E-waste/Green Computing

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Table of Contents

Abstract

The e-waste issue has moved into prominence in the last few years, in part because the environmentalists have been able to gain major media attention to the issue. It appears that to really address the mountain of old waste, a collective solution will be needed with the cooperation of government and industry. Surveys vary on whether consumers will pay to get their stuff recycled or not. The only way to address all e-waste is to enable free take-back in some way. Government should bear a part of the burden, but today, in the current economy, local governments are strapped for cash. Consumers will ultimately pay for recycling in the cost of new equipment (Kollie, 2003).

What causes e-waste?

The growth and rapid advancements in consumer electronics technology, particularly in the computer sector, are major factors in the growing volumes of "e-waste" (Hosansky, 2004). The computer industry's current benchmark for up-to-date performance is as short as 18 months. Technology advances so quickly that last year's model may not run this year's software, necessitating replacement with an ever-increasing frequency by personal and business users alike. It is common accounting practice to write-off computer components over a three-year period and many firms replace entire computer systems on that basis. Consumer product manufacturers continue to place a greater emphasis on performance and price than on designs that enhance end-of-life management. As a result, society is left with a growing stockpile of toxic discards. Office storage rooms, family basements and even the yards of recyclers are filling up with electronic products that were introduced into the marketplace with no plan for their end of life (Hosansky, 2004).

Why manage e- Waste?

Most computer monitors and televisions use CRTs, which contain several pounds of lead. Other hazardous materials in electronic devices include cadmium, mercury, copper and fire retardant chemicals (Hosansky, 2004).

The products are usually harmless in garages and basements because the hazardous materials are safely stored in metal, glass and other casing. In a landfill, however, they can break during compaction. Solid waste experts are divided over whether the products can contaminate local water supplies or otherwise affect the environment, since landfill liners are designed to prevent metals and other substances from leaking out (Schmidt, 2002).

There are persistent concerns, however, that the liners are not foolproof. And even if the materials can safely be contained within a landfill, many believe that the products should be recycled instead of taking till landfill space (Schmidt, 2002).

Issues in ewaste

A significant amount of e-waste is being sent offshore to developing nations. Worker safety, child protection and environmental standards are non-existent or not enforced. Some overseas countries have now closed their borders to e-waste in an effort to preserve their own environments and protect communities. Managing e-waste is an expensive process since dismantling a product not designed for recycling is time and labor intensive (Schmidt, 2002)..

Industries response to ewaste

About 12 countries currently have takeback laws on the books for electronics; more than 15 have rechargeable battery laws (including the US). With the new WEEE directive, about 28 countries worldwide will have takeback laws within five years. In many cases, there is a visible "fee" that consumers see at retail. However, all money is collected from

manufacturers. The exception is Norway, where fees on electronics for imports are collected at import (avoiding free riders) and distributed to appropriate collection groups. Norway is one leader in electronics recycling today. In the U.S., the large companies all have various takeback programs or are contributing to consumer collection programs in the U.S. These are all well publicized (Schmidt, 2002).

Regulating e-Waste

Conservation and Recoverv Act, which bars commercial and industrial users from disposing of materials in landfills or incinerators that pose a threat of environmental contamination. Businesses have to treat CRTs as hazardous waste, rising special carriers and disposing of them in a special facility. The EPA is considering redesignating CRTs as reusable products to promote recycling. Some states, including California, Minnesota and Massachusetts, have taken the step of banning CRTs from landfills. Expert's caution, however, that such bans need to be accompanied by vigorous recycling programs or frustrated residents will hide electronic devices in the trash or even dump them in ditches. Ominously, much U.S. e- waste is winding up in China and other nations, where impoverished residents disassemble them for parts, often without protecting them or the environment. One durable and accepted process is to recycle the e-waste. An alternative response to the proliferation of e- waste is to require manufacturers to develop anti fund programs to collect and recycle the devices they produce. Legislators in several states, including New York, Rhode Island, Texas and Washington, have introduced bills to make manufacturers responsible. The industry is torn between the two approaches. Some companies prefer the recycling fee, such as IBM; others, such as Dell and Hewlett-Packard, prefer handling the collection and recycling themselves. The electronics industry has formed the National Electronics Product Stewardship Initiative, which

is an effort to create a unified position and propose a national recycling program to Congress. A resurgence of interest in recyclability and disposal may be linked, in part, to a growing interest in sustainable manufacturing and consumption (Kollie, 2003).

Green Computing

Environmentally responsible electronics use involves not only proper end-of-life disposition of obsolete equipment, but also purchasing new equipment that has been designed with environmental attributes. Think about this when purchasing new equipment, and ask your retailer or electronics supplier about environmentally preferable electronics. Households, companies, and governmental organizations can encourage electronics manufacturers to design greener electronics by purchasing computers and other electronics with environmentally preferable attributes (Kollie, 2003).

Conclusion

EPA's goal is to promote greater product stewardship of electronics. Product stewardship means that all who make, distribute, use, and dispose of products share responsibility for reducing the environmental impact of those products.

The following strategy is outlined to tackle e-waste:

1. Increase reuse and recycling of used electronics

2. Ensure that management of electronics is safe and environmentally sound

3. Foster a life-cycle approach to product stewardship, including environmentally conscious design, manufacturing

4. Toxics reduction for new electronic products (Kollie, 2003).

As we have noted previously, the resurgence of interest in solid waste management has the potential to affect a wide array of industries, including the converting industry.

Consequently, the e-waste law must be considered from the perspective of its broader potential to affect the industry. In this regard, as use of radio frequency identification (RFID) tags expands, it could create new questions about waste handling and categorization for products and packaging. "Sustainability" has become something of a buzzword, but there is little agreement on the exact meaning. Supporters of advance recycling and disposal fees argue that fees not only help defray the costs of disposal but also provide incentives for consumers to reduce waste and limit consumption. Suffice it to say, the new legislation on waste management bears watching (Kollie, 2003).

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