COMMUNITY ESSAY

Product stewardship in the United States: the changing policy landscape and the role of business

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Author’s Personal Statement:

Since I came to the United States almost twelve years ago, I have been astonished by the rate of consumption and the enormous amount of waste generated by people and organizations. Could Americans wake up one day without electricity, gasoline, or bread, as happened to many Eastern European countries in the early 1990s? It was a tough lesson that many people of my generation will never forget. It is clear to me that the current rate of consumption and environmental pollution is unsustainable. Every few years, people change cars, computers, televisions, other appliances, and even their homes! It is often said that if every person on this planet consumed like Americans, we would need several planets Earth. But why should people in other countries not have the right to own a car, travel to exotic destinations, and purchase prepackaged food, modern appliances, and toys for their children?

As an engineer and scientist trained in cleaner production, I have always believed in the unlimited potential of human-kind to find solutions to seemingly unsolvable problems. But we need to have the right incentives. This does not mean people and organizations should not change their consumption patterns, but rather that we can build the economy from a systems perspective, considering the entire lifecycle of products and services and the social, economic, and environmental impacts of our actions today and in the decades to come. The current global recession makes it even clearer that a systems approach is critical going forward to ensure stable and sustainable development in an increasingly interconnected world. Business, government, and civil society organizations all need to work together to design the rules of the new economic system where products last longer, have no toxic chemicals, and are reused and recycled; society as a whole consumes less; and people spend more time with family and friends and less time working to maintain their “standard of living.”

Back in 2001, the Product Stewardship Institute (PSI) convened its first dialogue around electronic waste issues and began to explore the challenges of handling leftover paint. Seven years later, the Fourth PSI Forum was an exciting and overwhelming experience. Despite a lack of federal regulation, business in the United States is beginning to work with federal and state governments to address product stewardship and companies are taking increasingly active positions. In the current economic downturn, and with the new White House administration, product stewardship issues will be an even more important source of competitive advantage (Economist Intelligence Unit, 2008). This essay provides an overview of the changing policy landscape in the United States, reviews some emerging practices, and explores the role of business in product stewardship.

What is Product Stewardship?

The PSI defines product stewardship as “a principle that directs all participants involved in the life cycle of a product to take shared responsibility for the impacts on human health and the natural environment that result from the production, use, and end-of-life management of the product” (PSI, 2008). The main objective of product stewardship is to promote waste reduction by encouraging manufacturers to redesign products so they contain fewer toxics, last longer, can be reused and recycled, and/or contain recycled materials.

The PSI was created to alleviate the financial and logistical burden of managing waste on state and local governments. As of November, 2008, PSI membership included 45 states and 60 local governments (representing over 85% of the United States population) and had recently expanded to create an adjunct council comprising 30 businesses, environmental and academic organizations, and other stakeholders. Through conference calls, meetings, and information exchange, PSI has helped consensus building, policy development, and regulation adoption in many states.

1 For information on past dialogues, potential new product initiatives, or details on membership in PSI’s Adjunct Council see the...
In most cases, the process begins with a regulation overseas, typically in the European Union (EU), which The Economist (2007) calls “the world’s chief regulator.” Rules such as the EU Waste Electrical and Electronic Equipment (WEEE) Directive, the Restrictions of Hazardous Substances (RoHS) Directive, the End-of-Life Vehicle (ELV) Directive, and the Packaging Directive have been quickly adopted by other countries, including Canada, China, Japan, Korea, and Australia. Typically, some American states such as California, Minnesota, and New York then begin introducing similar bills. For example, in the electronics waste area—the first issue tackled by PSI—as of November, 2008, 16 states and New York City had already passed laws on electronic waste and more than 15 other states were considering such bills (Electronics TakeBack Coalition, 2008).

The Role of Business in Product Stewardship

Whether realizing it or not, companies play an important role in shaping the product stewardship policy landscape. PSI has shown that successful initiatives require the involvement of all key stakeholders, such as manufacturers, retailers, recyclers, governments, nongovernmental organizations (NGOs), and others. On the one hand, successful policies require building a consensus around responsibilities, performance goals, incentives, and implementation. If a state or local government drafts a bill, lack of agreement with key industry players may lead to aggressive lobbying and defeat. On the other hand, without business input, regulators might support a bill that is either unfeasible or can hurt local businesses.

While European companies have traditionally been more supportive of environmental regulations, American businesses have preferred voluntary initiatives (see the carpet take-back program described in Box 1). Historically, the United States federal government has also avoided environmental protection or health and safety issues, because “most government leaders believed that this responsibility should be chiefly shouldered by private industry, the states, and professional organizations” (Geiser, 2001). Moreover, many economists, policy makers, and businesses in the country believe that environmental regulation retards productivity despite numerous studies demonstrating the opposite (e.g., Jorgenson & Wilcoxen, 1990). This view is, to some extent, related to the burdensome and highly prescriptive and complex regulations like Best Available Control Technology (BACT) that have been previously implemented in the United States. By comparison, regulations in Europe have generally been simpler and more flexible, based on setting goals and targets and letting businesses decide how to get there (Vig & Faure, 2004). One example is the standard for occupational exposure to cadmium; the provision is about 15 pages long in Sweden versus several hundred in the United States.

At the same time, individual American states continue to lead the way with environmental regulations and this approach poses a logistical difficulty for many American companies (Rabe, 2004). Having to meet numerous different standards in various jurisdictions can be an enormously complex task. At the Take It Back! annual conference in 2005, electronic industry manufacturers asked the Environmental Protection Agency (EPA) to pass a federal take-back regulation to provide a “common play field” (Veleva, 2005). Without such uniform standards, companies risk fines, litigation, and damaged reputation, as Microsoft experienced in 1999 when the Mateel Environmental Justice Foundation sued the company for noncompliance with California’s Proposition 65 that mandates labeling wire and cable products containing a high lead concentration (Veleva & Sethi, 2004).

More recently, American toy manufacturers have faced similar challenges. After numerous large recalls in 2007 and 2008, a Mattel spokeswoman stated, “Fifty different state standards will create a confusing patchwork of regulations, limit certain toys sold in some states, drive up costs for consumers and will not substantially increase toy safety” (Trottman & Williamson, 2008). Therefore, Mattel and many other

Box 1 Addressing Carpet Disposal

- Product stewardship efforts: Driven largely by manufacturers such as Interface and C&A.
- Memorandum of Understanding (MOU) signed in January 2001: Agreed to develop “negotiated outcomes” for collecting and processing discarded carpet, establish reuse and recycling goals, and develop model procurement goals.
- Carpet dialogue: Determined recycling and reuse rates with participants including EPA, the states of Minnesota, Iowa, Massachusetts, North Carolina, California, Oregon and Maryland; industry and NGOs.
- New MOU signed in January 2002: Agreed by 2012 to achieve 40% landfill-diversion goal, rules and responsibilities, evaluation criteria, and schedule.
- 2007: Midcourse review conducted by Zero Waste Alliance found efforts significantly lag behind established targets. Identified new strategies including increased marketing of recycled products, developing forms of sustainable financing, and expanding collection and processing infrastructure.
manufacturers support tougher federal standards that give the industry “clear and uniform rules.” Working with state and federal regulators, NGOs, industry peers, and other stakeholders is one way for businesses to advance uniform rules and policies.

Major companies in the United States have long realized the importance of being active players in dialogues around product stewardship. For instance, Dell came under significant pressure from environmental groups across the EU to assume responsibility for its old products and this experience sensitized company officials to the risks and opportunities of state and federal e-waste regulations and the need to take proactive steps (Cole & Vozick, 2002). The computer manufacturer drafted and successfully campaigned for the passage of the so-called “Dell Model Bill” in several American states, including Kansas, Texas, and Oklahoma. While states with poor capacity to enact such policies believe it is better to have the “Dell Bill” than no regulation at all, some federal regulators and the Electronics Take-Back Coalition consider it weak regulation and a cause for concern as it may prevent passage of a stricter bill nationwide.

Companies want to be involved in the discussion and the framing of product-stewardship policies, as government and NGOs expect them to pay for product end-of-life disposal. While in most cases firms are able to pass these costs on to the end consumer, global competition from companies overseas with no such regulations sometimes leads to manufacturers absorbing the cost of take back and disposal. For example, while some computer manufacturers charge a fee for taking back old computers, others, such as Dell, Lenovo, and Toshiba, have free take-back programs. In addition, with limited state and local government resources for waste treatment and disposal, there has been a movement globally toward shifting the responsibility to manufacturers. In California, for example, local governments responsible for hazardous waste collection met in 2001 and recognized that their costs had tripled due to the large stream of electronic waste. Since they did not want to increase tipping fees or taxes to pay for it, “industry needs to take responsibility and fund a program” (Fraser, 2009). As a result, the state passed Senate Bill 20, which imposes a recycling fee on all electronics that contain lead.

Known as Extended Producer Responsibility (EPR) in Europe and Product Stewardship (PS) in the United States, this approach to environmental management typically requires collecting and recycling or safely disposing of old or unused products at the end of their useful life (e.g., EU’s WEEE and ELV Directives). EPR, though, differs from PS in two important ways: 1) it shifts responsibility (physically and/or financially) upstream to the producer and away from municipalities, and 2) it provides incentives to producers to take environmental considerations into the design of the product. PS, by comparison, considers all parties involved in producing, selling, or using a product (e.g., suppliers, designers, manufacturers, distributors, retailers, customers, recyclers, remanufacturers, and disposers) to be responsible for the full environmental and economic impacts of that product. Such ”shared” accountability provides less clarity and weaker incentives for manufacturers to redesign their products to reduce end-of-life impacts.

In both cases, however, taking back old or unused products is expensive. Manufacturers typically do not do so, and taxpayer money is required to fund take-back programs at state and local government facilities to properly recycle such products so they do not end up in the landfill or get incinerated and thus contaminate air or groundwater. Many regulators and NGOs in the United States are calling on manufacturers to fund take-back programs and for retailers to collect waste products in their stores (the most convenient option for consumers). Group Health, for example, participated with its 25 pharmacies in a voluntary take-back pilot program for secure medicine returns in Washington State (see Box 2). In 2001, Benjamin Moore was involved in a voluntary take-back pilot program in Massachusetts, coordinated by PSI and the Massachusetts Department of Environmental Protection. This initiative later helped inform the PSI dialogue on this issue (see Box 3).

Is Walmart Driving Product Stewardship?

Whether inspired after Hurricane Katrina (Scott, 2007; Creno, 2008), or as a result of stakeholder pressures and an attempt to improve its image and reputation, Walmart’s transformation to embrace sustainability is a phenomenon that has begun to attract considerable attention. The historic speech by Walmart Chief Executive Lee Scott in the fall of 2005 put the giant retailer on a fast track called “Sustainability 360.”

According to Scott, sustainability is the single biggest business opportunity today. In a subsequent lecture to the Prince of Wales’s Business and the Environment Programme in February, 2007, Scott declared that, “Hurricane Katrina changed Walmart forever. And it changed us for the better. We saw our full potential—with absolute clarity—to serve not just our customers, but our communities, our countries, and even the world. We saw our opportunity and our responsibility” (Scott, 2007).
To begin this process, the company held a meeting at its headquarters in Bentonville, Arkansas in March 2006, inviting many sustainability specialists to devote a day to analysis, discussion, and action planning (Googins et al. 2007). Representatives from the Boston College Center for Corporate Citizenship were among the invited participants. The company’s journey started with defining three main inspirational goals, two of which—Goal 2 and Goal 3 below—are related to PS:

- **Goal 1**: Use 100% renewable energy
- **Goal 2**: Generate zero waste
- **Goal 3**: Sell sustainable products

To progress, Walmart established three networks to focus on key opportunities under each goal. The networks start with a “captain,” or senior business leader, whose performance review includes sustainability criteria (Waddoups, 2008). To measure achievements toward the three goals, Walmart developed specific targets and initiatives, such as:

- Increasing fleet efficiency by 25% in three years (achieved).

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**Box 2 Pharmaceutical Waste**

- **Problem**: Improperly disposed of drugs can be a source of childhood poisoning and teenage and adult abuse. They are also increasingly showing up in the environment and, according to the United States Geological Survey, are found in 80% of the country’s streams and in the drinking water supply of many cities.
- **Global status**: Some jurisdictions such as British Columbia have enacted regulations and created agencies such as the Post-Consumer Pharmaceutical Stewardship Association (PCPSA) with active participation by pharmacies to safely collect and dispose of medications.
- **United States status**: No federal regulation and only guidelines on safe disposal by consumers exist. PSI convened a dialogue in three phases:
  - Phase I: Literature search that identified and interviewed stakeholders, summarized efforts, invited participation in a national dialogue, developed the Product Stewardship Action Plan for Unwanted/Waste Pharmaceuticals.
  - Phase II: Launched in June 2008 to convene four national dialogue meetings, to organize workgroup meetings, to develop priority agreements, and to disseminate project results.
  - Phase III: Will jointly implement priority projects and initiatives identified in dialogue process.
- **Funders**: Waste Management; EXP Pharmaceuticals; King Pharmaceuticals; Water Environment Federation; National Association of Clean Waters; States of Minnesota, California, and Idaho; King County (Washington State) and Los Angeles County (California); and Cities of Santa Monica and San Francisco.

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**Box 3 Leftover Paint Disposal**

- **Goal**: Develop nationally coordinated leftover paint management system
- **2003-2004**: Four dialogue meetings held
- **2005**: First MOU signed
- **2007**: Second MOU signed by 45 parties thus far:
  - “Invisible” ecofee paid by consumers at retail locations
  - Industry-run system of collection
  - Industry pays for the collection and reuse/recycling of leftover paint and passes costs onto the consumer
  - Industry will enhance existing collection infrastructure
  - No mandatory retail take back
  - Consumer education on proper paint disposal
- **2008**: Minnesota legislation passed by both Houses; supported by industry, manufacturers, retail, and government; vetoed by the governor, but will be reintroduced in the 2009 session.
- **2008-2010**: Based on demonstration in Minnesota, system will roll out to Oregon, Vermont, Washington, California, Iowa, Florida, North Carolina, and Connecticut.
that are more stringent than current federal regulations in the United States (e.g., for lead, phthalates, mercury, antimony, arsenic, barium, cadmium, chromium and selenium; three priority chemicals have been identified in 2008 for phase out by suppliers: Propoxur, Permethrin and Nonyl Phenol Ethoxylates).

There is growing evidence that Walmart is walking the talk and its actions have begun to affect the market (Plambeck & Denend, 2008; Ethical Performance, 2009). Using its large purchasing power, Walmart is changing the way companies design and deliver products. Many of the member companies of the Boston College Center for Corporate Citizenship, such as Teradata, Tennant, and General Mills, admit they are making product changes or committing to corporate citizenship reporting because “Walmart asked us to do so” or because “our customers are demanding it.” With over 60,000 suppliers around the globe, Walmart is able to bring changes that no government can enact so fast (Birchall, 2008; CSR Wire, 2008). By introducing tougher requirements for suppliers, making longer-term commitments, and partnering with NGOs for product testing and certification (Plambeck & Denend, 2008), Walmart is becoming one of the driving forces for product innovation and stewardship, as are many other large companies such as Nike, Target, Dell, and Intel.3

At the same time, most business support for PS in the United States is around product design, manufacturing, and use, rather than end-of-life management. An example of this approach is Walmart’s commitment to influencing consumers to switch to more energy efficient CFLs. By actively promoting these bulbs, Walmart has probably helped reduce energy use, but at the same time the company’s actions have indirectly contributed to another problem: mercury emissions from discarded products. While CFLs are an environmentally preferable option from the standpoint of energy conservation, not all consumers know that the bulbs contain mercury and need to be properly disposed of at the end of their life.

Collecting old CFLs has proved difficult and costly, and currently Walmart does not want to get involved. The EPA considers discarded CFLs to be “hazardous waste” and the subject of special requirements for collection, personnel training, and transportation due to the health risks that they pose (Appell, 2007). While studies show that the mercury used in CFLs is less than the mercury emitted from a coal-fired power plant that would otherwise power incandescent lightbulbs, the former is still a concern due to its “dispersed” nature. If a consumer throws an old CFL in the trash, there is no way to separate it from the other household waste that is typically incinerated or disposed of in a landfill. Moreover, recycling CFLs containing mercury can expose workers to this toxic chemical. In contrast, mercury from coal-fired power plants is “concentrated” at the source and new technologies exist to capture much of it before emission (Feeley et al. 2003).

Some environmental groups, such as the Natural Resource Defense Council (NRDC), are considering whether other innovations, such as light-emitting diodes (LEDs) that do not contain mercury or any other toxic chemicals, could be an alternative to CFLs (Roman, 2008). This approach, however, could be costly and require systems thinking, life-cycle assessment, and collaboration by various stakeholders, including government.

To address both the presence of mercury in fluorescent lightbulbs and the lack of collection options, PSI is convening a national dialogue that seeks to develop a comprehensive solution for CFL product responsibility. The goal is to negotiate acceptable and accountable roles for key stakeholders involved in the product life cycle, including retailers, manufacturers, and government officials. The key objectives of the dialogue are to reduce the environmental impact of the manufacture of fluorescent lightbulbs, to increase the manufacture and procurement of environmentally preferable lighting, and to maximize the safe collection and recycling of spent lamps from households and businesses by developing a nationally coordinated system that is financially sustainable.

What Should Companies Do To Prepare for the Product Stewardship “Wave”?

Momentum is growing both globally and in the United States for greater environmental responsibility and PS. With the new White House administration, it is widely expected that government involvement and oversight of business will increase. To prepare for this coming “wave” in PS policies and regulations, companies can do the following:

- Educate yourself: If you manufacture products, parts, or materials, educate yourself about what happens to your goods once they reach the end of their life and whether there are social, environmental, or health risks. The Boston College Center

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3 Nike, for example, is taking back and recycling old sneakers. Pressured by socially responsible investors and NGOs, Target agreed in 2008 to phase out from its stores all products containing polyvinyl chloride (PVC). Dell became the first computer maker in the United States to take back its old or unused computers. Intel was among the founding members of the Electronics Industry Code of Conduct—a voluntary initiative promoting better supply-chain management that includes guidelines for designing and manufacturing greener products.

for Corporate Citizenship has numerous offerings and works with companies to map and address key social and environmental impacts and to help their bottom line.

- **Know your supply chain**: Knowing and tracking all ingredients and suppliers of your products, parts, and materials is one of the most critical business challenges today for companies across industries. Visionary companies like HP and Intel have developed a sustainable supply chain and see their suppliers as key partners (Veleva, 2007).

- **Track the regulatory landscape**: Learn about any regulatory action, NGO campaigns, or other initiatives that target your industry’s products, parts, or materials, not just in the United States, but also overseas. In a global marketplace, it is just a question of time before such actions affect domestic companies. Think of NGO campaigns, customer requirements, and regulatory restrictions on mercury, cadmium, lead, polybrominated diphenyl ethers (PBDEs), phthalates, PVC, bisphenol A (BPA), transats, and most recently nanomaterials.

- **Participate in a dialogue**: Find out if someone is already working on PS issues and join a group, such as the PSI dialogues, to participate in the development of new policies.

- **Be proactive**: New regulations will emerge whether you take action or not. To be better prepared, start with some pilot initiatives to explore the costs and benefits of various product redesigns and back-schemes. Companies including Benjamin Moore, Staples, Dell, Nike, and Best Buy were among the first in their industries to explore back-options.

- **Be transparent**: Customers, consumers, regulators, and NGOs want to know what your company is doing to address issues of concern. Communicating your initiatives builds trust and improves your reputation, both crucial resources for your business and bottom line.

- **Look at product stewardship as a process, not a destination**: Today we cannot possibly foresee all the changes in scientific knowledge, environmental issues, and consumer preferences. As nicely summarized by Tod Arbogast (2008), director of sustainable business at Dell, “You get a lens into the future if you engage with stakeholders.” The best way to prepare for the coming PS “wave” in your industry is to join a network, engage with stakeholders, learn, talk, and act.

In times of product oversupply and increasing global competition, deepening economic crisis, and changing consumer preferences, PS provides unique opportunities for innovations that can increase market share, profits, and shareholder value. Proactive companies can play a key role in shaping emerging PS policies and regulations in the United States.

**References**


