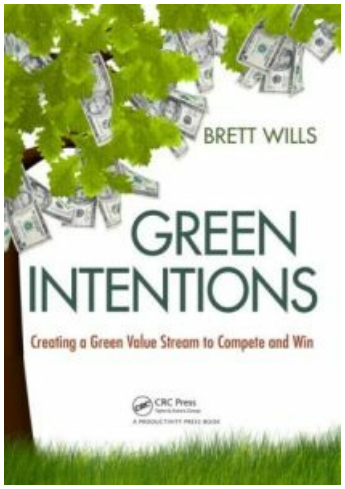

Book Green Intentions

Creating a Green Value Stream to Compete and Win

Brett Wills
Productivity Press, 2009
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Recommendation

Companies that go green benefit from a wide range of competitive advantages, including long-term cost reduction and new commercial opportunities. Today, customers and employees expect – indeed, demand – that organizations improve their environmental practices. The best way to move ahead, according to Brett Wills in this hands-on book, is becoming "lean and green." Wills guides you through the specific steps your firm must take to achieve environmental sustainability. Cleaning up the Earth will require real effort on the part of the business community. *BooksInShort* thinks this manual gives you some helpful ideas on how to get started, and recommends it to executives and operations managers.

Take-Aways

- Environmental management must become a core aspect of your company's strategic plan.
- Your organization can bring about positive, meaningful environmental change.
- Environmentalism makes sense financially, competitively and ethically.
- Government leaders and activists alone cannot restore the environment. Businesses also need to participate.
- Your customers and employees will support your sustainability efforts.
- Environmental management demands superior execution.
- Green initiatives require strong CEO backing.
- Most companies waste "energy, water, materials, garbage, transportation, emissions and biodiversity."
- Target these areas with your sustainability programs.
- Map your operations in terms of your firm's "green value stream."

Summary

Green Is Great

Sound environmental management practices can help protect the Earth from pollution and contamination. In 1987, activists and government leaders came together to create the Montreal Protocol, an agreement to eliminate CFCs – chlorofluorocarbon gases that deplete the ozone layer. As a result, the dangerous hole in the ozone layer that CFCs caused now grows smaller each year. In time, it will disappear. However, politicians and activists cannot halt other kinds of environmental degradation by themselves.

> "The greening of manufacturing is no fad."

The business community must become involved. Unfortunately, many executives believe that going green is wildly expensive and laughably impractical, and that it will not make a substantial difference anyway. They are wrong. Environmental management makes eminent business sense. Cutting waste can vastly improve your bottom line. Green companies will surpass and even lap their nongreen competitors. Despite their current state of denial, stuck-in-the-mud firms will eventually have to go green, either because of legislative fiats or changing environmental conditions. The strong business case for sustainability includes these factors:

- **"Cost savings"** – Using less material and energy means reduced costs.
- **"Customer loyalty"** – Research shows that a majority of consumers now alter their buying habits to have a positive impact on the environment.
- **"Employee satisfaction"** – The same research indicates that nearly eight out of 10 employees want to work for firms that are environmentally responsible.
- **"Ability to grow"** – In a world of increasingly expensive resources, such as petroleum, companies that use "ecofriendly" alternatives will thrive.
- **"Innovation and development of new technologies"** – Going green, like any successful business strategy, requires a commitment to innovation.
- **"Increased profit and shareholder value"** – Research shows that large companies that go green increase their profits on average by 38% during a five-year period.

"Lean and Green"

Toyota's famous lean production system focuses on seeing operations and activities from the customer's point of view and eliminating anything that doesn't add customer value. Developing environmentally sustainable business practices requires a similar approach. Analyze your company's operations strictly from an environmental perspective. Minimize, mitigate or eliminate anything that does not contribute value.

> "Customers are increasingly searching for products that leave a minimal environmental footprint." [– Jayson Myers, president of Canadian Manufacturers & Exporters]

To use this "green value stream" (GVS) approach, establish specific checkable criteria. For example, in lean management, the seven most common "waste" areas are "inventory, movement, defects, transportation, overproduction, excess processing [and] waiting." In green management, they are "energy, water, materials, garbage, transportation, emissions and biodiversity." To blend this green approach into your lean management system, add "environmental impact" to your list of sources of waste.

Green Value Stream

A value stream is the flow of activities that supports production: "operations, accounting, human resources, customer service and so on." "Pure" value stream activities concern only production; for example, in the case of a metal furniture company, these activities include welding, preassembly and painting. The lean approach attempts to eliminate waste from all production and support activities. In production, the green value stream could include the energy necessary for welding or for running machinery. In operations, it includes paper consumption and the vehicle emissions associated with transportation to business functions.

> "We can deal with and develop solutions for the environmental issues we face today."

The GVS process involves these seven elements:

1. **"Management support"** – Without it, no green initiative will ever get off the ground.
2. **"Perceptual shift"** – View everything in relation to its environmental consequences.
3. **"Seven green wastes"** – Detail individual wastes and how your company plans to reduce or eliminate them.
4. **"Current-state green stream map"** – Create one by identifying and measuring each kind of waste.
5. **"Future-state green stream map"** – Depict the GVS with wastes minimized.
6. **"Total waste elimination"** – Strive toward this goal.
7. **"Supply chain"** – Promote the GVS approach to every node of the chain.

> "From a green perspective...energy represents one of the largest areas for improvement and savings."

Diagram your GVS on a chart. This green stream map will help you track the occurrence and impact of waste. Depict production and support activities, such as the movement of supplies and finished products. List the "green waste" related to each step and assess or measure it. This will give you a current-state green stream map. To set goals, create a parallel future-state green stream map that includes minimizing all wastes, with the eventual goal of eliminating them and putting your company in a perfect "green state."

"Life Cycle Analysis"

Establishing a robust "green vision" for your organization requires the full support of management. Without it, you will get nowhere. Consider conducting a complete life cycle analysis (LCA) to measure the "total environmental impact throughout the entire life cycle of a product, service or project." Do not engage in "greenwashing" – making exaggerated or false claims of environmental sustainability.

> "If you are using a contaminating material or chemical, is there a substitute you could use?"

Appoint a "green champion" to take charge, and consider establishing a "green team" that includes the green champions from different departments. Make sure they have complementary skills. Sometimes, a "bottom-up approach" based on a test project works best: Start your environmental improvement activities in one area. However, remember that a perfect green state is your ultimate goal.

"The First Green Waste: Energy"

Find alternative energy sources that do not harm the environment. If you can produce your own power, for example, by using solar panels, you won't have to pay for it. Google built the "largest solar power system ever installed at a single corporate campus" – the Googleplex in Mountain View, California. The company saves $393,000 each year in energy costs.

> "By cleaning the water you discharge, you are able to use it again and avoid some of the fees and levies associated with discharging contaminated water."

To avoid wasting energy, "identify the use and source of energy in each activity in your value stream." This includes all "equipment, machinery, motors" and so on. Calculate each device's power consumption with the energy-usage data on equipment nameplates or with energy meters. Minimize energy usage through conservation and energy-efficient technologies. Offset the remaining energy that you use by investing in wind farms, for example. Move to renewable sources whenever possible; solar is a top choice.

"The Second Green Waste: Water"

Every drop of wasted water costs you money. You must clean toxic wastewater, another financial consideration. Use water-efficient fixtures. If your municipality permits it, harvest rainwater. Stop all leaks. To reduce water usage, follow these three steps:

1. Identify all sources and uses of water.
2. Measure water consumption at each node in the value stream.
3. Minimize water usage throughout your corporate headquarters and production facilities. Calculate and minimize the toxicity of your water discharge.

> "Many times, the presence of recycled material will be indicated right on the material or packaging."

Your employee-facilities manager and local water provider can help you measure your water usage. For a reasonable fee, a water management expert can help your company reduce its water consumption. You may also need to retain a specialist to test your wastewater for toxins and to help you minimize or even eliminate those toxins, for example, by using substitutes for "contaminating material." The best way to cut water usage is to reuse water. In Australia, Carlover's Carwash recovers and reuses 80% of the water its 87 stations discharge, saving it a great deal of money – and a billion liters of water annually (equivalent to approximately 264 million U.S. gallons).

"The Third Green Waste: Materials"

Nonrecyclable and nonbiodegradable products end up in landfills. When you recycle, you not only spend less on raw materials but you also help the environment. Establish a "cradle to cradle" cycle for materials – "return all your outputs either back into your value stream...or back into the earth as a nutrient."

> "If you were to throw a piece of steel or plastic into a field or lake, what would be the consequence? Would a tree, plant, fish or other animal die or be deformed? Would it negatively impact human health?"

To determine what materials you use, secure a bill of materials (BOM) for your products from your purchasing manager or a design engineer. If no BOM exists, monitor each value stream activity. Classify all "materials going in and coming out." Materials that are recyclable are either "biological nutrients" ("material used by living organisms or cells to carry on life processes") or "technical nutrients" ("material of human artifice designed to circulate within technical metabolism [industrial cycles] forever").

"The Fourth Green Waste: Garbage"

Why pay a refuse company to haul away your company's garbage when you can cut down on garbage by using "recyclable, reusable or biodegradable packaging materials." Recycle materials left over from production and "used-up items such as tools, jigs, oils and solvents." Many firms achieve "100% reusable or biodegradable garbage" by using garbage to power their operations.

> "Materials used in the overall building to support the value stream are now oftentimes available as 100% recycled or biodegradable."

Involve your waste removal vendor in your garbage-reduction activities. For example, the vendor can determine which refuse is recyclable. Choose an efficient vendor: Some perform better than others because they have developed recycling relationships with "end-user companies."

"The Fifth Green Waste: Transportation"

Cut down on transportation costs by sourcing and producing materials locally, reducing business travel and transmitting documents electronically. Equip your fleet with hybrid vehicles and other environmentally friendly transportation modes. If you're in an urban area, use bicycle couriers. Employ a "transportation demand management" approach, coordinating and consolidating shipments in and out.

> "If we don't change the way we are doing things, eventually there won't be any more of the materials we need to make our products."

Doing fewer rush orders can save you a great deal on transportation costs. So, too, can cutting back on packaging. Exploit new technologies such as video conferencing to reduce business trips. Allow workers to telecommute, and organize carpools. Refer to the "Consumer's Guide to Carbon Offsets for Carbon Neutrality" on the Web site of the group Clean Air-Cool Planet to find the ideal offset vendor.

"The Sixth Green Waste: Emissions"

Save money and eliminate regulatory fines and fees by replacing polluting elements in the production chain with nonpolluting alternatives. Before you start your value-stream analysis, make sure that all your equipment and manufacturing processes work efficiently. Often, companies find that emissions result from poorly functioning or

badly maintained equipment.

> "Although a few nongreen companies will survive, most will eventually perish."

After you identify the sources of all emissions using the GVS approach, check with suppliers to determine if they can provide alternatives. Or, you may be able replace the activity itself. For example, "could air-drying substitute for baking an epoxy?" Offset the "negative environmental impact" of the emissions you cannot reduce or eliminate.

"The Seventh Green Waste: Biodiversity"

When you build, don't indiscriminately destroy the "flora, fauna and organisms" that protect the environment and your facility – for example, the local watershed and tree cover. Minimize construction damage to the environment whenever possible. Regenerate what you destroy. If you cut down 20 trees, replace them with another 20 trees. Aim to replace 100% of the biodiversity you eliminate. The result will be a more pleasing natural landscape, better storm-water management, decreased "heating and cooling costs," and savings on "fees, permits and fines." Developing an accurate assessment of "biodiversity destruction" can be a challenge. Hire a "specialized biologist" or other expert scientist to aid you in the effort.

About the Author

Brett Wills is a "lean and green" initiative expert with more than a decade of experience.
