Hewlett-Packard and e-Waste Regulation (A)

In November 2002, Renee St. Denis, director of the American Product Take-Back program for Hewlett-Packard (HP), had just met with David Isaacs, director of Government and Public Policy at the firm. The two discussed the state of legislation in the California Senate on electronic waste (e-waste). They needed to decide whether it made sense for the firm to support SB 20 in the upcoming session of the California legislature and if so under what conditions.¹

Hewlett-Packard was a leader in e-waste recycling relative to other firms in the industry. At the same time, they were losing money in their efforts to be socially responsible on this front, at least in the short run. The e-waste recycling facilities the firm had set up were a long-term play, but that play would only work out if they could somehow change the basic economics of the sale of electronics products. Under the existing system, HP was internalizing the negative externalities present at the end-of-life of the products they manufactured, while the majority of their competitors were not. At that moment, it did not appear consumers were willing to bear the additional costs required to handle the environmental harm the products posed.

Hewlett-Packard

Hewlett-Packard was the original Silicon Valley company founded in a garage, well before Steve Jobs and Apple came along. Bill Hewlett and Dave Packard founded their firm in 1939 at 367 Addison Avenue in Palo Alto.² The company’s founders met as students at Stanford

¹ This case study was written from secondary sources, and is intended for educational purposes only. Any thoughts or decision points for individuals mentioned in the case are fictionalized and designed solely to promote classroom discussion.

University—and solidified their friendship on a backpacking trip in Colorado, reflective of their deep-seated love for the environment.

By 2002, the company had moved beyond its early roots as a manufacturer of electronic test equipment, such as signal generators, voltmeters, and oscilloscopes. Now it focused primarily on personal computers and printers (which it introduced in 1984).

The company had also just completed a merger with Compaq in May 2002, bringing together two of the PC market’s largest and longest-standing firms. The Hewlett-Packard that emerged from the merger became the largest PC manufacturer serving the US market, outpacing its main rival: Dell from Austin, Texas. Dell arguably made better products at lower prices given its just-in-time (JIT) approach to manufacturing, which not only minimized inventory costs but also allowed for client customization via Dell’s website.

**e-Waste and the Environmental Movement**

In the early 1980s, the news media began covering the high-tech industries’ harmful effects on the natural environment. This happened shortly after the establishment of the Superfund (through the Comprehensive Environmental Response, Compensation and Liability Act of 1980) to clean up environmental waste sites, such as those at Love Canal, where the Hooker Chemical Company and the US Army dumped toxic waste, including some from the Manhattan project.

**The e-Waste Problem**

Given Moore’s Law—that technological power doubles every ten years—consumers are constantly demanding new electronic products to replace old ones that quickly become obsolete. With the growth of the market for home PCs in the late 1970s and early 1980s and the digitization of audio and video around the same time, growth in electronic waste took off. (See Exhibit 1.) In fact, of all the waste that ended up in landfills and recycling facilities in the United States by 2002, e-waste was the fastest growing portion. Americans discarded more than 4.3 million tons of consumer electronics and appliances in 1999 alone. The US Environmental Protection Agency (EPA) estimated that 63 million computers would be taken out of service in 2002—and those computers would need to go somewhere.

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Health Hazards

Toxic chemicals abound in electronic devices’ hardware and cathode ray tube monitors despite having the outward appearance of being clean products. The chemicals include: lead, mercury, cadmium, chromium, and barium. While the end-users of electronic devices are not directly exposed to these on a daily basis, when the devices are discarded or broken down the harmful side effects become more of a concern. Even exposure to small amounts of lead or mercury has been linked to brain damage in humans—and if the elements end up in groundwater, the consequences can be disastrous for whole communities.

Minimal Amounts of e-Wasted Recycled

Despite the growing volume of e-waste and the health hazards associated with its disposal, many consumers simply did not know what to do with their products at the end of the products’ useful lives. Many old computers ended up mothballed in homes. Others ended up being disposed of in regular garbage due to a lack of consumer education. Only 15 percent of all e-waste was actually being sent to specialized recycling firms.

Export for Recycling

Of the small fraction of e-waste that actually ended up being recycled in 2002, 50 to 80 percent was estimated to be exported to places like China, India, Pakistan, or countries in Africa, where workers broke apart the old machines with hammers and burned the plastics to get at precious and reusable metals on the inside. These “recycling” processes created serious hazards for the workers handling toxic chemicals with their bare hands and releasing toxic fumes into the air. Since it was happening offshore, it was not a visible issue in the United States.

Silicon Valley Toxics Coalition (SVTC)

The Silicon Valley Toxics Coalition (SVTC), a grassroots organization composed of local residents and high-tech employees (including many from HP), was formed in 1982 as a response to the discovery of a toxic solvent (1,1,1-Trichloroethane) in local groundwater. This toxin was linked to a Fairchild semiconductor plant site located in the region. The SVTC’s initial goal was to get the EPA to add the Fairchild location and 28 others to the list of Superfund toxic clean-up sites (labeled as the most dangerous toxic sites by the government following a 1980 law). However, it also began working on a broader, more internationally focused campaign to hold the high-tech industry, once thought of as “clean,” accountable for its negative environmental externalities.
The e-waste problem became the primary focus of activist groups like the SVTC, who denounced dumping used electronics, including computer equipment, in traditional landfills; SVTC exposed how toxic chemicals such as lead, mercury, and cadmium from e-waste leak into the soil, water, and air.

**e-Waste Initiatives at Hewlett-Packard**

Partially because HP employees were early members of the SVTC and partially because Hewlett and Packard themselves had strong personal views about the preservation of the environment, HP had long been a leader in handling e-waste among electronics firms.

**Early Initiatives**

HP began remarketing used equipment as early as 1981. In 1987, HP further signified its commitment to solving the e-waste problem when it became one of the first electronics manufacturers to introduce a product recycling program. It took back old HP products for free and sent them to third-party computer recycling specialists to be processed.

**Design for the Environment**

In 1992, HP went a step further by launching its Design for the Environment program; this program led to a manufacturing process that included product attributes to enable easier recycling at the end of a product’s lifecycle. The goal was to introduce thinner plastics that did not sacrifice the integrity of the product but would be easier and cheaper to recycle. Other elements of the program included finding ways to reduce the number and size of internal parts that included toxic chemicals. All this would make recycling HP computers cheaper down the road and lead to relatively smaller hazards if the computers were disposed of improperly.

**Own Recycling Facilities**

In 1998, HP opened the electronics industry’s first wholly manufacturer-owned electronic waste recycling plant in Roseville, California; this was followed by a second plant in Lavergne, Tennessee. By 2000, the company was receiving over four million pounds of electronic refuse each month.

The Roseville facility cost over $4 million just to set up, let alone operate. Company executives repeatedly acknowledged that their recycling facilities were operating at a loss despite finding resale markets that allowed them to turn a profit on some of the e-waste they processed. While there was little doubt that the firm was “doing good” by maintaining the recycling facilities, the more time passed and the more consumers sent them products to be recycled for free, the more money HP was losing on the project.
Competitors’ Initiatives

Most other electronics manufacturers at the time were simply doing nothing about the e-waste problem that they helped create. One notable exception was HP’s main competitor, Dell. Dell had seen HP’s example and instituted a program to take back its products and send them on to a third-party recycler; however, it did not appear to be planning to follow HP’s lead by running an in-house e-waste recycling operation.\(^4\)

e-Waste Legislation

There was little prospect for federal e-waste legislation in the United States in 2002. Unsurprisingly, California was one of the first states to consider the issue. Moreover, the European Union had just begun considering what a regulatory approach to the problem might be.

European Union Approach

The European Union had recently adopted the first e-waste regulations anywhere in the world. They followed a “product stewardship model.” There were two central tenants: (i) the prevention of unnecessary amounts of chemicals entering electronics products at all, and (ii) requiring that manufacturers pay for clean-up efforts associated with products they sold. Each EU member’s home government was responsible for arranging collection points for consumers to drop off their electronic waste, and fees were assessed to firms based upon the current market share of electronic products sold and how well/poorly they avoided using certain toxics in the production of their electronic products.

California Legislative Action

California is known for being a progressive state on environmental issues. The state is home to some of the United States’ most iconic natural areas, including Yosemite and Sequoia National Parks.

Despite notable offshore oil fields, the state had administratively banned offshore drilling since 1969 following the Santa Barbara spill, which was the largest oil spill in US waters to date at the time; the California legislature reaffirmed this ban legislatively in 1994.

The California legislature passed landmark laws related to protecting the environment in 1970 with the California Environmental Quality Act; few other states have such comprehensive laws on the books. The state was also a leader of fuel economy regulations for automobiles.

The state was one of the first to establish its own environmental agency, with the California Environmental Protection Agency being founded in 1991; it is also one of the only states where the head of such an agency sits on the governor’s cabinet of advisors.

A California EPA spokesman commented on the state’s approach to environmental regulation, stating, "If there is not a nationwide solution at hand, we don’t see that as precluding a nation-sized state such as California from reaching a solution."5

The 2001–2 Legislative Sessions

During the 2001–2 legislative sessions in California two bills on electronic waste, SB 1619 and SB 1523, were passed with more than two-thirds of the legislature voting in favor, but vetoed by California governor Gray Davis.

SB 1619—which passed the Assembly on August 26, 2002, and the Senate on August 30, 2002—provided state funds to administer e-waste programs within local governments through the California Integrated Waste Management Board as well as grants to manufacturers to encourage consumers to return devices for recycling. The bill also set goals for the amount of e-waste to be diverted from hazardous waste facilities to recycling facilities.

SB 1523—which passed both the Assembly and the Senate on August 31, 2002—would have required every manufacturer and retailer of specified electronic devices to collect fees from consumers at the time of sale and remit them back to the California Integrated Waste Management Board who administered state recycling programs. Simply put, it would have placed a “tax” on consumers. The proceeds would then be used to provide incentive payments to waste handlers for recycling e-waste, to fund grants to nonprofits that accept e-waste for recycling, and to subsidize governmental education aimed at the public on the hazards of e-waste and the reasons to recycle it.

Davis had a strong record for being tough on environmental issues. He wrote to the California state Senate, “I am very troubled by an increasing electronic waste pollution problem

in California, as well as across our nation.” In an explanation for why he vetoed the bills, he wrote, “I am concerned that this program is not the most efficient or cost effective approach for California,” suggesting instead that “California needs a comprehensive and innovative state law that partners with product manufacturers, establishes recycling targets, and provides for the safe recycling and disposal of electronic waste.” Nevertheless, he noted that he was “willing to sign legislation that challenges industry to assume greater responsibility for the recycling and disposal of electronic waste,” suggesting that he did not think the legislation that was on his desk was strong enough. “I believe California should have a new law next year,” Davis concluded.

The 2003–4 Legislative Session

State Senator Byron Sher, who had cosponsored both bills in the 2001–2 legislative session, was sure to be the lead on the legislation again the next time around. He was working on drafting what would become SB 20, taking into account Governor Davis’s concern about establishing targets and partnering with manufacturers.

Early drafts of SB 20 set aggressive targets for each manufacturer and would allow the California Integrated Waste Management Board to assess fines on the manufacturers if those targets were not met. It also retained the “tax” provision from SB 1523. Moreover, the early drafts of SB 20 included a requirement that any firm that sold electronics in the state report how many units they sold and how many units with their brand name were recycled in a given year.

One final difference between SB 20 and the prior session’s bills was that SB 20 explicitly included a provision to ensure that out-of-state sellers of electronics over the Internet (i.e., Dell) would not be able to evade the point-of-sale fees. This was in response to unwritten but known pressure on Gray Davis to ensure that Silicon Valley firms were not put at a disadvantage by the legislation.7

Making a Decision

Both St. Denis and Isaacs were convinced that some legislation on e-waste was going to pass again in the current California legislative session—and this time Governor Gray Davis would be more likely to sign (rather than veto) the bill, no matter its contents, but particularly if

6 Full text available online at: http://www.leginfo.ca.gov/pub/01-02/bill/sen/sb_1601-1650/sb_1619_vt_20020930.html

Sher and his colleagues in the Senate could address Davis’s concern about holding firms accountable for hitting targets.

They wondered what to do. They were a leader in embracing e-waste initiatives among electronics firms—and wanted to finally be able to capitalize on their investments in social responsibility. Should they support the existing bill unequivocally? Should they seek modifications to the bill? If so, what types of modifications and why? Would it be politically feasible to get these modifications added to SB20? Are there certain modifications that would be essential to garner the firm’s support? Did the firm differ from the rest of the industry in the position they should take? And if not, why then shouldn’t they lobby together with the entire industry? If the bill became law in California were there any other consequences? If HP could design its ideal legislation, what would it look like?
Exhibits

*Exhibit 1: Growth in Personal Computers*

![Graph showing growth in personal computers](image)

*Source: Wikipedia*
Exhibit 2: Legislative Counsel’s Digest of SB 20

Senate Bill No. 20

CHAPTER 526

An act to add Article 10.3 (commencing with Section 25214.9) to Chapter 6.5 of Division 20 of the Health and Safety Code, and to add Article 4 (commencing with Section 41516) to Chapter 3.5 of Part 2 of, and Chapter 8.5 (commencing with Section 42460) to Part 3 of, Division 30 of the Public Resources Code, relating to hazardous and solid waste.

LEGISLATIVE COUNSEL’S DIGEST

SB 20, Sher. Solid waste: hazardous electronic waste.

(1) Existing law prohibits the management of hazardous waste, except in accordance with the hazardous waste control laws. Under existing law, the Department of Toxic Substances Control is authorized to exempt, until January 1, 2003, by regulation, a hazardous waste management activity from the requirements of the hazardous waste control law if the regulation governs a specified type of hazardous waste, including electronic hazardous wastes, identifies the hazardous waste as a universal waste, and amends specified existing regulations of the department. Existing law prohibits the disposal of electronic products in or on land, except as specified. A violation of the hazardous waste control law is a crime.

The bill would authorize the Department of Toxic Substances Control to adopt management standards, by regulation, as an alternative to the hazardous waste control laws, for electronic waste that the department determines is hazardous, to the extent consistent with the federal Resource Conservation and Recovery Act of 1976 (RCRA). The bill would require the department to adopt regulations to prohibit an electronic device from being sold or offered for sale in this state if the electronic device is prohibited from being sold in the European Union on and after its date of manufacture, due to the presence of certain heavy metals. The bill would prohibit these regulations from taking effect until January 1, 2007, or on or after the date the Directive 2002/95/EC, as adopted by the European Parliament and the Council of the European Union on January 27, 2003, takes effect, whichever date is later. The bill would require the department to exclude certain electronic devices from the regulations and would prohibit the department from requiring the manufacture or sale of an electronic device that is different than, or not otherwise prohibited by, the European Union, thereby imposing a state-mandated local program by creating a new crime. The bill would also incorporate the provisions of the Electronic Waste Recycling Act of 2003, as specified below, by reference into the hazardous waste control laws.

(2) Existing law requires the California Integrated Waste Management Board to administer state programs to recycle various specified materials.

This bill would enact the Electronic Waste Recycling Act of 2003. The bill would make it unlawful to sell, on and after July 1, 2004, a covered electronic device in this state to a consumer, as defined, unless the board or department determines that the
manufacturer of that device is in compliance with the act. The bill would prohibit the sale of a covered electronic device, after January 1, 2005, that is not labeled, as specified.

The bill would require a retailer selling a covered electronic device in this state to collect an electronic waste recycling fee from the consumer on and after July 1, 2004, and to transmit the fee to the board in accordance with a schedule and procedures that the board would be required to establish. The bill would set the electronic waste recycling fee in an amount according to a specified fee schedule and would require the board, in collaboration with the department, on and after July 1, 2005, and at least once every 2 years thereafter, to review and adjust the electronic waste recycling fee, based on specified factors.

The bill would require each manufacturer of an electronic device who sells the device in this state, by July 1, 2005, and at least once annually thereafter, to submit a report to the board on the number of electronic devices sold by the manufacturer in this state during the previous calendar year and other information regarding certain specified materials in those devices. A manufacturer would also be required to make information available to consumers that describes where and how to return, recycle, and dispose of the electronic device and opportunities and locations for the collection or return of the device, through specified means.

The bill would impose civil liability for violations of specified provisions.

The bill would require the board, in collaboration with the department, to convene an electronic waste working group to define environmental purchasing criteria, by July 1, 2005, that may be used by state agencies. The bill would also require the board to annually establish and update, as necessary, statewide electronic waste recycling goals.

The bill would require the board and the department to deposit the fees and fines collected under the act in the Electronic Waste Recovery and Recycling Account, which the bill would create in the Integrated Waste Management Fund in the State Treasury.

This bill would authorize the board and the department to expend the moneys deposited in the account, upon appropriation by the Legislature, to make electronic waste recovery payments to authorized collectors, to make electronic waste recycling payments to covered electronic waste recyclers, and to administer the act, and provisions regulating covered electronic devices. The bill would also allow the expenditure of not more than 1% of the funds in the account to establish public information programs on recycling of hazardous electronic devices.

The bill would require the board, in collaboration with the department, to establish on July 1, 2004, and on July 1 every 2 years thereafter, an electronic waste recovery payment schedule to cover the net cost of an authorized collector in operating a free and convenient system for collecting, consolidating and transporting covered electronic wastes generated in this state and would require the board to make those payments to authorized collectors or to a covered electronic waste recycler for payment to an authorized collector. The bill would also require the board to establish an electronic waste recycling payment schedule to cover an e-waste recycler’s net cost of receiving, processing, and recycling covered electronic waste from an authorized collector.
collector and would require the board to make those payments to covered electronic waste recylers. The bill would allow a recycler to receive these payments only if the recycler meets specified eligibility requirements regarding the recycler’s facilities. The bill would authorize the board and the department to adopt regulations to implement the bill and would authorize these regulations to be adopted as emergency regulations, as specified.

The bill would require any person who intends to export electronic waste to a foreign destination to comply with specified notification requirements and to demonstrate, among other things, that the handling of the exported electronic waste within the country of destination would meet certain standards adopted by the Organization for Economic Co-operation and Development.

Since the bill would incorporate the provisions of this act into the hazardous waste control laws, a violation of which is a crime, the bill would impose a state-mandated local program by creating new crimes.

(3) Existing law, the California Integrated Waste Management Act of 1989, requires the county or regional agency integrated waste management plan that a county or regional agency is required to submit to the board to contain a household hazardous waste element.

This bill would require, on and after January 1, 2004, that when a county or regional agency revises the county or regional integrated waste management plan and its elements, the city household hazardous waste element and county household hazardous waste element would be required to identify those actions the city, county, or regional agency is taking to promote the collection, consolidation, recovery, and recycling of covered electronic waste, thereby creating a state-mandated local program by imposing new duties upon local agencies.

(4) This bill would provide that its provisions are severable. (5) The California Constitution requires the state to reimburse local agencies and school districts for certain costs mandated by the state. Statutory provisions establish procedures for making that reimbursement.

This bill would provide that no reimbursement is required by this act for specified reasons.

Source: [http://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=200320040SB20](http://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=200320040SB20)