

GREEN BUSINESS

Reducing Carbon Footprint Cuts Costs and Provides Opportunities

by Lisa Swallow and Jerry Furniss



Montana businesses are discovering that engaging in sustainable business practices increases worker productivity, reduces costs, preserves the environment, offers opportunities, and provides competitive advantages.

Sustainability – or going green – is becoming a top priority for many of the state’s business managers and owners who have developed green business strategies, implemented green business programs, and hired sustainability coordinators to oversee them. From small operations to high-tech startups and major corporations, Montana’s business sector is using recycled and renewable materials, making investments in energy efficiency improvements, developing innovative technologies to solve environmental problems, and attempting to reduce its carbon footprint.

The impact that businesses have on the environment and society is becoming more important to customers, employees, and investors. Many companies are realizing the significance of this new dynamic and seeing firsthand the impact of not responding to various stakeholder groups. Customers and shareholders are shunning companies that do not include reports about their progress toward sustainability, or good corporate citizenship, or that fail to live up to consumer or shareholder expectations.

At the same time, businesses are experiencing shifts, some radical, in the availability and pricing of natural resources that feed their businesses. Many operations managers are sensing that continued reliance on increasingly expensive fossil fuels puts their current mode of doing business at long-term risk. The imperative to revisit the traditional business model has never been stronger.

The businesses interviewed for this article have adapted to the emerging, green business model and the rewards are proving to be substantial (see sidebars, pages 5-9).

Balancing Economic, Social, and Environmental Goals

Sustainable development, or “meeting the needs of the present without compromising the ability of future generations to meet their own needs” was the theme of *Our Common Future*, the 1987 report prepared by the World Commission on Environment and Development. Known as the Brundtland Commission (so named after its chair, Norwegian Prime Minister Gro Brundtland), the group examined escalating concerns about deteriorating global ecosystems and the potential impact on human development, biodiversity loss, degraded watersheds, and declining fisheries/forests. The resulting report was a clear directive: The international community must set a long-term agenda for action that balances economic, social, and environmental goals, or recognize that the future of the planet and its people could be significantly impaired.

The idea of social justice (consumer rights, sweatshop-free work environments, etc.) as an integral component of a business model was acknowledged only by the most progressive forerunners – Yvonne Chouinard of Patagonia and Ray Anderson of Interface Carpets, for example.

Over time, companies began to realize that three equally important and interrelated “bottom lines” need to be maximized to achieve true long-term sustainability. The “triple bottom line” (also referred to as the 3 Ps and the 3 Es) captures the idea that a sustainable business considers the needs of

all stakeholders – the people, the planet, and organizational profitability – instead of solely maximizing profits for shareholders. Here is how the various terminology relates:

Three Ps	Three Es	What is it?
People	Equity	Human capital
Planet	Environment	Natural capital
Profit	Economics	Financial capital

Analyzing business strategies, products, and processes through a triple bottom line lens is helpful for businesses pushing toward sustainability.

More Consumers Preferring Green Products

More and more customers are switching to competitors that are making moves toward a sustainable mode of operation. The 2011 ImagePower Green Brands Survey of more than 9,000 people in eight countries (conducted between April and May 2011) revealed a number of key findings related to sustainability and consumer interest, including:

- The majority of consumers across all countries surveyed say it's important to buy from environmentally friendly companies;
- Green certifications found on packaging influence buying behavior;
- Consumers in developing countries are more willing to pay a premium for green products (in the U.S. 20 percent of consumers are willing to spend more than 10 percent more on green products);
- Consumers buy more green products in the grocery industry than other sectors, and there is an indication that green products in the technology and auto industries will be on the increase;
- In the U.S., 72 percent of consumers believe it is important to buy from green companies, and 30 percent plan to spend more on green products in 2012;
- In the U.S., consumers view energy use and chemicals, toxins, and heavy metals as the most significant green issues;
- The largest challenge to businesses in the U.S. when marketing green products to consumers is the extra cost when compared to the non-green alternative; and
- Some of the top green brands among U.S. consumers include Seventh Generation, Whole Foods Market, Tom's of Maine, Burt's Bees, Trader Joe's, Walt Disney, SC Johnson, Dove, Apple, Microsoft, and Starbucks.

As millennial consumers age and have more disposable income, the value of a company having a green image will likely increase dramatically.

Growing Trend Toward Sustainability Strategies and Reporting

More businesses are finding that developing a sustainability strategy and reporting such results make good business sense as well. Sustainability reporting is now becoming mainstream with the Fortune 500 companies. According to KPMG's International Survey of Corporate Responsibility Reporting (completed triennially), in 2008, 80 percent of such companies issued sustainability reports.

"The evidence that sustainability is becoming a core consideration for successful businesses around the world grows stronger every day," according to a 2011 jointly-issued progress report by KPMG and *The Economist*. "Leading global brands such as Procter & Gamble, Anheuser-Busch InBev, UPS, or CLP Holdings are examples of market leaders that are setting the pace and standards by which their peers will soon be held accountable."

According to the Oct. 10, 2010, Economist Intelligence Unit survey of global businesses (a survey of 378 senior executives encompassing a range of industries and evenly split among North America, Asia Pacific, and Europe), 62 percent of companies represented have a strategy for corporate sustainability, up from 50 percent in 2008. Only 5 percent of companies without plans had no intentions to create such plans. The survey also revealed that larger, publicly listed firms are more likely to develop a sustainability strategy than smaller, privately held firms (79 percent versus 49 percent). It is noteworthy that among consumer goods firms, 80 percent have developed a sustainability strategy. This may indicate the impact of consumer pressure on firms that have more day-to-day product contact with consumers.

In an environmental ranking of the 500 largest publicly traded U.S. companies, *Newsweek* assigned green scores to companies derived from three component scores: the environmental impact score, the green policies score, and the reputation survey score (Table 1, page 4).

Evidence of the growing significance being placed on sustainability can be found in the corporate world by the



**Table 1
Green Rankings: U.S. Companies
Top 15, 2010**

Rank	Company	Industry Sector	Green Score	Environmental Impact	Green Policies	Reputation Survey
1	Dell	Technology	100.00	81.49	100.00	84.33
2	Hewlett-Packard	Technology	99.32	90.60	94.09	95.35
3	International Business Machines	Technology	99.20	98.71	89.52	98.42
4	Johnson & Johnson	Pharmaceuticals	99.02	74.95	98.86	80.34
5	Intel	Technology	97.57	95.74	88.79	92.71
6	Sprint Nextel	Technology	94.98	99.70	94.58	44.72
7	Adobe Systems	Technology	94.15	89.61	88.08	72.57
8	Applied Materials	Technology	92.67	91.98	87.33	60.06
9	Yahoo!	Technology	92.67	68.62	89.07	59.74
10	Nike	Consumer Products	92.66	67.63	77.53	97.39
11	Accenture	Industrial Goods	92.04	89.80	84.63	65.89
12	Advanced Micro Devices	Technology	91.17	99.51	81.46	55.78
13	Cisco Systems	Technology	91.07	69.41	77.56	83.87
14	Johnson Controls	Consumer Products	90.94	90.79	81.73	64.97
15	Baxter International	Health Care	90.59	91.78	81.80	61.02

Source: 2010 Green Rankings, Newsweek (www.newsweek.com).

elevation of sustainability to the “C-suite.” During the Information Technology (IT) revolution, companies added the executive-level position of the Chief Information Officer (CIO) to the list of existing executive level positions – the Chief Operating Officer (COO), Chief Financial Officer (CFO), Chief Executive Officer (CEO) – and now, as sustainability comes of age, companies are creating the position of Chief Sustainability Officer (CSO). On May 19, 2011, Coca-Cola named its first CSO to head its new global Office of Sustainability.

Competitive Advantages of Going Green

For companies straddling the sustainability divide between ideology and operational changes, it is important to convey exactly how the sustainability movement will enhance commercial value. The rationale for moving toward greener pastures can be clearly outlined with a ubiquitous business case for change. The way each organization pursues some or all of these sustainability tenets, however, will look radically different. The sustainability driver varies by company – ranging from regulatory environment to visionary leaders or competitive pressures – but the benefits of going green are patently similar. Originally released by Bob Willard in 2002, “The Sustainability Advantage” compels even the most reticent executive by outlining the quantitative and qualitative benefits that accrue to a company from sustainable practices (Willard, 2002).

Following are some of the advantages of becoming a sustainable business.

Increasing Market Share and Diversifying Product Lines through Sustainability Innovation. *Harvard Business Review’s* 2009 portrait of 30 large corporations dedicated to greening research and development efforts indicates that early adopters of sustainability principles are developing competencies that competitors will be hard-pressed to match (Nidumolu, Prahalad, and Rangaswami, 2009). The authors’ research findings aptly summarize sustainability as a key driver of innovation.

“Our research shows that sustainability is a mother lode of organizational and technological innovations that yield both bottom-line and top-line returns. Becoming environment-friendly lowers costs because companies end up reducing the inputs they use. In addition, the process generates additional revenues from better products or enables companies to create new businesses. In fact, because those are the goals of corporate innovation, we find that smart companies now treat sustainability as innovation’s new frontier.”

In Missoula, Rivertop Renewables’ innovations in chemistry are opening markets ranging from dishwashing detergents to de-icing additives (see sidebar, page 5). Near Havre, cutting edge technology is allowing the East End Colony to grow salmon in tanks in a process that has been rated as environmentally friendly and sustainable. Large corporations like Walmart and Target exclusively purchase seafood products that are sustainably harvested, effectively changing vendors’ fishing practices on a global level and offering opportunities to innovative companies. (see sidebar, page 7).

Rivertop Renewables

Innovations in Chemistry Opening New Markets

Do your drinking glasses look cloudy and dirty even though they have just gone through the dishwasher? Chances are they are not as sparkly as they used to be because the nation's dishwasher detergent makers are reformulating their products to reduce what has been the crucial ingredient, phosphates, to just a trace.

Manufacturers are facing increasing scrutiny over phosphate use, which can linger in water supplies and have negative impacts on ecosystems, killing fish and plants. Companies like Procter & Gamble are desperate to find a solution, and the chief financial officer of Missoula's Rivertop Renewables thinks he has an answer.

Rivertop President and CFO Jere Kolstad, who grew up on a farm in Glasgow, Montana, says that his company's technology allows the manufacturing of environmentally neutral products made from simple plant sugars that will solve many problems.

Rivertop Renewables grew from research at The University of Montana and was founded by Don Kiely, a former UM chemistry professor who developed the technology over a 40-year period.

Industrial chemicals like phosphates and petrochemicals – used in products like detergents, road de-icers to melt snow and ice, fire retardants, and cosmetics – pollute the environment and lack biodegradability.

“There are big black problems like these all over the place where the reward for solving them is huge,” Kolstad says. “Green businesses offer huge opportunities.”



Rivertop recently received a \$3.5 million grant to build labs, offices, and “semi-works” in its Montana Technology Enterprise Center, or MonTEC, location. Out of that \$3.5 million, \$1.75 million came from the U.S. Commerce Department's Economic Development Administration, and the other \$1.75 million came from a matching grant from UM. Rivertop will add an additional \$2.5 million in private capital to equip its new labs and semi-works area at the MonTEC facility.

Every week, a major corporation – like Nike, Sherwin Williams, Dow Chemical – contacts Rivertop to talk about the green solutions the Missoula company offers.

Kolstad says that entrepreneurs need to have a vision of 10 to 50 years down the road to be successful. He expects Rivertop's sales to reach \$100 million by 2015.

Other examples of using sustainability principles to find market opportunities and enhance competitive advantage include:

- Businesses with existing products are rolling out complementary green product lines. Check the local grocery store to see premium shelf space increasingly allocated to natural body products and local and organic food/wine/ brews.
- Energy audit and monitoring companies are experiencing significant growth because of increasing consumer demand for tightly-managed energy usage in their homes and businesses.
- Organizations designed to maximize a business operation's value, or supply chain, are popping up everywhere. For example, under the Western Sustainability Exchange's “Steer to Steak Program,” ranchers following certain sustainability practices are assisted in converting their cattle into a market-ready product (beef) destined for premium-based markets for sustainably raised cattle.
- Competitive advantages that accrue from designing products for the green era are clearly demonstrated by simply looking around Montana cities. The influence of sustainability-minded architects and green builders is evidenced by the fact that Montana has 28 certified Leadership in Energy and Environmental Design (LEED) buildings and nine residential homes.

Capitalizing on Green Branding and Imaging. The emerging demographic of green consumers has golden purchasing patterns, worthy of concentrated attention by marketing campaign designers (Deloitte Touche, 2010). These “conscious consumers” spend an above average amount at point of sale, are intensely loyal to their brands, are highly educated, and are not as susceptible to price point changes as other sectors. The number of vibrant companies designing for consumers' desires for the next



Missoula Federal Credit Union Work Environment Positive and Productive in Green Building

Some employees like the natural light and comfortable work spaces. Some like the open, airy space and the community artwork on the walls. Most like the fact that the materials used in their workplace are recycled, reusable, and renewable – and green.

When employees are in a building eight to ten hours a day, lighting, heating, cooling, and a comfortable work environment are important, according to Joni Walker, senior vice president of the Missoula Federal Credit Union.

Employee comfort was something the designers, architects, and credit union managers spent a lot of time thinking about before beginning the green building process on the Russell Street site. The Russell Street branch, which opened its doors in 2009, earned the first Leadership in Energy and Environmental Design (LEED) platinum certification in the state.

LEED is an internationally recognized green building certification system, which rates buildings on energy savings, water efficiency, indoor environmental quality, and commitment to using renewable and local materials. Platinum is the highest rating.

Employees are productive and happy in their green environment, Walker says. In fact, there is a waiting list of employees from other branches who want to transfer to the Russell Street branch.

Managers are pleased, too. Because of the innovative ideas implemented in the building – such as solar panels and other energy efficiency measures – managers expect to reduce long-term operational expenses, Walker says.

The senior vice president enjoys telling the stories about the building. For example, instead of using cement, contractors used fly ash (a waste product of coal-fired power plants) and recycled glass aggregate “concrete.” For framing and trim, they used sunken logs exposed during the removal of the Bonner and Milltown dams. Native and drought-tolerant plant species that will not require permanent irrigation systems were planted around the building. Bicycle storage and showering facilities were provided to encourage non-vehicle transportation to work.

“We want to be doing things that aren’t going to be harmful and that will be beneficial to our communities,” Walker says. “We just added sustainability to our mission statement, and that is a huge step because it reinforces how important sustainable business practices are for us.”

generation of energy- and resource-efficient products, is growing accordingly. Membership-driven organizations like Billings' Green Directory Montana and Missoula's Sustainable Business Council are linking customers with companies and contributing to another critical sustainability concept: buying locally.

Capitalizing on Eco-Efficiencies. Arguably the easiest path for enterprises just starting the sustainability process is the notion of being more environmentally efficient. Regardless of product line, if a company can reduce its use of water, energy, raw materials and/or generate less waste, operational expenses will decrease. Using recycled materials, reducing reliance on virgin nonrenewable resources, and installing simple energy-saving devices and lighting retrofits can have very short payback periods. Some of these are done with little initial cost or time investment and others are subsidized by significant tax credits, making it easier to invest in higher cost projects at the front end. Even more

interesting, these projects show strong triple bottom line results as they decrease waste, reduce carbon emissions, and diminish water usage. Oftentimes, newly employed specialists in energy retrofitting or alternative energy installation are employed, thereby maximizing the "people" portion of the triple bottom line as well.

Reduced Risk and Easier Financing. Enhanced accessibility to discounted costs of borrowing money can be advantageous for businesses with sustainability characteristics. Increasingly, risk models indicate that businesses that have sustainability practices in place such as climate change mitigation plans, alternate raw material options, and access to renewable energy and local markets are less risky and therefore should be valued accordingly. These businesses are often more appealing to new investors and may enjoy increasing access to capital. In fact, a growing number of venture capitalists and traditional banks focus only on companies that can demonstrate triple bottom line performance.

East End Colony Salmon Farm

Hutterites Use Cutting Edge Technology to Raise Salmon Sustainably



Far from the ocean, at the East End Hutterite Colony just north of Havre, 50,000 salmon are growing in one of Montana's first commercial fish farms.

Mark Waldner, the fish farm manager at the East End Colony, says the colony received the salmon eggs and the equipment to raise the fish a few months ago from AquaSeed Corp. in Seattle. The colony's neighbors, the Miller Colony near Bynum, began their salmon operation in December 2010.

While it may seem odd to raise salmon far away from salt water in a land-locked state, it probably will be happening more frequently. Within the past year, the Monterey Bay Aquarium Seafood Watch approved a land-based approach to raising salmon using tanks and filters and rated it as one of the most environmentally friendly and sustainable methods.

High-end restaurants and large corporations such as Walmart and Target have pledged to buy only sustainable fish after the controversy over farm-raised fish that are grown in large open-ocean aquaculture pens. The practice has been criticized because the nonnative species can escape into the ocean, spreading disease to other fish and polluting the water with sea lice. Another major criticism about farm-raised salmon is that it can take up to five pounds of wild fish as a food source to produce one pound of salmon – a rate that does not make sense when considering sustainability.

At the East End Colony, the salmon grow in steel tanks, which are 30 feet in diameter. Innovative technology, which AquaSeed Corp. developed, filters the waste from the water and re-creates a stream. The water is continuously circulating and going through a number of cleaning processes. The Washington-based company advocates a special fish food, which uses a minimal amount of fish, along with beans, grains, and other protein.

Raising salmon seems like a good idea for the colonies to supplement their income that comes from crops and livestock, Waldner says. It takes the salmon a year to get to 6 pounds, at which point the colony will sell them back to AquaSeed Corp. to market to the food service industry.

"The U.S. is importing millions of pounds of seafood per year," Waldner says. "Why not do it locally and sustainably without depleting the oceans?"



Kettlehouse Brewing Co. Local Brewery Gives Back to Community

In the summers, their customers come in off the river – suntanned, wet, happy, and thirsty. In the winters, they come off local ski hills – wind-burned, cold, happy, and thirsty. Many of their customers are outdoorsy, environmentally minded, and always in search of a good, cold, locally brewed beer.

“We make products that jibe with our clientele’s belief systems,” says Al Pils, who specializes in sales at Missoula’s Kettlehouse Brewing Co. Some of the brews are outdoor-themed: “Eddy Out” is a coppery pale ale and has a kayaking or boating reference (pull off the river into the eddy). “Cold Smoke” is a hearty ale that has a skiing reference (cold referring to snow and smoke referring to powder) and is “perfect after a day of rippin’ lines on area or your favorite backcountry getaway.” “Double Haul” is brewed with lots of hops and solid body and is named after a fly-casting technique.

Reusable and recyclable products are of utmost importance to the Kettlehouse’s customers, who often ride their bikes to the brewery to conserve on driving. With two locations in Missoula, customers can have a pint or two in the taproom and then fill up their reusable

growlers to take home. The Kettlehouse also sells its beers in cans, which are, unlike glass, “river-safe, camping-safe, not breakable, and easily recyclable,” Pils says. Glass recycling is limited in Missoula.

Because of the Kettlehouse’s dedication to using Montana-grown malted barley, the brewery received a Growth Through Agriculture Program grant from the Montana Department of Agriculture to further develop its business.

In addition to using locally grown products, the Kettlehouse believes in giving back to the community. Every Wednesday night, the brewery hosts a different community group, donating 50 cents from every pint sold back to the nonprofit organization that is holding the social.

Employee turnover at the Kettlehouse is low, Pils says. Employees like working for a company that has sustainable values and is engaged in green business practices, and they want to stay around. Even though it is expensive for small businesses, the Kettlehouse offers employees health and dental insurance, which may be another reason employees stay.

Finding and cultivating top-notch talent. Employment costs (particularly recruiting and retention) decrease in sustainably-minded companies. Research shows that green facilities such as the Missoula Federal Credit Union contribute to enhanced productivity, and highly-evolved sustainable organizations like the Kettlehouse boast almost no turnover, greatly reducing human resource costs. Vibrant employees

migrate to areas that are known for their green ethos and contribute to robust growth in the number and diversity of green businesses. The Montana university system continues to build curriculums devoted to energy technology, climate change studies, green building, and sustainable business, which positions Montana to attract companies needing employees with these skill sets.

St. Patrick Hospital

Sustainability Practices Save Money and Improve Environment

St. Patrick Hospital has won gold for being green. The Missoula hospital recently received the national Healthy Hospital Gold Award for saving \$352,293 and diverting more than two tons of single-use devices from landfills in 2010.

Because of excessive energy needs, toxin use, and waste production, the health care industry makes significant negative impacts on the environment. Beth Schenk, coordinator of the Women's Health program and the sustainability coordinator for St. Pat's, is proud of the progress the hospital has made in greening up its operation.

St. Pat's won the award for keeping medical waste – like used surgical gloves, bandages, needles, and surgical instruments – from the landfill by recycling and reusing items. While most medical waste must be thrown out, the Environmental Protection Agency has a list of medical equipment that can be recycled. St. Pat's won the award from Ascent Healthcare Solutions, the leader in reprocessing and remanufacturing medical devices in the U.S. By recycling and reusing, the hospital also saved more than \$300,000.

Last year, St. Pat's was able to keep 31 percent – or 281 tons – of all waste out of the landfill, Schenk says, adding that her goal is to get it up to 50 percent.

In addition to reducing waste, conserving energy is a top priority at the hospital, and she estimates that St. Pat's will save nearly a quarter of a million dollars per year because of investments in energy-efficient systems.

Sustainable practices are important to St. Pat's employees, who do what they can to reduce the hospital's

ecological footprint by walking, bicycling, and carpooling to work, as well as recycling and conserving energy.

Employees are passionate and management is supportive of making the hospital a greener and healthier place to work, Schenk says. As an experimental project, St. Pat's planted a small patch of sedum on the rooftop. "Living roofs" are sometimes installed to provide climate control effects and encourage urban biodiversity, but the experimental patch is too small to have that effect.

"Right now, it just for fun and brings a little bit of nature to the staff and public," Schenk says.

Like many large corporations throughout the nation, St. Pat's has a greening strategy and completes a sustainability report. The report lists St. Pat's core value of stewardship as: "We strive to care wisely for our people, our resources, and our earth."



Sustainability Planning for the Future

Corporate sustainability is a proactive and efficient approach to decreasing organizational exposure to the changing landscape and is becoming increasingly critical to companies interested in strategic positioning for the future.

Focusing on simply complying with regulations seemed adequate in the last century; however, a majority of the Fortune 500 companies and progressive Montana entities like The University of Montana and the City of Bozeman are actively looking toward the future through sustainability planning. Both have conducted greenhouse gas inventories and have prepared Climate Action Plans, which serve to reduce pricing risk for future bonding and budgetary purposes, prioritize capital projects, and project operational needs/costs more efficiently.

Although a sustainable business strategy may be considered novel in some venues, many of the strategies employed and benefits derived from this approach are just common sense. Sustainable development is about acknowledging limits and envisioning the future accordingly. □

Lisa Swallow is a professor at The University of Montana College of Technology. Jerry Furniss is a professor at The University of Montana School of Business Administration.

References

- Nidumolu, Ram, C.K. Prahalad, and M.R. Rangaswami. 2009. "Why Sustainability Is Now the Key Driver of Innovation." *Harvard Business Review*.
- Deloitte Touche. 2010. "Sustainability in Business Today: A Cross-Industry View."
- Willard, Bob. 2002. "The Sustainability Advantage: Seven Business Case Benefits of a Triple Bottom Line."