



Too Much of a Good Thing?

Recycling of Electronic Waste Needs an Upgrade

By **Symone Salisbury**

Computers and other electronics play an integral role in people's lives, both professionally and personally. The Internet, for example, has added another communication tool for businesses and individuals. Radios and televisions showcase advertising and provide entertainment. Failure to properly recycle these devices, however, changes them from tools to economic and environmental threats.

"Between 1997 and 2007, 12 million personal computers will become obsolete in Indiana. This equals nearly two computers for every person in the state," remarks Julie L. Rhodes, contractor to the Indiana Recycling Coalition's (IRC)'s E-scrap Action Program.

Those millions of computers, as well as "anything with a circuit board," contain lead and are potentially hazardous waste, Rhodes says. Examples include computers, cell phones, remote controls, televisions, copiers, stereos and VCRs.

Companies and organizations statewide are raising awareness of electronic waste's harmful potential and working to improve recycling practices.

Menacing metals

Electronics comprise as much as 4% of municipal solid waste, reports the Environmental Protection Agency (EPA).

"The EPA estimates that it (electronic waste) is the fastest growing portion of the waste stream. The problem," Rhodes continues, "is the hazardous nature of it."

Rhodes reveals that two of the most popular and widely used electronics, computers and televisions, are considered hazardous waste by EPA. Both contain cathode ray tubes (CRTs), which can be especially dangerous because they contain large quantities of lead.

Flame retardants and other metals such as mercury, chromium and cadmium contained in electronics also jeopardize safety.

For instance, mercury and lead can impair the central nervous system, kidneys and fetal development. Chromium damages kidneys and contributes to the formation of lung cancer. Cadmium weakens the lungs and skeletal system.

According to information provided by the IRC, exposure to hazardous metals occurs through: inhalation, skin absorption, surface water and sediment, fish and shellfish and/or plants and meat.

Recycler with a cause

The Goldsmith Group, Inc. refurbishes computers, as well as military, lab, medical and



Hard drives can be difficult to dispose of when they are being replaced in the office or home.

industrial electronics.

It resells medical equipment such as heart monitors, IV pumps and ultrasound equipment to medical sales and service companies. Customers can buy items through the company's online retail store and e-bay auctions.

"We believe that just because something is used, doesn't mean it's not useful," asserts Eric Goldsmith, vice president of the Goldsmith Group. "Used does not equal useless."

The Goldsmith Group earned the Indiana Governor's Award for Recycling for its work with steel pipe, which it began recycling in the 1930s. Since launching electronic recycling in 1977, it has become one of the Midwest's largest electronic component recyclers.

"It's kind of like a treasure hunt," he observes. "You have a big pile of junk, and you look for the one or two items in the scrap. And then you have to market that."

The company works with non-for-profit organizations, schools and other businesses. Clients are located statewide (Carmel, Bloomington and Fort Wayne are among the cities) and nationwide (including Ohio, Michigan and New Hampshire).

"On average, my company has been recycling close to 2 million pounds per year for about five years," Goldsmith proclaims. "That is 2 million pounds of electronics that would have ended up in an incinerator or landfill."

Enhancing educational opportunities

Implemented in 2001 by the Connected Community Partnership (CCP), Project Connect fosters volunteerism and encourages families in Bartholomew County to work together to achieve academic excellence.

Project partners include Cummins, Inc., ArvinMeritor, Irwin Financial Corporation and Columbus Regional Hospital. They offer support through participation on the project's steering committee, funding, donations and volunteerism.

Located in Columbus, Project Connect supplies refurbished and donated computers to students and families with financial difficulties. Along with computers, it provides Internet service for approximately six to eight months. Each year, 400-450 families receive computers — approximately 2,000 families since the program's inception.

The Association of Indiana Solid Waste Management Districts, Inc. honored CCP with the Environmental Stewardship Award for 2004 as the Outstanding Not-For-Profit organization.

Typically, Project Connect works with students (in grades four and higher) and their families. When CCP has excess inventory, it offers assistance to other groups such as pre-school and learning centers, as well as a home school partners program.

Corporate volunteers, high school students working on senior projects and paid workers prepare computers for reuse at Tech

Reconnect. While some volunteers are technically skilled, others excel in customer service. Beth Stroh, project leader for CCP and community relations officer for Irwin Financial Corporation, applauds the program for utilizing collaborators' unique abilities.

"We have a place for everyone with a variety of different skills. You don't have to be able to fix a computer to be part of our program," she comments.

Stroh describes the focus of the steering committee, which has representation from various industries.

"Their idea," she reflects, "was what can we do to use technology to create greater access and more literacy for all members of the community?"

The program has improved academic performance in Bartholomew County's two public school systems. Participating teachers maintain a web page that contains homework assignments, which Stroh contends contributes to "a greater level of participation by kids and parents."

She notes that by connecting the classroom and home, students "are better prepared to do their homework. They do it more often, and they do it to a higher degree of quality than they have in the past."

Project Connect works to recycle as much of a computer as possible: even computers deemed unusable for the program are not discarded. Quarterly, they are sent to a recycling company so that components such as plastics and metals can be reused.

Potential solutions

According to the EPA, 50% of the materials in a personal computer can be recycled.

Why is recycling electronic waste so important?

"It's smart, it protects the environment, it keeps valuable equipment lasting longer because you can repair it with used parts and you create jobs," Goldsmith asserts. "Some of the things that we in the recycling industry suggest are that we need to rethink how we manufacture to make it easier to recycle. DFE — design for the environment."

The IRC agrees. It spent over one year collaborating with a team of more than 100 stakeholders to develop its E-scrap Action Program.

Those stakeholders include representatives from solid waste districts, private sector electronics recyclers, state and federal

governments, universities, business generators (large and small), the solid waste industry and others.

The group advocates "a statewide multi-media education program, a ban on certain electronics, especially those containing the CRTs, and some sort of funding mechanism to fund recycling," Rhodes argues, "because one of the reasons people don't recycle e-scrap is because there is a cost associated with it."

Other recommendations are landfill and incinerator bans and "better management of electronics



by state and local government.”

Goldsmith also advises against using landfills.

“In electronic circuits, there’s gold, plastic, etc.,” he states. “When you dispose in a landfill, there’s less likelihood of recovering that metal. So we’re talking about protecting the environment, resource recovery. You’re talking about reuse value and you’re talking about taxes and job creation.”

What is the average cost to recycle electronic waste?

“The most costly items definitely are the CRT-containing materials, because they have little value,” Rhodes claims. “Basically, the heavier an item is, the more it will cost to get rid of ... everything is done by weight.”



Electronics are among the items ready for recycling at the Monroe County Solid Waste Management District’s household hazardous waste facility.

National comparisons

In comparison to other states, Rhodes describes Indiana’s e-scrap management as “better than some, not as well as others.”

She points out that California and Maine “are the two most aggressive states to date. California has placed fees on the purchase of electronics that help pay for the recycling of the materials. Michigan has actually just put electronics under its universal waste rule.”

California law requires cell phone retailers to recycle phones they sell, an unprecedented bill in the United States. Rhodes adds that Indiana has not introduced e-scrap legislation, but that nearly half of the states in the country have done so, although not all have become law.

Making a difference

Rhodes maintains that businesses have an ethical responsibility to recycle electronic waste.

“For businesses that are looking at long-term liability, it is a real potential loss to them,” she contends, “because they have a real responsibility for handling electronics from cradle to grave. Any time you have the potential to affect human health and the environment, there is a monetary, as well as societal cost.”

One way the IRC helps to reduce electronic waste is through education.

It held a series of workshops in February in Columbus, Evansville, Mishawaka and Kokomo. An online toolkit scheduled to be launched in March will further educate the public on the importance of recycling.

In addition, the IRC recently created a series of case studies to determine best practices across the state. CCP’s Project Connect was one of the participating projects.

“We’re approaching the point where we can say that every family has technology, and with that, the opportunity to develop the technical skills that they need to work in a knowledge economy,” Stroh says (of Project Connect). “Consequently, employers can trust that they can come here and find the workers that they need.”

Two other participants in the IRC’s case study, the city of Indianapolis and Monroe County, organized collection events to reduce electronic waste.

In April and November of last year, the IRC, Keep Indianapolis Beautiful, The Virtual Scavengers Project and End of Life Electronics partnered with the city of Indianapolis on collection events. Rhodes says that the city of Indianapolis hopes to have another collection day for Earth Day in April and “eventually have an ongoing program through their household hazardous waste collection program by 2006.”

She adds that Monroe and St. Joseph counties have ongoing, year-round collection programs.

Eric Goldsmith takes pride in the Goldsmith Group’s contribution to reducing electronic waste.

“We have a history of trying to find a home that isn’t destruction,” Goldsmith says of his company. “Why not use something again and again until it no longer works? I challenge people to come to my place and find something they can’t use.”

INFORMATION LINK

Resources: Julie L. Rhodes, Indiana Recycling Coalition, at (877) 283-9550 or go to www.indianarecycling.org

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