is not just for hard-dollar-return projects. We also have seen companies that use a central pool of funds for employee volunteer projects. At Intel Corporation, for example, through its Sustainability in Action program, the company invites employees to apply for project funding of "passion projects" that make a difference in the community. In 2009, Intel funded nine employee volunteer projects to encourage innovation in

environmental community service, including a community recycling project in Russia, environmental education sessions in schools in Ireland, forest cleanup and conservation activities in Oregon, and a city air-quality monitoring project in Arizona.<sup>4</sup>

Over time, the business case that launched your company sustainability program will be augmented by new goals that operationalize the desired benefits. These initiatives will change the company's role in its community and in the market. As new goals are set and the program expands, expect the list of spectators to grow as well. (In fact, some companies avoid building a robust sustainability program because they do not want to attract attention from stakeholders that may use negative publicity in support of a cause, but in a way that harms the company. Fortunately, many nongovernmental organizations have realized that it is in their best interests to be engaged and constructive.) Engaging stakeholders of different types can generate ideas and future initiatives. And even if your company chooses not to invest in the programs desired by stakeholders, simple engagement can have benefits in and of itself. We deal with the issue of stakeholder management in Chapter 9.

In their book, *The Balanced Scorecard: Translating Strategy Into Action*,<sup>5</sup> Robert Kaplan and David Norton suggest that effective corporate strategies are built from four perspectives:

1. *The financial perspective.* To succeed financially, how should we appear to our shareholders?
2. *The customer perspective.* To achieve our vision, how should we appear to our customers?
3. *The internal business process perspective.* To satisfy our customers, at what business processes must we excel?
4. *The learning and growth perspective.* How do we build capability to accomplish this plan?

Categorizing the research collected during the initial discovery phase into these areas generates important discussion among the participants in the sustainability effort. By setting quantifiable, overarching goals in each area, the team can show how the proposed sustainability program would add value to the company's performance. Future projects then can be focused on solving for the quantified goals.

In 2007, Procter & Gamble announced a series of sustainability goals, including one to “develop and market at least \$50 billion in cumulative sales

of sustainable innovation products” by 2012.<sup>6</sup> This is a strong statement to shareholders about how sustainability will be part of the company’s financial success.

Method, a San Francisco–based consumer products company, was started with a clear mission in the customer perspective category: “To make products that work, for you and for the planet, ones that are as easy on the eyes as they are on the nose.”<sup>7</sup> The theory is that customers who value these principles will gravitate toward Method products (and that talented people who believe in these values will want to work at Method).

Once a company decides to adopt a sustainability program, many start with internal business processes because these processes are straightforward to control. In many cases, companies that want to sell green products and services also feel that it is important to first get their internal house in order. It is common to see first-generation initiatives to reduce energy and water consumption as well as waste generation. Two of Walmart’s environmental goals are in this area: To be supplied 100 percent by renewable energy and to create zero waste.<sup>8</sup> By looking at processes such as production, transportation, and facilities maintenance, companies can make great progress in reducing the environmental impact of internal operations.

Developing corporate strategy with learning and growth in mind is not a common explicit goal. In some ways, though, this can be the most important investment a company makes because without it, the company likely will find itself moving resources around, reacting to trends, and underfunding the business volume needed to create revenue. A company can’t expect to build new sustainable products if it doesn’t create new skills and knowledge among its product-development organization. A company can’t expect to reduce energy use if it doesn’t help its employees to know what to look for. New technologies that help companies track and report carbon emissions are important capabilities builders. A recent study<sup>9</sup> by GreenBiz.com and Groom Energy estimates that worldwide unit sales of enterprise carbon accounting software are rising from 50 in 2009 to a projected 1,500 in 2011. Companies are building capabilities at an accelerated pace.

As company objectives are set in these strategic areas, Six Sigma teams can be mobilized to make progress across the company. Some projects just should be done—not every idea needs to be taken through the DMAIC process. Where there is an element of complexity, where discovery is needed

to uncover critical success factors, and where there is potential to affect the customer experience, though, black belts should seek to develop business cases for sustainability projects.

## Developing the Sustainability Business Case at the Project Level

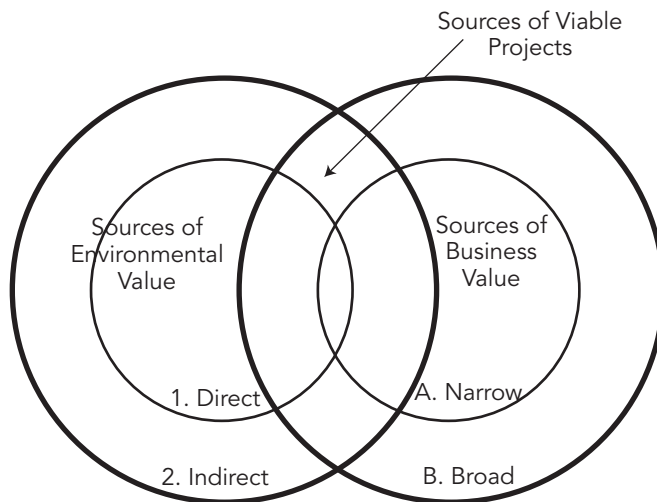
Consistent with Six Sigma improvement projects in other functional areas, the best sustainability projects will be in alignment with company priorities and will be driven by data. In the project charter, the business case is a summary of the project rationale and a description of the clear line of sight to top-level drivers of business value. Using performance data to select projects likely will be a challenge if the company sustainability program is new (see Chapter 4). However, collecting a reasonable sample of data and facts is the best way to support the project proposal and create a basis for discussing the merits of the project over other potential investments when presented for approval. Keep in mind that projects to improve the company's sustainability performance will compete for resources with projects for other purposes.

It can be particularly difficult to get approval for operational-efficiency projects—even projects with good payback periods—when the same resources could be allocated to projects that expand production capacity. On the other hand, if your company is a consumer-products business with a strong emphasis on brand, projects with weak hard-dollar-payback periods might be strengthened if the anticipated outcomes have good public relations value. We have seen this go both ways—at one company, investments in a new solar array were approved in part because of the reputational value of such a high-profile project. At another company, the business case for proposed capital improvements to improve energy efficiency to attention-getting levels could not include public relations value because the company would not publicize results not tied to achievements in *product* performance.

Leading marketing companies have divergent opinions about the degree to which consumers in the United States care about how green a product is.<sup>10</sup> Whereas Frito Lay promotes the fact that some Sun Chips are made in a plant<sup>11</sup> that is powered by solar energy that's better for the planet, Proctor & Gamble promotes Tide Coldwater<sup>12</sup> as a product that saves consumers

money by reducing the energy required to wash clothes without being explicit about benefits to the planet.

It can be difficult to build the business case for a sustainability project solely on the merits of an improvement in company environmental impact (unless it is to comply with government regulations). For example, we worked with senior managers at one company who were interested in projects that would be inspirational to employees. One of the options explored was to reduce food waste from company cafeterias. In the United States, a large portion of food is discarded.<sup>13</sup> When organic material ends up in a landfill, it decomposes and gives off methane,<sup>14</sup> a greenhouse gas, 21 times more insulating in the atmosphere than carbon dioxide. From an environmental standpoint, reductions in this area would be important. From a business-value standpoint, though, the case was difficult to make. Company managers had the data to show that food waste was an important issue, and they even knew other companies that had addressed it successfully, but the business case based on reduced waste hauling costs could not win approval without the extrapolated financial value of improved landfill diversion rates and improved employee relations. These latter values were too abstract compared with the well-defined costs of food dehydrator equipment and other resources. We suggest that there is a simple Venn diagram at play here (Figure 1-2).



**Figure 1-2** Overlapping environmental value and business value.

In this Venn diagram, one circle represents the set of drivers of environmental value; the other represents the set of drivers of business value. Of all the possible sources of environmental value (e.g., carbon footprint, pollution, extraction, contamination, deforestation, and the like), the areas where the company makes a direct impact are part of the inner circle (1-Direct), whereas others are part of the larger circle (2-Indirect). As we discuss in Chapter 3 and in other parts of this book, for most companies, electricity use by itself results in an indirect environmental impact but receives a lot of attention because energy conservation is a direct source of business value (cost savings).

The direct environmental impact of electricity use happens at the source of power generation, and if fossil fuels are burned, one category of impact is carbon emissions. In our Venn diagram, a project that reduces electricity use has an indirect environmental benefit (reduced carbon emissions) and a direct business value (operating expense reduction from using less electricity). Reduction of paper use could be a source of direct environmental value (reducing waste to landfill) as well as a source of indirect environmental value (reduced energy consumption and reduced harvesting of trees) and a source of business value by reducing money spent purchasing and disposing of paper.

If your company is interested in sustainability only as it pertains to cost savings, the set of business-value sources is relatively small (A-Narrow). If the company uses sustainability as a driver of product sales or brand value, the circle is larger (B-Broad). In any case, sustainability projects will not likely be approved if they are not conceived from the overlap between the two circles. The company sustainability lead might consider it his or her job to create as many connections as possible between environmental value and business value, making the circles as large as possible for their company. Sources of business value at your company might include

- ▲ Revenue growth
- ▲ Expense reduction
- ▲ Cost of capital
- ▲ Brand-recognition improvement among consumers
- ▲ Improved reputation among stakeholder groups
- ▲ Development of a leadership position (e.g., setting direction or pace in the company's industry)

- ▲ Market expansion abilities (by geography and/or by industry type)
- ▲ Improved speed to market
- ▲ Product quality improvement (e.g., reduction in environment-related defects, realization of environmental opportunities)
- ▲ Risk management
- ▲ Company culture and/or improving employee retention
- ▲ Ability to attract new talent

A special area of consideration is reserved for valuing negative externalities. In this area, the business case is made by putting a financial value to impacts that otherwise sit in the Environmental Sources of Value circle. The most common way this happens is by purchasing carbon credits. Companies that have committed to becoming carbon neutral will work to become as energy efficient as possible but then must either buy or build a supply of renewable carbon-free power or purchase carbon credits to offset the carbon emissions from energy used by the company. The cost of the credits amounts to a sort of self-imposed tax on the organization. Therefore, any improvement projects that reduce energy consumption from fossil fuels also will reduce the “tax.” For companies that purchase carbon credits, reduction in these costs should be included in the business case for energy reduction–related projects.

The leaders of the sustainability program define these boundaries, get executive buy-in for the boundaries, and activate Six Sigma teams against the right set of opportunities. When drafting the charter for an improvement project, the business-case section should include the direct/indirect and narrow/broad value drivers that are relevant to the company’s sustainability goals.

The business case for an individual Six Sigma project should tie back to the business case of the enterprise-wide sustainability program and its reflection of the company’s values and financial statements. Don’t ignore competitive issues. If your company is looking for a leadership position in sustainability, you might consider your relative placement on rating systems such as the Carbon Disclosure Project, the Newsweek Green Rankings list, or the JustMeans Global 1000. If your corporate sustainability program uses these systems as a scorecard or uses membership in the Dow Jones Sustainability Index as a goal, then projects that improve performance against the requirements of these programs should be given fair consideration.

We also recommend researching the accomplishments of other companies to support the opportunity targeted by your project. For example, a large part of the corporate carbon footprint for services companies usually includes corporate travel on airplanes. At one financial services company with which we worked, corporate air travel accounted for about 10 percent of the company's carbon footprint. At another company, Cisco, air travel accounted for just over half the 2006 carbon footprint.<sup>15</sup> Over the coming three years, Cisco would deploy changes to business process, management practices, and culture, along with a portfolio of high-definition video teleconference systems, all aimed at reducing travel by up to 40 percent. The carbon reduction, cost savings, and marketing value for Cisco Telepresence systems added up to millions of dollars. For some companies, the business case for travel reduction might be less desirable or more difficult to realize. But the thought process for multiple connections between environmental and business values applies universally.

Developing the business case for an energy-efficiency project at any company is usually easy because even though the environmental value drivers are indirect, these drivers are part and parcel of the highest-profile issue in sustainability today—climate change through carbon emissions. Energy consumption is also easy for executives and employees at all levels to understand because everyone pays for energy at home. The business-value drivers of energy conservation are usually direct cost savings. And the reduction in carbon footprint has stakeholder reputation value. In order to establish the business case for energy-efficiency projects, the black belt project manager needs to know the current energy consumption volumes and rates (data here are also relatively easy to get) and some idea of the sources of current energy inefficiencies. In office buildings, typical areas for savings include lighting, heating, and cooling systems. Once the black belt confirms the utility rate structure and whether any past improvement projects have been done in these areas, a project business case generally can be made for improving the energy efficiency of a building or group of buildings. Benefits are likely to be cost savings and carbon-footprint reduction.

Another common topic for an improvement project is reducing office waste that goes to landfill. To establish the business case for the project, the black belt looks first to establish that there is a problem worth assigning resources to solve. In the environmental circle, value comes from both impact on land where the waste goes, as well as impact on land that provides

the resources to create the material to begin with. There are also indirect environmental impacts because office materials require energy to produce and to transport. Given that trash from the office (e.g., paper, cardboard, toner cartridges) has to go somewhere after it is used, it is easy to see the motivation for preventing the accumulation of materials in landfill. And the more paper that is used in the office, the more natural resources are required to produce that paper. On the business side of the equation, if waste can be reduced, then costs to haul waste away from the office should be reduced, cost to procure paper should be reduced, and employee satisfaction from working for a company that recycles should be improved. Recycling is a top sustainability issue among employees at every company we talk to. There is, however, a lot of variation from company to company in willingness to invest labor and other resources into solving this problem. Once a solution is designed, keep in mind that labor also will be required to bring the solution to scale across a large organization.

Before you limit your thinking to energy-conservation projects or recycling, consider that your colleagues at work are passionate about many more issues than these two. Consider the adage, “It’s better to work to live than to live to work.” We’re seeing more and more singularity between the roles that individuals play as workers, consumers, citizens, and family members. In other words, behind those roles, we are one person, the same person at home and at work. The person who cares about recreation and art and science is the same person who works in the accounting or engineering department. People the world over spend billions of dollars and countless hours engaged in sports and entertainment and going to museums. This suggests that your sustainability program has a chance to make work more active, fun, and creative because that’s what people like to do anyway.

Pushing the limits of action to make your company sustainable is an exercise in personal leadership. There are endless models of personal leadership, but consider one good example, *The Leadership Challenge*, by Jim Kouzes and Barry Posner,<sup>16</sup> wherein the authors discuss what they consider the five fundamental practices of leadership:

- ▲ Challenge the process.
- ▲ Inspire a shared vision.
- ▲ Enable others to act.
- ▲ Model the way.
- ▲ Encourage the heart.

Managing your company's use of natural resources could be approached as an administrative task with many barriers. And changing light bulbs in your office to make it more energy efficient can be personally satisfying. But expanding the circles of value creation for your company, applying a more collaborative approach across functional boundaries, and working up and down the sustainability transfer function to activate other intrinsically motivated individuals is more like a mission and less like a job.

## Chapter Summary—Key Points

- ▲ Solving for environmental sustainability at the global-systems level requires multiple players to make contemporaneous decisions. Responsibility for solving our biggest challenges lies with our biggest institutions.
- ▲ Sustainability strategies should be driven not by passion but from a strong business case—where financial and strategic drivers of shareholder value overlap with drivers of environmental value.
- ▲ At the company level, research and develop the business case for initial investments in sustainability by understanding the expectations of your workforce, your customers, and your regulators.
- ▲ Every Six Sigma business-improvement project requires a business case. Use performance data that reinforce the shareholder value as well as the environmental value of the project. Collect data and facts in order to shape the business case.
- ▲ Keep in mind that even strong sustainability improvement projects will be competing for resources against projects for other purposes, for example, product development.
- ▲ Leading companies have divergent views about how strongly consumers can be influenced by environmentally friendly product attributes.
- ▲ Assigning a dollar value to metric tons of carbon can assist in evaluating the ROI for sustainability projects.
- ▲ Sustainability program leaders should work with other company executives and Six Sigma project champions to establish the rules for how project business cases can be quantified, for example, what is the value of carbon abatement or of improved employee engagement? Or what is the value of exceeding the sustainability performance of your competitors?

- ▲ The business case for individual Six Sigma projects should reinforce the business case for the company sustainability program.
- ▲ There is a growing trend for singularity in work-life roles: The same people play the role of worker, consumer, citizen, and family member. Your sustainability program has a chance to grow company culture and your ability to attract and retain talent by making work active, fun, and creative.

## Notes

1. Walmart President and Chief Executive Mike Duke (July 16, 2009): “Customers want products that are more efficient, that last longer and perform better. And increasingly they want information about the entire life cycle of a product so they can feel good about buying it. They want to know that the materials in the product are safe, that it was made well and that it was produced in a responsible way.”
2. Carbon Disclosure Project: [www.cdproject.net/enUS/WhatWeDo/Pages/overview.aspx](http://www.cdproject.net/enUS/WhatWeDo/Pages/overview.aspx).
3. Securities and Exchange Commission 2010 guidance press release: [www.sec.gov/news/press/2010/2010-15.htm](http://www.sec.gov/news/press/2010/2010-15.htm); final rule: [www.sec.gov/rules/interp/2010/33-9106fr.pdf](http://www.sec.gov/rules/interp/2010/33-9106fr.pdf).
4. Intel Corporation 2009 Corporate Social Responsibility Report, p. 87.
5. Robert S. Kaplan and David P. Norton, *The Balanced Scorecard: Translating Strategy Into Action* (Boston: Harvard Business School Press, 1996).
6. Procter & Gamble announced five strategies related to sustainability: products, operations, social responsibility, employees, and stakeholders. “Sustainable Innovation Products are included if they have launched in market since July 1, 2007, and have a greater than 10 percent reduction in one or more of the following indicators without negatively impacting the overall Sustainability profile of the product: A. Energy, B. Water, C. Transportation, D. Amount of material used in packaging or products, E. Substitution of nonrenewable energy or materials with renewable sources.” [www.pg.com/en\\_US/sustainability/strategy\\_goals\\_progress.shtml](http://www.pg.com/en_US/sustainability/strategy_goals_progress.shtml).
7. Method set goals to create home products that are clean, safe, green, well designed, and have appealing fragrance; [www.methodhome.com/methodology/our-story/we-are](http://www.methodhome.com/methodology/our-story/we-are).
8. Walmart’s environmental goals are “To be supplied 100 percent by renewable energy; To create zero waste; To sell products that sustain people and the environment”; <http://walmartstores.com/sustainability/>.
9. Groom Energy and GreenBiz.com, *Enterprise Carbon Accounting: An Analysis of Corporate-Level Greenhouse Gas (GHG) Emission Reporting and a Review of*

*Emerging GHG Software Products*, January 19, 2010. Groom Energy Solutions and Pure Strategies (Groom Energy: Salem, Massachusetts; Greenbiz.com: Oakland, CA); [www.groomenergy.com/files/ECA\\_Jan11\\_update\\_sample\\_free\\_excerpt.pdf](http://www.groomenergy.com/files/ECA_Jan11_update_sample_free_excerpt.pdf). GreenBiz.Com.: [www.greenbiz.com/product/enterprise-carbon-accounting-jul-2010](http://www.greenbiz.com/product/enterprise-carbon-accounting-jul-2010).

10. Procter & Gamble and Ipsos Public Affairs findings from their 2010 Consumer Conservation Survey: “About 74 percent of consumers say they would switch to another brand if it helped them conserve resources without having to pay more. About 37 percent say the reason they don’t lead a more environmentally friendly lifestyle is a lack of enough information about what to do. About 58 percent say they would be at least very likely to change the way they perform daily chores if it helped them reduce waste, save energy and save water at home.” [www.prnewswire.com/news-releases/pg-launches-initiative-to-make-conservation-of-natural-resources-more-user-friendly-87640202.html](http://www.prnewswire.com/news-releases/pg-launches-initiative-to-make-conservation-of-natural-resources-more-user-friendly-87640202.html).
11. [www.sunchips.com/healthier\\_planet.shtml](http://www.sunchips.com/healthier_planet.shtml).
12. [www.tide.com/en-US/product/tide-coldwater.jsp](http://www.tide.com/en-US/product/tide-coldwater.jsp).
13. University of Arizona UA News: “According to recent statistics cited by the U.S. Environmental Protection Agency, about 25 percent of food in America is discarded. A 2004 study released by former University of Arizona anthropologist Timothy W. Jones estimated that 40 to 50 percent of all food ready for harvest never gets eaten. Jones’ study went on to say that nationwide household food waste alone added up to \$43 billion annually. On the environmental side of the equation, Jones estimated that reducing food waste would be beneficial through reduced landfill use, soil depletion, and applications of fertilizers, pesticides, and herbicides.” Available at <http://uanews.org/node/10448>.
14. U.S. Environmental Protection Agency: “Methane (CH<sub>4</sub>) is a principal component of natural gas. It is also formed and released to the atmosphere by biological processes occurring in anaerobic environments. Once in the atmosphere, methane absorbs terrestrial infrared radiation that would otherwise escape to space. This property can contribute to the warming of the atmosphere, which is why methane is a greenhouse gas. Methane is about 21 times more powerful at warming the atmosphere than carbon dioxide (CO<sub>2</sub>) by weight.” Available at [www.epa.gov/methane/scientific.html](http://www.epa.gov/methane/scientific.html).
15. Cisco Announces Carbon Reduction Initiatives, September 21, 2006. Available at [http://newsroom.cisco.com/dlls/2006/ts\\_092106.html](http://newsroom.cisco.com/dlls/2006/ts_092106.html).
16. Jim Kouzes and Barry Posner, *The Leadership Challenge*, San Francisco, California; Jossey-Bass Inc. (1995).