CHAPTER 1

Introduction to Sustainable Business

Sustainable Companies Gain the Upper Hand
According to research in Harvard Business Review, sustainability is now the primary driver of business innovation.1 Sustainable business means balancing social, economic, and environmental considerations in business decision-making; stewarding the natural resource base upon which the business depends; giving back to the communities in which business is done; and promoting long-term value-creation for the company’s investors. If sustainability were merely a business fad, the global economic recession of 2008 would have caused sustainable investment to decline as business leaders looked to cut unnecessary expenditures. However, according to research in MIT Sloan Review, sustainability spending not only survived the downturn but from 2009 to 2010, the number of companies increasing investment into sustainability more than doubled, growing from 25% to 59%.2 Indeed, all industries have shown an increased interest in sustainability in recent years, especially in commodities, chemicals, consumer products, industrial goods, machinery retail, and conglomerates.3 Of the companies investing in sustainability, researchers have divided them into two categories according to commitment level: “embracers” and “cautious adopters.” Embracer companies are “implementing sustainability-driven strategies widely in their organizations and have largely succeeded in making robust business cases for their investments.”4 Cautious adopters put into place sustainability initiatives without integrating sustainability into core strategy. Regardless of investment level, business leaders from virtually every industry sector agree, “acting on sustainability is essential to remaining competitive.”5 Some of the competitive advantages enjoyed

“Sustainability can be about much more than our response to a crisis: It is an opportunity; it is a set of behaviors integrated into an organization’s culture[. . .] Sustainability is about much more than our relationship with the environment; it’s about our relationship with ourselves, our communities and our institutions.”

—Dov Seidman, LRN (2007)

LEARNING OBJECTIVES
After reading this chapter, you should be able to:
1. Define sustainability and explain its relevance to business.
2. Articulate how global trends drive sustainability in the private sector.
3. Distinguish between the levels of commitment to sustainable business.
4. Make the business case for sustainability.
5. Explain the role of entrepreneurialism and innovation in sustainability.
by companies driven even in part by sustainability include improved resource efficiency, waste management, and (perhaps most critically) brand improvement and reputational benefits.

1.1 What Do We Mean By “Sustainability”?  

1.1.1 Sustainability Is a Loaded Word

The term *sustainability* means different things to different people. It is all too easy to fall into the trap of using *sustainability* or *sustainable* in a vague or an ambiguous manner, ultimately signifying either too much or nothing at all. The term also risks being overused. Nonetheless, it is necessary to apply this term to a wide range of social, economic, environmental, and industry-specific issues. Therefore, it would be useful to put forward a general definition of the term, then to explain how the general meaning of the term pertains to business in particular.

The classic definition of sustainable economic development comes from the 1987 World Commission on Environment and Development’s so-called Brundtland Report, *Our Common Future*. **Sustainable economic development** “meets the needs of current generations without compromising the ability of future generations to meet their own needs.”6 Although the classic definition of sustainability is broad, it entails two key premises that offer normative guidance: (1) Economic activity should promote social welfare and protect the natural resource base, and (2) Economic activity should take into account impacts on future generations and steward the natural resource base so it is productive for future uses.

The definition of sustainable development will mean different things in different regions of the globe. For instance, Africa has distinct natural resources, population concerns, cultural norms, and political institutions than Asia. Therefore, what it means to “meet the needs of the present” will be different from region to region. Furthermore, the definition of sustainable development will have distinct ramifications for different industries because each sector can be responsible for such wide variations in social, economic, and environmental impacts. Coal mining presents different sustainability challenges than the apparel industry. Yet, despite all the variation across regions and industries, there are two common principles of sustainable development that apply to all businesses.

These two premises of the classic definition of sustainability can be translated into practical terms for business decision-makers. **Sustainable business** calls for measures of business success that include social, economic, and environmental factors and intergenerational stewardship of resources that creates lasting value and opportunity from one generation to the next. Let’s call these normative premises the “balancing needs” principle and the “stewarding resources” principle.

These terms capture the importance of accounting for the environmental and social costs of economic activity, and create an expansive duty to consider the interests of future generations by stewarding the resources used by business.
This rubric therefore addresses a wide range of moral issues in business, including labor standards, community impacts, deforestation, climate change, water shortage, and more.

The “balancing needs” principle can be applied through a triple-bottom-line approach to measuring business performance. John Elkington, founder of Sustainability, a British consultancy, coined the phrase “triple bottom line” in the 1990s. Elkington argued that companies should care about three unique measures of performance: (1) profits and losses; (2) the organization’s effect on people; and (3) pollution and resource depletion.7

These tripartite social, economic, and environmental concerns act as an organizing principle for the topic of sustainable business.

The stewarding resources principle can be applied through a variety of means in the contexts of supply chain management and operations management. For instance, sourcing raw materials from suppliers using proper harvesting methods can avoid a variety of environmental risks flowing from agriculture and land use. Recycling the constituent parts of old products not only diverts volume from the waste stream, it also reduces the need for new materials. Both practices contribute to stewarding resources.

**GLOBAL INSIGHT: Sustainability at Small- and Mid-Sized Enterprises (SMEs)**

Chances are, more students reading this textbook work for SMEs than for Fortune 500 companies. Indeed, SMEs constitute over 90% of global businesses, accounting for half of Gross Domestic Product for all countries, and providing 63% of all employment opportunities.8 While individual small businesses may not have a significant impact on their own, aggregate SME impacts make up 60%–70% of industrial pollution globally.3 Still, SMEs have been slow on the uptake when it comes to integrating sustainability. This may be due in part to the unfortunate fact that “SMEs have been relatively marginalized in the debate on sustainability and corporate social responsibility and relatively ignored in academic research on CSR and high-level policy initiatives.”10

Many resources exist to educate and empower SMEs to make an impact with sustainability.11 Led by dedicated management and driven by empowered employees, SMEs can be pioneers in ways that larger, more established firms cannot. SMEs may have more discretion in setting their agenda than publicly traded corporations, enabling them to dedicate resources toward sustainability as conscience (rather than shareholder vote) dictates. What it means to be a successful enterprise has changed, and SMEs have the opportunity to set the tone. It’s not just about quarterly profit margins anymore, but about creating meaningful, positive impacts in communities; maintaining a happy, healthy, and engaged workforce; and creating a legacy of lasting value.

The smaller a company is, the more intimately it can engage the community in which it does business to maintain a valuable reputation and rapport. The smaller a company’s operating budget is, the more significant are efficiency gains from waste reduction and resource conservation. The smaller the business is, the more vulnerable it will be to external shocks and business risks. For these reasons, the business case for sustainability—from the value creation, cost saving, and risk reduction points of view—applies with even greater force to SMEs than to large companies. Unique challenges faced by SMEs in their endeavor to become sustainable enterprises are discussed throughout the chapters of this book.12
An overwhelming majority of business leaders agree with the statement, “We believe substantial opportunities exist to improve both sustainability and profitability,” with 81% in agreement and only 5% disagreeing. This textbook explains the various ways in which that statement—that sustainability and profitability are consistent, not conflicting, goals—is true.

There are many “how” questions that arise at this point. How does one integrate sustainability considerations into the traditional responsibilities of running a successful enterprise? How can businesses invest in the welfare of communities and ecosystems without departing from their professional obligation to act in the best interest of the company and shareholders? How can principles of balance and stewardship be brought home to effect action? How do we promote lofty sustainable principles within the material world of business? We can answer the “how” questions of sustainability by integrating best practices into the foundations of business management across functional areas.

Given cost considerations and the competing priorities and pressures faced by business leaders, there is also the inevitable “why” question that the definition of sustainability leaves open. Why is sustainability a concern to my company? We can answer that question by discussing business successes, setbacks, opportunities, and costs that have turned on sustainable performance, to understand why these issues deserve consideration. In short, sustainability presents material risks and opportunities affecting business strategy across multiple functional areas.

### 1.1.2 Running Out of Space

Every decade it seems, the world becomes a more complex place in which to do business. The global economy has been in a recession since 2008, and global ecosystems are in decline. Natural resources are becoming scarce and companies are increasingly constrained in their use of energy and water. Climate change is exacerbating extreme weather events, droughts, loss of crops, and supply chain disruption. These changing environmental conditions affect all of us, as the results are higher prices for goods and services, shortages of food items, environmental catastrophes such as uncontrollable wildfires, and ferocious hurricanes that spell untold disaster. At the same time as global climatic and economic instability, the human population and consumption levels continue to grow rapidly. See Figure 1.1.

Sustainability is not “somebody else’s problem.” According to a 2011 Ernst & Young survey, 76% of respondents anticipate their company’s core business objectives will be affected by natural resource shortages in the next 3–5 years. According to the Center for Strategic & International Studies (CSIS)—a bipartisan non-profit think-tank—the major wildcard for political and social unrest over the next 20 years in the Middle East and South Asia will be water scarcity. The resulting population dislocation,
regional conflict, and spillover impacts of water shortage on other national staples could present profound challenges to the private sector.

Even without governmental mandates to reduce consumption, businesses are running into nature’s own barriers to growth: scarcity. With global natural capital in jeopardy, the time is overdue for a concerted effort to conserve those resources on the part of businesses whose success depends on their continued availability. **Natural capital** is the available stock of natural resources upon which human life and economic activities depend. The relationship between company profit and natural capital depletion is discussed in Section 1.2.1: What Do Externalities Have to Do with It?

Scientists have measured the health of the Earth’s ecosystems through a method called **The Global Living Planet Index**, which is a science-based analysis of the health of the planet and the impact of human activity.

This index, shown in Figure 1.2, indicates that global ecosystems have gone through a steady decline since the mid-1980s. The latest Living Planet Report concludes with the key finding that “Humanity’s demands exceed our planet’s capacity to sustain us.”

---

**FIGURE 1.1** Global Trends in Population and Consumption

A measure of how much of the planet’s ecosystems are needed to produce the resources we use and to absorb the waste we create is called The Global Ecological Footprint and shown in Figure 1.3. The Global Ecological Footprint illustrates that at the same time that supply is diminishing, our demand for these same resources is increasing. A growing human population means increased consumption of energy, water, and food. This is the very definition of an unsustainable trajectory.

Combining the elements of Figure 1.2 and Figure 1.3 reveals the fundamental unsustainability of our “business as usual” approach and is shown in Figure 1.4.
It appears that the demand on the planet’s living resources is already 30% greater than its capacity to regenerate those resources. If these trends continue, by the mid-2030s human society as a whole will demand twice as much as our planet can support, meaning it would take *two Earths* worth of resources to satisfy demand. To be sure, these metrics are not without controversy. Some scientists have criticized the ecological footprint metric because it does not adequately represent the extent of environmental degradation. In other words, the reality of our situation may be worse than the ecological footprint indicates. If the ecological footprint metric is accurate, we are exceeding the Earth’s carrying capacity. Reversing course on this unsustainable trajectory is going to take innovation, leadership, and accountability from a lot of businesses, large and small. It is not exaggeration to conclude that humanity is faced with the daunting challenge of ensuring its own future. Let’s look at the story of Ray Anderson for some inspiration.

**LEADERSHIP: Ray Anderson, Revolutionary Carpet Salesman**

In 1973, Ray Anderson founded Interface, Inc., a free-lay carpet tile company, which became the world’s largest modular carpet manufacturer. Under Ray’s vision, “Mission Zero” became the ambitious, long-term plan to reduce the company’s environmental impacts to zero by the year 2020. The idea behind Mission Zero is for the company to take nothing from Earth that cannot be replaced by natural processes. Between 1994 and 2009, Interface reduced material waste, pollutant emissions, and energy consumption; specifically, the company accomplished an impressive 24% reduction in greenhouse gas emissions, 60% reduction in fossil fuel consumption, 82% reduction in waste being sent to landfills, and over 80% reduction in the amount of water used. The financial effects of these pioneering innovations in sustainability were an avoided $450 million in costs, an increase in sales by 63%, and the doubling of corporate earnings. Ray Anderson passed away in 2011, but not before leaving a profound example that seriously challenges contemporary business leaders to take responsibility for their company’s environmental impacts and to take ambitious strides toward improving corporate sustainability.
1.1.3 The New Global Trend: Doing Less Bad and More Good

Sustainability is a megatrend for business, on par with globalization in its scope and ramifications for business strategy, cutting across all sectors of the economy and changing the competitive landscape. The sustainability megatrend is the result of a slow-forming convergence of large social, economic, political, environmental, and technological changes which influence a wide range of activities, processes, and perceptions in business, government, and society.

Sustainability emerges from a confluence of factors that include increasing business competition for scarce resources, population growth, industrialization in developing economies, and pressure from consumers, regulators, and shareholders in developed economies. For the last decade, environmental and consumer health issues such as water scarcity, greenhouse gas emissions, industrial pollution, food safety, and others have grown so significant that they have impinged on the ability of companies to focus solely on creating value for shareholders. Executives must now balance these external forces with the traditional imperative to promote their own financial bottom line.

What is emerging from this crucible is an enlightened view on the social responsibility of business. Doing right by stakeholders and doing right by shareholders can and should amount to the same thing.

Sustainable business provides a way past the apparent necessity to sacrifice people and planet for company profits. According to this view, value creation in a competitive landscape defined by resource constraints does not require tragic trade-offs, but rather innovative thinking and a willingness to challenge the status quo. Consumers in the United States and Europe are increasingly concerned about the ingredients of products they consume as well as the processes by which consumer products are manufactured overseas. Governments around the world are interceding into the means of production at greater levels in order to root out unsustainable practices. Public-interest advocacy groups may resort to litigation and publicity campaigns against an industry or business with particularly poor sustainable performance in order to make an example of them. When it comes to the sustainability trend, there are costs for being slow on the uptake.

For those businesses that are not taking on sustainability challengers in an affirmative manner, the risks and liabilities that come from failing to operate sustainably can become so material that investors may demand that they are disclosed in order to forecast the company’s financial performance.

During the early stages of the transition into sustainable economic development, sustainable business will basically mean, “doing less bad to people and planet.” This is a necessary first step to reverse the trends of resource depletion and excessive contaminant loads of ecosystems, and to take affirmative action to eradicate modern day slavery in the form of human trafficking and labor abuse. The move toward
sustainability initially gets off the ground with basic risk-minimizing and cost-saving measures such as social responsibility for workers and waste reduction, which have the ancillary benefit of protecting people and the environment.

The next step is transformative, not just corrective. Sustainable business is not just about doing less bad, but also about “doing more good.” According to Jeffry Hollender, Co-Founder of Seventh Generation, “Rather than simply emit less CO₂, create less waste, and establish a more equitable workplace, we must find a way to add value to the world in everything we do, from each step in our supply chain and every partner we do business with to every consumer we touch.” At this transformative stage, the resources of the private sector are mobilized to address the social and environmental challenges of our time. For managers of a sustainable company, making a positive impact on the world and society is just part of running a profitable business.

Leading companies as well as SMEs from virtually every industry around the world are investing in energy efficiency, renewable energy sources, eliminating waste, maximizing resource productivity, curbing pollution, improving the quality of life for employees, and making strides to benefit local communities through philanthropy and outreach programs. Sustainable performance that adds value along the triple bottom line is the new global trend pervading the private sector, and portends to become the new normal.

1.1.4 The Unsustainable Status Quo: Fisheries

Dealing with unsustainable consumption from one generation to the next has always been a challenge. In 1215 A.D., the Magna Carta prohibited taking “from the land of the heir” more than is reasonably due to the current generation, and required the guardians of an estate to steward the property that was to be passed on to future generations “without destruction and waste.” Today we take more from the land and sea than what could reasonably be allocated to any one generation, and we destroy and waste natural resources, forever depriving future generations of access to and enjoyment of the natural wealth of our planet. One example is the problem of unsustainable fishing that is depleting the world’s fisheries.

Hunting of wildlife will inevitably drive the hunted species to extinction when kill rates exceed reproduction rates. Fishing is the only form of wildlife hunting that takes place on an industrial scale, so it should come as no surprise that we are indeed overfishing. This is not a new phenomenon. For thousands of years humans have had a major impact on the target species of fishing as well as the ecosystem that supports the target species. Over time, the average size of caught fish diminished as we killed off larger species.

This trend quickened pace rapidly in the 19th century as fishing became industrialized. Large-scale fishing vessel fleets equipped by steam-powered trawlers, then power winches, then diesel engines, then freezer trawlers, then radar and acoustic fish finders, began to prowl the waters of the world for an ever-receding target. Instead of limiting catch to maximum sustainable yield, fishing vessels subject to little or no oversight expanded their reach, fishing deeper waters and more remote seas. See “Ending Overfishing” in Further Research.

As fish populations dwindle, humans have resorted to increasingly aggressive and destructive fishing practices. Trawlers that scrape the bottom of the sea are
sometimes used in areas covered in sea grass or coral beds where they can cause irreversible destruction to marine ecosystems. Explosives create blast craters at the bottom of the sea that destroy coral reefs in an instant—reefs that take decades to regenerate. Indiscriminate trawling, poisoning, and blasting are only increasing in use as fishers reach farther down into the barrel, so to speak, in search of fish.

According to the Food and Agricultural Organization of the United Nations, “To satisfy the needs of 9.2 billion people in 2050, overall food production will have to increase by about 70% and production in the developing countries will virtually need to double.” Increased food production will depend on productive fisheries, which are critical to global food security and poverty alleviation. Threats to fish populations are especially troublesome because “people have never consumed so much fish or depended so much on the sector for their livelihoods as they do today.” Half of oceans’ fish stock is fully exploited; one-third of the oceans’ stock is over-exploited, depleted, or in a state of recovery; and only 15% of the oceans’ marine fish stock remains under- or moderately exploited.

Fish provides a highly nutritious animal protein and source of important micro-nutrients, especially important for pregnant women and young children. In the most food-insecure areas of the globe, fish protein is essential for survival. Further, millions of small-scale fishermen depend upon fishing for their livelihood. Yet in other parts of the world, fishermen are exploited by unscrupulous foreign charter vessel owners and subjected to harsh labor conditions with little compensation and no hazard pay.

Increasing the amount of fishing will continue to push fish species to the brink of extinction, but limiting the amount of fishing could jeopardize the livelihoods of small-scale fishermen and communities that depend upon fish to meet nutritional needs. The principles of sustainable business practices try to find a way through this impasse. A variety of steps could be taken in the fishing industry to promote sustainable solutions to these challenges. Examples include limiting the use of intensive fishing practices such as trawling, monitoring vessels for fair labor compliance, more effective industry self-regulation, and so on.

The economic, social, and environmental impacts of overfishing range from the prices on the menu at your local seafood restaurant, the livelihood of fishing vessel workers, and the health of ocean ecosystems. These impacts are what economists call *negative externalities*. We discuss these next.

### 1.2 Causes and Consensus Around Sustainable Business

#### 1.2.1 What Do Externalities Have to Do with It?

The practice of shifting the cost of business away from the operator and on to natural resources or populations is described in economic terms as *externalizing* the costs of business. A simpler term for such a practice is *bad*. By pushing the costs of environmental destruction onto ecosystems, communities, or future
generations without a say in the matter, companies may profit from their activities, but only at the expense of others. A practice of destroying more value than what is created can only be perpetuated if what is consumed is not stewarded appropriately and if the costs of risky activity are shifted to innocent bystanders. Recall that the triple bottom line “aims to measure the financial, social and environmental performance of the corporation over a period of time. Only a company that produces a TBL is taking account of the full cost involved in doing business.”

Sustainable businesses own up to these externalized costs, creating the appropriate incentives to eliminate waste and overconsumption and to protect employees and surrounding communities from exposure to risks created by the company’s activities.

Some sectors of industry cause harm to the environment and public health at levels in excess of their own profits. This means that more value is destroyed than created by economic activity in these sectors. This value destruction comes in the form of lost natural capital, defined earlier.

For instance, coal-fired power generation in East Asia costs an estimated $452.8 billion in natural capital impacts, which outweighs the industry’s $443.1 billion in revenue. Cattle ranching and farming in South America causes an estimated $353.8 billion in natural capital costs, which dramatically outweighs the regional sector’s $16.6 billion in revenue. Coal-fired power generation in North America causes an estimated $316.8 billion in natural capital costs, whereas it generates substantially less at $246.7 billion in revenue. Although coal production powers a large portion of industrial activity, its results in billions of dollars of environmental and public health costs that render it inefficient. How is this massive inefficiency possible? How could an industry destroy more value than it creates?

The major problem with externalizing costs of commercial activity is not just that it is unfair. Rather, the major problem posed by externalizing environmental and social costs is that the party responsible for the harm never feels the pain they are causing. Touching a hot stove with a bare hand teaches a curious child the lesson of being careful with heat. If a child touched the hot stove and it burned someone else’s hand, that child would never learn the lesson of caution. As long as businesses are able to externalize operating costs with impunity, there may be little hope for practices to improve without the intervention of outside agency, such as governmental regulation or consumer activism. However, business innovation can leapfrog outside influence, allowing sustainable companies to determine their own success in a changing regulatory landscape.

The basic effort of sustainable business across all functional areas is to internalize externalities, that is, for the party that creates the risk to bear the cost of that risk instead of forcing it on someone else. In economic terms, sustainable organizations internalize the negative externalities they create.

To internalize externalities is to end the practice of allowing harm to go uncompensated and to begin restoring appropriate incentives for the responsible stewardship of natural and human resources. This is accomplished by (1) offsetting harm through conservation and philanthropy and (2) innovating to perform traditional business functions in ways that reduce or eliminate adverse impacts traditionally associated
1.2.2 Shareholder Pressure

An early objection to corporate sustainability was the notion that business leaders should ignore external stakeholders and focus instead on the wealth of corporate shareholders. As it turns out, shareholders have increasingly called attention to the social and environmental impacts of business and demanded that corporate governance take these impacts into account. So-called environmental, social, and governance (ESG) issues are material factors for investors, demonstrated by an increase in ESG shareholder resolutions over the last decade. According to preliminary research, financial performance measured with Tobin’s Q ratio (market value divided by the book value of assets) declines when shareholder activists file a resolution related to a company’s environmental performance. We might infer from this finding that average investors believe a company is riskier, and therefore a less appealing investment, when it is faced with shareholder resolutions concerning the environmental impacts of corporate conduct. Proactive business leadership may be able to obviate ESG challenges from shareholders by establishing policies of transparency and accountability for these issues. From the stock market to the board room, shareholder pressure is a driving factor in the sustainable business transformation.
Whether out of a sense of moral obligation, because of investor or governmental mandates, or simply because Mother Nature is forcing our hand, industries around the globe are making strides to become sustainable. Among those companies pursuing sustainability, the field is diverse across industry sectors, commitment level, and means of implementation. The drivers of sustainable business are multiple, and each is a force unto itself. They include increasingly stringent government regulations, standards promoted by industry and NGOs, public interest and consumer advocacy campaigns, various litigation, expanding marketing opportunities, cost reduction in supply chain and operations, risk management protocols, and natural resource constraints. SMEs are driven to sustainability for different reasons than large businesses. Compared to large firms, the personal values of the owner-manager of an SME are a more important driver than marketing, strategy, or public relations. In general terms, the drivers of sustainable business can be categorized as economic, ethical, institutional, and technological. See Table 1.1.

**1.2.4 Baseline Shift Toward Sustainability**

A common theme in the regulatory arena, consumer advocacy campaigns, and public interest NGOs and non-profit initiatives, is to bring about the internalization
of externalities through regulation, voluntary standards, collaboration, and in some cases, litigation. Increasingly stringent standards are reducing waste, reducing energy and water consumption, eliminating the use of toxins, and prompting companies to play a larger role in the betterment of the communities in which they do business. Although sustainability improvements happen incrementally, this remains an area of business competence where it pays to be ahead of the curve.

The number of sustainability indices has grown substantially over the last decade. Today, a majority of Fortune 500 companies publish annual sustainability reports disclosing environmental impacts and explaining sustainability strategies and goals to external stakeholders, and a majority of Fortune 100 companies and two-thirds of Fortune Global 100 companies have committed either to using renewable energy or to reducing greenhouse gas emissions or both. The tipping point of making voluntary commitments to sustainable business practices occurred between 2011 and 2013. Now, among the largest companies, those that are not committed to sustainability are in the minority.

Business representatives attending the Rio+20 Summit on Sustainability voted to support certain propositions related to sustainable business. These principles are a common ground of consensus that will assist business decision-makers in moving the conversation forward in their organization as well as in discussions with government. The following business prescriptions are supported by leaders in the private sector:

- Addressing global social and environmental challenges is essential for future business success.
- Leadership is urgently required from businesses to achieve sustainable and equitable economic growth.
- There is a clear economic case for doing business more sustainably.
- Businesses should reduce their focus on short-term performance and focus on long-term competitiveness.
- Businesses should use their power to act quickly and decisively to drive change where government policymakers cannot.

### Table 1.1

<table>
<thead>
<tr>
<th>Drivers of Sustainability</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economic</td>
<td>Increase efficiency, create opportunities, increase profit, reduce costs, and meet consumer/investor expectations</td>
</tr>
<tr>
<td>Ethical</td>
<td>Fulfill social responsibilities to the communities in which the company operates, respect human rights on the part of laborers working for suppliers, and steward resources for future generations</td>
</tr>
<tr>
<td>Institutional</td>
<td>Improve standing with regulatory agencies by maintaining compliance track record, and create alliances with NGOs and non-profits to increase credibility and collaboratively problem-solve</td>
</tr>
<tr>
<td>Technological</td>
<td>Inspire technological breakthroughs that enable a company to compete in new ways, use less resources, develop new products or processes, and reduce operating costs</td>
</tr>
</tbody>
</table>
1.3 The Forms and Stages of Sustainable Business

1.3.1 Sustainability Marginalized

Sustainability was not always the popular kid on the playground. The main problems with sustainable business over the last few decades boil down to a few issues: (1) it was peripheral to the core business activities; (2) it proceeded incrementally in fits and starts; and (3) it was uneconomical according to existing incentive structures. Not too long ago, sustainability was popular among a relatively small group of academics, scientists, NGO officials, non-profit public interest organizations, and community activists. Although it has grown tremendously in relevance and popularity among large companies, there are still a few hurdles to clear before sustainability has its day in the sun.

**LEADERSHIP:** Statoil ASA Provides Sustainable Oil

Statoil ASA is an international energy company with operations in 35 countries, headquartered in Stavanger, Norway. The company is one of the world’s largest suppliers of oil and gas and has contributed to make Norway a modern industrial nation. The company’s goal is to meet energy needs worldwide in a responsible manner through innovation and technology. Statoil’s corporate sustainability mission is “to ensure sustainable development and help improve the environment.”

*Climate Change* – Industry leadership in carbon efficiency is a strategic corporate objective. Each facility has a quota on greenhouse gas emissions. The company’s commitment to addressing climate change leads to operational excellence and development of technical expertise, demonstrated by energy efficiency improvements in projects and facility installations.

*Environmental, Health, Safety (EHS) Policies* – The company ensures safe operations that protect the public, environment, surrounding communities, and assets. They have a commitment to integrating good health, safety, and environment practices in all areas of the business.

*Clean Air* – Statoil’s on- and offshore facilities use gas and oil for operation. This generates SO\textsubscript{x} and NO\textsubscript{x} emissions, harmful air pollutants. To proactively combat these emissions, the company installed scrubbers at its refineries before the European Union had imposed the requirement to do so.

*Sustainable Performance Initiatives* – Statoil has been the top ranked oil & gas company in the world four times according to the Dow Jones Sustainability Index. The company prides itself in obtaining consistently high ratings in socially responsible investing indices.
Sustainability is at risk of remaining peripheral to the mindset of running a business. This will continue to be the case for companies that have not added sustainability as a competitive priority and committed to the practice at the leadership level. Otherwise, sustainability concerns will tend to be relegated to the public relations department, and not frequently integrated across business functions. Further, sustainability appears to be economical only for the largest companies that can afford capital-intensive innovation or perhaps longer periods of amortization from their ROI on sustainability initiatives. Additionally, sustainable business might be uneconomical in the short-term as long as markets continue to reward companies that externalize their costs. Although sustainable business can realize long-term profits, not all companies have such long time horizons. Further, not all governments are taking strides to create the proper economic incentives for sustainable business, and the lack of a suitable legal environment can frustrate the good intentions of any company.

For the time being, sustainability improvements are incremental, following the quality management model, with companies committing to a small-percentage reduction of resource consumption or pollution over a period of years, benchmarked against their own consumption or emissions levels from some arbitrary period of time in the last 20 years (which levels may not have been sustainable then). Incremental improvements are better than none, and a snail’s pace is still progress. However, the urgency and scale of sustainability problems, such as global water shortage, demand more than incremental improvements.

### 1.3.2 Sustainability Grows Up

The following table compares the five levels of sustainable business practices, ranked by increasing degree of transparency and accountability with respect to corporate conduct across the Four M’s: motive, manner, method, and medium. Each level is described in terms of (1) the motive for pursuing sustainability, (2) the manner in which the company relates to sustainability principles, (3) the method most commonly used to achieve sustainable goals, and (4) the medium across which those goals are accomplished. See Table 1.2.

<table>
<thead>
<tr>
<th>Motive</th>
<th>Manner</th>
<th>Method</th>
<th>Medium</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Profit</td>
<td>Defense</td>
<td>Ad Hoc</td>
<td>Investments</td>
</tr>
<tr>
<td>2. Philanthropy</td>
<td>Charity</td>
<td>Programmatic</td>
<td>Projects</td>
</tr>
<tr>
<td>3. Marketing</td>
<td>Promotional</td>
<td>Public Relations</td>
<td>Media</td>
</tr>
<tr>
<td>4. Control</td>
<td>Strategy</td>
<td>Management</td>
<td>Codes</td>
</tr>
<tr>
<td>5. Responsibility</td>
<td>Systemic</td>
<td>Business Model Integration</td>
<td>Products and Services</td>
</tr>
</tbody>
</table>

Stage 1 The profit motive drives the most basic and fundamental level of sustainable business. At this level, businesses pursue sustainability as a defensive strategy to protect profits; sustainability is pursued in a limited fashion, and even then, only when doing so will increase value for shareholders. For instance, ad hoc investments into pollution controls are understood as a means of fending off regulatory delays or violation fines, rather than as a means of protecting the environment. Initiatives such as reducing electricity use are understood primarily as a method for reducing operating costs—not as a means of mitigating corporate impact on climate change. In other words, if it were not for the threat of financial penalty, or the promise of financial gain, sustainable investments would not be forthcoming for businesses at the first level.

Stage 2 The desire to promote philanthropy through charity events and collaborations with non-profits on various social impact projects characterizes businesses at the second level of sustainability. Corporate philanthropy is responsible for efficiently and strategically allocating resources to support noble causes throughout the world as well as within the communities in which businesses operate. In the United States (but not in some European nations), donations made to non-profit charitable organizations are tax deductible, which provides a financial incentive to pursue philanthropy. Successful businesses are in a financial position to donate money from surplus to improve education in low-income areas, or to promote breakthrough medical research for public benefit, for example. Philanthropic projects can either focus on social or environmental needs outside the scope of corporate conduct, or they can be pursued through direct action. For instance, a business specializing in medical products can donate their own products to low-income areas to meet healthcare needs. Alternatively, a company that sells insurance products may simply set aside funds to fight childhood obesity. Philanthropic efforts allow room for creativity in the pursuit of sustainable business. Contributions, sponsorships, grants, and other funds dedicated to social impacts or environmental conservation provide companies an opportunity to make a positive difference even where product and service innovations seem out of reach. For example, many companies collaborate with the PGA Tour’s non-profit golf tournaments to promote social impact causes through corporate sponsorships. Because of corporate philanthropy, the PGA Tour has donated over $2 billion to support over 3,000 local and national charities throughout the United States. Philanthropy allows companies to improve lives they otherwise may not reach through direct operations. A company that generates pollution might not be in a position to modify their production process to reduce those emissions, however they may be able to offset the damage they create by making a donation to an environmental conservation organization that can promote in-kind environmental benefits.

Stage 3 At this level, companies realize the marketing value created by their preventative and philanthropic sustainability efforts from the previous two stages. Committing to social betterment or to natural resource protection can be used in promotional material to enhance brand loyalty and corporate reputation if they...
are genuine, steadfast commitments rather than one-off projects. That said, if all a company has done to promote sustainability is avoid regulatory violations or make a single contribution to a charity, then using media to spin their efforts into PR material can be perceived as deceptive or self-aggrandizing. While there is a risk of marketing sustainable performance prematurely, once a company has made legitimate and substantial investment into sustainable business, it must accompany these efforts with effective marketing. The marketing function allows companies to capture value created by their efforts and provides a critical window of communication between businesses and their customers that promotes a responsive business strategy.

**Stage 4** Here, businesses go beyond mere compliance, philanthropy, and marketing by establishing superior control over risks to their operations and supply chains and embedding environmental management systems and corporate codes of conduct into business strategy. At this level, sustainable performance is benchmarked, goals are set, and performance is monitored and reported throughout the organization and its supply chain. Many companies are arriving at this level of sustainability performance because of its strategic value. At this level, businesses support social and environmental values that align with corporate strategy. For instance, Coca-Cola has made substantial commitments to conserving global water supplies in part by developing a program to monitor water quantity and quality across the globe. Water is the life-blood of any bottling company. For Coca-Cola, if there is no water, there is no product. For Coca-Cola, sustainable water use is a matter of strategy, not just philanthropy.

**Stage 5** Businesses driven by responsibility are conceived to address the needs of civilization through their product or service offering. Innovative business models, revolutionary production processes, and lobbying to enhance environmental and social protections offered by government policies typify the few businesses at this advanced level. Here, the company’s strategy is molded to address the root causes of unsustainability, environmental protection is integrated into the company’s business model, and innovative products and services disrupt markets. At this level, businesses are willing to change their strategy to solve global and civilizational problems.

Each subsequent level transcends but includes previous levels—that is, companies driven by responsibility are still able to improve profits when they commit to sustainable business. A company intent on solving the global water crisis will not do anyone a favor by going bankrupt. At any stage of maturity, sustainable business decisions can improve environmental, social, and economic conditions, but they must provide for corporate profitability.
1.3.3 Sustainability Gears Up

The idea that business, not just government, has some share of responsibility for the welfare of the environment and society, has been around since at least the 1980’s, and each decade the concepts and degrees of responsibility have evolved to address new problems and a greater role for business in solving them.

An alternative way of understanding the evolution of corporate sustainability is the “gearing up” metaphor for organizational transformation. “Like a manual transmission, the framework is designed to take a company from a level of bare compliance with applicable law to a place where sustainability is a systemic, integrated part of its strategy that transforms its business model and markets.”45 See Table 1.3.

To be sure, although the attitude toward sustainability changes with each stage in this evolution, the priorities are not jettisoned along the way. Each stage includes the priorities of the previous stages, but these priorities are looked at from a more enlightened point of view. For example, a company that is concerned with integrating sustainability into core business strategy is still taking measures to ensure that corporate activities comply with applicable laws and regulations, still benchmarking sustainability performance, and still partnering with other stakeholders in the search for sustainable solutions.

<table>
<thead>
<tr>
<th><strong>TABLE 1.3</strong></th>
<th>Evolution of Attitudes Toward the Business Case for Sustainability</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Attitude Toward Sustainability Policies</strong></td>
<td><strong>Business Case for Sustainability</strong></td>
</tr>
<tr>
<td><strong>Complying</strong></td>
<td>Sustainability concerns are viewed with skepticism, as is the business case for sustainability.</td>
</tr>
<tr>
<td><strong>Benchmarking</strong></td>
<td>Sustainability is appreciated as a legitimate concern of external stakeholders, and incorporated into operations for PR benefits.</td>
</tr>
<tr>
<td><strong>Partnering</strong></td>
<td>Sustainability is a significant concern for the organization and requires solutions that work for all stakeholders.</td>
</tr>
<tr>
<td><strong>Integrating</strong></td>
<td>Sustainability is a paramount concern of the organization and provides a competitive advantage in the organization’s sector enabling the creation of value for stakeholders.</td>
</tr>
</tbody>
</table>

Coloplast A/S is an international company founded in 1957 that develops, manufactures, and markets medical devices and services related to ostomy, urology, continence, and wound care. The company is headquartered in Humlebaek, Denmark, operates in over 55 countries worldwide and employs over 8,000 people. Europe constitutes the largest market (73% of sales), followed by North America (17% of sales), and the rest of the world (10% of sales). The company’s signature offering is intimate healthcare services and products. The company supplies products to hospitals and institutions as well as wholesalers and retailers. In some markets, Coloplast is a direct supplier to consumers. The company prides itself on carefully listening to end consumers and understanding their needs in order to make their lives easier since these patients are battling difficult diseases of a personal and private nature. Coloplast has several sustainability initiatives that involve all of its stakeholders:

End user – provide products that are free of phthalate (a potentially biologically disruptive plastic).

Healthcare professionals – train all white-collar employees in Code of Conduct regarding relationships with prescribers.

Employee – Promote gender equality in management positions; avoid repetitive work; employ active work injury prevention.

Business Partners – 100% of raw materials covered by “Supply chain responsibility programme” which pertains to human rights, labor rights, and business ethics.

Environment – absolute reduction of CO2; increase recycling.

Society – Reduced cost access to products in emerging markets.

As a result of these sustainability initiatives, the company has gained a great reputation. For instance, Coloplast is noted on the Danish Stock Exchange and has for a number of years been represented among the 20 most traded shares in the country. The company was also included in Ethisphere’s 2012 edition of the “World’s Most Ethical Companies” listing. In Europe, Coloplast is a market leader in its segment. The access-to-care initiative gives the company market presence in emerging nations as the middle class grows in those countries.

1.4 The Business Case for Sustainability

1.4.1 There Is Actually Just One Bottom Line

Sustainability is not a departure from the traditional business imperative to promote profit—it is rather a refinement. The benefits of sustainability may include flourishing ecosystems, improved public health, and increased consumer satisfaction, but the underlying driver is profit for the company involved. If profit did not accompany sustainability, it would flounder as a movement, yet it has only grown. Companies are taking sustainability seriously not just to save the planet but simply because it is a good investment.

It should be clear that although environmental and social concerns are pressing, there are powerful economic motives behind the sustainable business trend. The many business examples in this textbook show the payoff of sustainability across industries and around the world. The notion that sustainability pays is also supported by scientific research. Consider the research around the adoption of ISO 14001 standards for environmental performance. High-adopters of environmental management systems (EMS) are more likely to report increased recycling activity as well as
The Business Case for Sustainability

1.4
table 1.4

MANAGERIAL INSIGHT: Balance and Stewardship Are Not Anti-Business Ideas

Recall the two principles of sustainable business, discussed in Section 1.1.1: balance and stewardship. Roberto C. Goizueta, former Chairman of the Board of Directors and Chief Executive Officer of Coca-Cola Corporation, explained how the interests of society and the interests of corporate profitability are aligned. “The creation of unique value for all stakeholders, including share owners, over the long haul, presupposes a stable, healthy society. Only in such an environment can a company’s profitable growth be sustained. Thus, the exercise of what is commonly referred to as ‘corporate responsibility’ is a supremely rational, logical corollary of a company’s essential responsibility to the long-term interests of its share owners.” In this way, balance and stewardship of social and environmental resources is consistent with the basic economic imperative to improve profit.

reductions in air emissions, solid waste, and energy usage. A study of Italian firms identified economically quantifiable benefits from EMS adoption including raw material conservation, productivity improvements, energy conservation, smoother production operations, waste reductions, improved access to government regulatory incentives, and reduced insurance costs. The study also found less easily quantifiable benefits, including risk reduction and improved company image.

Growth rates of sustainable market segments are rapidly increasing and taking over market share from conventional products in the food, consumer product, construction, finance, energy, and automotive sectors. See Table 1.4.

**TABLE 1.4**

**Sustainable Take Over of Market Share Across Industries**

<table>
<thead>
<tr>
<th>Industry</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food (Environmental)</td>
<td>Between 2002 and 2011, the organic food market grew by 238%, compared to a 33% growth in the overall food market.</td>
</tr>
<tr>
<td>Food (Social)</td>
<td>Between 2002 and 2011, there was a 1,442% increase in Fair Trade certified food imports.</td>
</tr>
<tr>
<td>Consumer Products</td>
<td>Between 2003 and 2011, the organic non-food market (including linen, clothing, personal care products, pet food, household cleaners, flowers, and nutritional supplements) grew by 400% compared to the 33% growth in the overall non-food market.</td>
</tr>
<tr>
<td>Construction</td>
<td>Between 2005 and 2011, the green building market grew by 1,700%, compared with the −17% contraction in the overall building market.</td>
</tr>
<tr>
<td>Finance</td>
<td>Between 2001 and 2010, Socially Responsible Investing (SRI) portfolios saw an asset growth of 32%, greater than the 27% increase in overall investment asset growth, and during the economic recession of 2007–2010, SRI portfolios grew by 13.2% when overall investment grew only 0.4%.</td>
</tr>
<tr>
<td>Energy</td>
<td>Between 2002 and 2011, consumption of renewable energy increased by 456% while non-renewable energy consumption decreased by −3.2%.</td>
</tr>
<tr>
<td>Transportation</td>
<td>Between 2002 and 2011, hybrid vehicles saw a 646% increase in sales, while the overall vehicle market experienced a −15% contraction.</td>
</tr>
</tbody>
</table>
This chapter has framed innovation as the primary means by which businesses make the transition into sustainable performance. We explore this important transformation process next.

### 1.4.2 Environmental Changes and Business Implications

Several environmental trends have implications for all sectors of the economy. These implications are risks to traditional businesses, yet also opportunities for sustainable enterprises capable of innovation. See Table 1.5.

Among these environmental trends and business implications, there are three common denominators: (1) **Innovation** to avoid the costs resulting from natural resource degradation and to increase the efficiency of resource use; (2) **Transparency** with and responsiveness to stakeholders; and (3) **Stewardship** of natural and human resources to enable long-term growth. Innovation, transparency, and stewardship are the mechanisms of sustainable business.

### 1.4.3 Green Shoots and Blue Oceans

In addition to the trends and implications common across all sectors discussed earlier, environmental changes pose sector-specific risks and opportunities. These new market niches and opportunities for sustainable development are green shoots of growth emerging in the global economy. See Table 1.6.

The common risks posed to all sectors by a changing physical environment (see Table 1.5) present parallel opportunities unique to each sector (see Table 1.6). Balancing these risks and opportunities is part of sustainable business strategy.

The sustainability trend invites companies to pursue a blue ocean strategy (BOS). **Blue ocean strategy** is the “simultaneous pursuit of differentiation and low cost. The aim of BOS is not to outperform the competition in the existing industry, but to create new market space or a blue ocean, thereby making the competition irrelevant.”

Product and process innovations of sustainable businesses can reduce costs and increase revenue regardless of what the competition is doing. By using BOS companies can make lemonade from the lemons of environmental limitations. Sustainable innovation carries the promise of new products, new services, and even new markets. Sustainability is the new hallmark of a competitive enterprise.

### 1.4.4 Overview of the Textbook

**Part I: Introduction** includes Chapters 1–3, and provides the theoretical overview of sustainable business from social, economic, environmental, and organizational perspectives.

**Chapter 1: Introduction to Sustainable Business** explains what sustainability means and why it is important to business leaders. This chapter provides a factual big-picture overview of the topic, including the evolution of sustainability within the business community, and environmental, social, and economic drivers of that evolution. This chapter
<table>
<thead>
<tr>
<th>Environmental Change</th>
<th>Implication for Business</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Greenhouse Gas Emissions.</strong> Over the next 50 years, greenhouse gases (GHG) may double, increasing global average surface temperature by 3 to 6 degrees Celsius by 2100.</td>
<td>Low-carbon products come into favor; operational and supply chain disruptions increase; costs increase for energy, natural resources, and commodities; changing local conditions require adapting means of production and transportation.</td>
</tr>
<tr>
<td><strong>Extreme Weather Events.</strong> Between 1980 and the 2000s, flood disasters increased by 230% and drought disasters increased by 38%. This trend is expected to continue.</td>
<td>Operational and supply chain disruptions increase; operations and materials costs increase; public infrastructure such as roadways deteriorate; demand for reconstruction services grows.</td>
</tr>
<tr>
<td><strong>Land Use.</strong> Over the next four decades, land required for urban uses may increase by 100–200 million hectares.</td>
<td>Access to land-based resources will be restricted; ecosystem services will diminish; arable land will be highly sought-after; pressure will grow to protect natural resources.</td>
</tr>
<tr>
<td><strong>Water Quantity.</strong> Over the last five decades, global water withdrawals tripled to meet agricultural, industrial, and domestic demands. This trend is expected to continue.</td>
<td>Demand will grow for water-efficient products; water scarcity will constrain growth; operational and supply chain disruptions will increase; stakeholder conflicts will increase due to limited water supply; water costs will increase.</td>
</tr>
<tr>
<td><strong>Water Quality.</strong> Ninety percent of global water bodies are contaminated by persistent toxic chemical pollutants.</td>
<td>Demand will increase for pollution control systems and technology; water treatment costs will increase; water quality regulations may become stricter; health impacts will grow, demand for healthcare services will increase.</td>
</tr>
<tr>
<td><strong>Biodiversity.</strong> Thirteen million hectares of forests were lost between 2000 and 2010. High rates of species extinction are expected to continue as critical habitats such as forests and wetlands decline.</td>
<td>Pressure will increase from market, consumers, and regulators to reduce biodiversity impacts; natural resource scarcity will increase operating costs; product re-design will be constrained by limited access to materials; access to land will be limited.</td>
</tr>
<tr>
<td><strong>Chemical Exposure.</strong> We lack information on human health impacts of cumulative and synergistic exposure to chemicals; despite that more than 248,000 such products are commercially available.</td>
<td>Pressure will increase from regulators, consumer advocates and customers for increased transparency; market preferences will shift to low-impact products and services.</td>
</tr>
<tr>
<td><strong>Waste.</strong> Raw materials are increasingly produced in one region, used in a second, and managed as waste in a third. 20–50 million tons of e-waste is generated every year, containing hazardous substances and strategic metals.</td>
<td>Pressure will increase from regulators and customers to reduce waste, to increase recycling and materials recovery, and to properly manage hazardous waste; waste management may become a reputational factor; e-waste recovery may be worth the cost.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Market Sector</th>
<th>Opportunity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buildings and Construction</td>
<td>Demand for sustainable infrastructure, retrofits, materials sourcing, and skilled design and construction workforce create opportunities for increased building value and reputational benefits.</td>
</tr>
<tr>
<td>Chemicals</td>
<td>Demand for sustainable chemical inputs into technology, water treatment, and agricultural products, and phase-out of restricted chemicals create opportunities for green chemistry and reputational benefits.</td>
</tr>
<tr>
<td>Resource Extraction</td>
<td>Demand for cleaner fuel sources, sustainable material inputs into industrial processes, and recycling programs to reduce e-waste creates opportunities for exploration and production, carbon capture and sequestration, and create closed-loop supply chains.</td>
</tr>
<tr>
<td>Finance</td>
<td>Increased demand for property insurance coverage against extreme weather events creates markets for insurance products that encourage sustainable building design. Financial instruments for major environmental solutions projects will allow large-scale sustainable commercial development.</td>
</tr>
<tr>
<td>Food and Beverage</td>
<td>Demand for climate-resilient food supplies creates opportunities for geographically new food supply chains. Demand for organic and sustainable agricultural products creates new markets for growers.</td>
</tr>
<tr>
<td>Healthcare</td>
<td>Increase in health problems resulting from pollution and climate change creates new markets for medical products that do not require water or climate-controlled storage.</td>
</tr>
<tr>
<td>Information and Communication Technology</td>
<td>The ability to capture and process environmental performance data creates opportunities for IT companies to market products that use data analytics to optimize environmental performance. IT services may displace physical processes, resulting in decreased impacts.</td>
</tr>
<tr>
<td>Tourism</td>
<td>Environmental changes impact the desirability of tourist destinations, and increasing demand for eco- and agro-tourism creates local partnership opportunities for the tourism industry.</td>
</tr>
<tr>
<td>Transportation</td>
<td>Demand from business customers for cleaner transport options and costs of logistics create opportunities for innovation in the logistics sector. Increasingly stringent fuel economy standards for personal vehicles will also drive innovation in this sector.</td>
</tr>
<tr>
<td>Electric Power</td>
<td>Demand for low-carbon powered indoor climate control and renewable electricity generation creates opportunities for smart-grid technology, energy storage products, and energy efficiency services.</td>
</tr>
</tbody>
</table>

motivates the book by ending with a discussion of the business case for sustainability and the role of innovation in addressing the risks and opportunities of sustainability.

Chapter 2: Perspectives explores frameworks for sustainable business, organized under the rubric of environmental, social, and economic perspectives. From biomimicry to stakeholder theory and ecosystem services, this chapter provides key concepts and frameworks that inform subsequent chapters.

Chapter 3: Leadership, Change Management, and Corporate Governance provides examples of the powerful impact companies can have in society when they pursue corporate sustainability. A commitment to sustainability from leaders, and buy-in from employees, is essential to manage the transition from a traditional to a sustainable enterprise. This chapter illustrates how sustainability leadership is distinct in its style, methods, incentives, and goals from traditional leadership. Mechanisms of corporate governance, from the structure of the Board of Directors to Executive Sustainability Committees and shareholder resolutions, can play a large part in shaping organizational sustainability.

Part II: Accountability includes Chapters 4–6, unified by the theme of accountability for the adverse social, economic, and environmental impacts of business.

Chapter 4: Legal Frameworks explains the many ways in which law permeates the business environment, providing outer boundaries for corporate conduct across a wide range of functional areas. From international law to local land use regulations, this chapter provides a comprehensive introduction to the role of law in making the business case for sustainability. Laws provide normative guidance for consumer product design, industrial process design, and supply chain management. Legal frameworks typically aim to reduce risk by instilling accountability.

Chapter 5: Metrics, Tools, and Reporting: The Role of Finance and Accounting provides methods for measuring the social, economic, and environmental impacts of business, and the reporting standards to promote transparency. This chapter introduces helpful analytical tools (such as life-cycle assessment) to enable objective, comprehensive impact analysis to support sustainability-related business decisions. Emphasis is placed on environmental performance metrics and the use of information to drive strategic decisions. Under certain conditions, reporting sustainable performance is a legal duty.

Chapter 6: Risk Management identifies sources of business risk, with emphasis on water resources and climate change; explains the risk elements of exposure and vulnerability; and introduces strategies for reducing risk through organizational resilience. Using the enterprise risk management continuum aligns risk management practice with a company’s over-arching sustainability strategy.

Part III: Implementation includes Chapters 7–9, and integrates sustainable principles and practices into the core functional areas of business—marketing, supply chain management, and operations.

Chapter 7: Marketing explains how the marketing function is responsible for driving innovation and capturing the value created by sustainability initiatives. Departures from traditional marketing strategy are explored. The chapter lays out ethical marketing guidelines specifically related to environmental attributes of consumer products. This chapter concludes with a discussion of the role of third-party certification.

Chapter 8: Supply Chain Management addresses the centrality of the supply chain to the environmental and social impacts of business, from carbon emissions to human trafficking. This chapter explores the many opportunities
to promote sustainability within supply chain management, from product sourcing decisions to transportation modality.

**Chapter 9: Operations Management** discusses issues such as product and process design, production methods, and inventory management. Companies can use sustainable operations to improve social and environmental performance by creating new products and improving the way facilities are managed.

**Key Terms**

<table>
<thead>
<tr>
<th>term</th>
<th>page</th>
</tr>
</thead>
<tbody>
<tr>
<td>sustainable economic</td>
<td>4</td>
</tr>
<tr>
<td>development</td>
<td></td>
</tr>
<tr>
<td>sustainable business</td>
<td>4</td>
</tr>
<tr>
<td>principle of balance</td>
<td>4</td>
</tr>
<tr>
<td>principle of stewardship</td>
<td>5</td>
</tr>
<tr>
<td>triple-bottom-line</td>
<td>5</td>
</tr>
<tr>
<td>Natural capital</td>
<td>7</td>
</tr>
<tr>
<td>Global Living Planet Index</td>
<td>7</td>
</tr>
<tr>
<td>internalize</td>
<td>13</td>
</tr>
<tr>
<td>Rio+20 Summit on Sustainability</td>
<td>16</td>
</tr>
<tr>
<td>negative externality</td>
<td>12</td>
</tr>
<tr>
<td>blue ocean strategy</td>
<td>24</td>
</tr>
</tbody>
</table>

**Discussion Questions**

1. When did you first learn about sustainability? What was your impression?
2. Do you agree with the idea that businesses have social responsibilities?
3. Have you ever worked for a company that promotes sustainability?

**CASE 1 BMW Pioneers Sustainable Automotive Technology**

Bavarian Motor Works Auto Group (BMW Group) is a German automobile, motorcycle and engine manufacturing company incorporated in Munich, Bavaria, Germany. The company publishes a Sustainability Value Report every 2 years to inform its stakeholders in a transparent manner about the company’s sustainability strategies and how the company intends to incorporate them in the future. For 6 consecutive years, the Dow Jones Index has named BMW as the world’s most sustainable automotive company.

BMW uses self-regulation to promote sustainability. For instance, BMW complies with all ten principles of the Global Impact and Cleaner Production program under the United Nations Environment Programme. The company was awarded a Green Power Leadership Award by the U.S. Environmental Protection Agency for using landfill gas to power operations at one of its manufacturing plants. BMW continuously strives to manufacture more fuel-efficient automobiles by pioneering electric and hybrid power engines. The BMW group set voluntary environmental global targets for 2020 in the areas of production, products, and value chain:

- Reduction of resource consumption (water, energy, waste, solvents) per vehicle produced by 45% (base year 2006).
- Reduction of product CO$_2$ emissions by 50% (base year 1995).
- Leading in renewable energy usage in production and value chain.
- Pioneer in innovative mobility services.

The company benefits from the sustainable initiatives by making them a part of its strategy and continuously informing stakeholders about their progress through annual reporting. BMW sales reached a record high in March 2012 in part as a result of its sustainability leadership.

Recently, BMW launched a new product line, the company’s first electric vehicle, the **BMW i**. BMW is attempting to establish a corporate profile “that is defined by renewable resources and innovative means of production that have the least possible impact on the environment.”
The engineers at BMW developed an engine that eliminated all tailpipe-emissions common to vehicles, such as carcinogenic volatile organic compounds, smog, and greenhouse gases. The BMW i frame is constructed using Carbon Fiber Reinforced Plastic (CFRP) as a substitute for steel, which is as strong but uses half the weight. The lighter the weight, the further the vehicle can travel with less fuel. CFRP technology allowed BMW to “set new standards in both lightweight vehicle construction and safety.” BMW is spearheading this technology by becoming the first auto-maker to mass produce cars using CFRP. This innovative technology allows for sustainability innovation in the automotive sector, but it is also produced in a sustainable manner. An ultra-modern plant in Moses Lake, Washington, that produces CFRP is completely powered by renewable hydroelectric power.

Questions for Case 1
1. Using concepts from Section 1.2.1 of this chapter, what are the externalities typically associated with automobile manufacture and design that are avoided by BMW’s product and production process innovations?
2. Using concepts from Section 1.4 of this chapter, spell out the business case for an automobile company to pursue sustainable innovation. What would be the primary drivers of innovation? What would be the benefits to the company?

CASE 2

Greening the Game of Golf

Dixon Golf is the world’s first high-performance, environmentally friendly golf ball manufacturer. Based in Tempe, Arizona, the company has been around since 2008, and in 2012 Dixon Golf became the fastest-growing company in the golf industry, hiring 250 people and donating $400,000 to charities. In fact, 10% of all Dixon Golf profits are donated to charity. According to Dixon Golf CEO William Carey, “Nothing makes us more proud than our ability to support the three things that matter to us most: the environment, the economy and charities. We had this idea of saving the world one golf ball at a time, and it has really blossomed.”

Dixon Golf makes every effort to use materials from recycled or renewable sources. Their golf balls are both high-performance (they conform to USGA standards) and 100% recyclable. Dixon Golf hats are made from recycled water bottles, shirts are made from renewable bamboo, product packaging is made from recycled paper and recycled styrene, the office complex is powered by solar panels, and their manufacturing plant emits less air pollutants and uses less water than similar facilities.

In addition to giving to charities, Dixon is also trying to clean up golf’s impact on the environment. Dixon offers a golf ball recycling program through its retail locations that gives golfers credit for returning their old golf balls. Approximately 300 million golf balls, many made from synthetic rubbers and plastics, are lost around golf courses every year, resulting from wayward swings that find a water hazard or similarly irretrievable lie. The typical golf ball will take anywhere from 50 to 500 years to biodegrade.

Entrepreneurs are finding ways to make a profit from cleaning up the environmental impacts of golf. Lost-golf-ball-retrieval companies are sprouting up, finding and reclaiming millions of golf balls every week. Gary Shienfield founded Knetgolf.com, a Toronto-based company that sold 20 million reclaimed golf balls in 2010. According to Shienfield, “In the recession, people are still playing golf, but they’re not so quick to pay $40 for a dozen new, high-end golf balls. Instead, they come to us on the Internet for that ball at $20 a dozen. They are preowned golf balls. They probably bought a preowned BMW, too.”

Shienfield has partnerships with 2,200 golf courses to recover lost balls and has seen recent sales bolstered by customers in India, Vietnam, and Southeast Asia, where the golf industry is growing rapidly and customers are looking for brand name golf balls at a good value.

Questions for Case 2
1. Describe the sustainability commitment of Dixon Golf using the concepts from Section 1.3 of this chapter.
2. Using concepts from Section 1.4 of this chapter, what environmental changes have implications for the golf industry? What kinds of sustainable innovations could be motivated by these changes?
Further Research

Check out “The Business Logic of Sustainability,” a TED-Talk by Ray Anderson, former CEO of Interface Carpet. Anderson was a leader in sustainable business before his death in 2011. His legacy will endure for his personal transformation on the subject of corporate responsibility for environmental impacts, and making the business case for sustainability.

For a short documentary-advocacy video explaining the global overfishing problem, see the YouTube video “Ending Overfishing.”

A classic book on the business case for sustainability is Daniel C. Esty & Andrew Winston’s *Green to Gold: How Smart Companies Use Environmental Strategy to Innovate, Create Value, and Build Competitive Advantage* (John Wiley & Sons, Inc., 2009).

The non-profit Carbon Disclosure Project website hosts a series of video interviews with professionals at businesses from a variety of sectors, explaining their company’s climate change strategy.


Endnotes

3. ibid.
4. ibid.
5. ibid.
9. ibid.
10. ibid.
21. ibid.
24 Daniel Pauly, 5 EASY PIECES: HOW FISHING IMPACTS MARINE ECOSYSTEMS (Island Press, 2010).
28 E. Benjamin Skinner, The Cruelest Catch: In the Waters Off New Zealand, Scores of Indentured Workers are Trawling for Seafood—And You May be Buying It, Bloomberg BusinessWeek, 70–76 (Feb 27– March 4, 2012).
31 Embedding Sustainability in SMEs, ACCA Global Forum for SMEs, Page 4 (November 2012).
34 KPMG, Business Perspectives on Sustainable Growth: Preparing for Rio + 20 Summit Recap, 16 (2012).