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Sidebar: Why It's Not Easy Being Green

E-Waste: Its Toxic Legacy

Improper disposal of obsolete computer equipment not only poses a threat to the environment; it also represents a huge liability risk for companies.

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Infrastructure needed to support e-waste recycling and disposal

Story by Robert L. Mitchell

FEBRUARY 02, 2004 (COMPUTERWORLD) - As IT organizations and manufacturers contemplate how to best dispose of old equipment, they're discovering that the markets and infrastructure to support their needs aren't there yet.

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"The industry in terms of recycling is very fragmented," says Tod Arbogas senior manager of asset recovery services at Dell Inc. He should know: D has had problems with recyclers in the past, including a relationship with vendor, Unicor, that uses prison labor. Negative publicity from activists su as the Silicon Valley Toxics Coalition, which criticized the vendor's working conditions, created such a public relations headache that Dell dropped Ur from its program last year, although other electronics manufacturers contin to use the company.

Recycling technology also remains relatively crude: Some recyclers smas monitors by hand, and most manually disassemble equipment for recyclin Circuit boards are shredded and sent to smelters that reclaim only the mo precious metals. And equipment traditionally hasn't been designed for efficient end-of-life recycling. "We are at the very beginning stages of build that infrastructure," says Kate Krebs, executive director of the National Recycling Coalition in Washington.

While many vendors offer e-waste disposal and recycling services, most a relatively small. Most companies don't have a nationwide presence, Krebs says, so IT organizations end up shipping products over long distances,

which adds to the cost. And not all of those vendors use best practices.

"There are probably 1,000 companies out there that bill themselves as electronics recyclers but only 50 that are delivering processed CRT glass smelters in the U.S.," says Robin Ingenthron, president of Middlebury, Vt.-based e-waste recycler and consulting firm American Retroworks Inc. The rest of the glass, presumably, is being exported, landfilled, incinerated -- stored. Ironically, the lead in CRTs, essentially vitrified inside glass, isn't a danger until it's smashed and smelted, he says.

While shredding is a popular disposal method, the smelting process for shredded e-waste is inefficient. "When they incinerate polymers, they have large emission problem," says Hong-Chao Zhang, a professor in Texas Te University's department of industrial engineering. Zhang is researching alternative methods to separate metals embedded in circuit boards. Jim Puckett at the Basel Action Network calls Toronto-based Noranda Inc., the smelting plant where HP sends shredded e-waste, one of the biggest polluters in North America.

"There is no innovative process model used by today's recycling industry. They still use a 100-year-old process. The problem is that the recovery rat relatively low, energy consumption is high and they cannot control emissions," says Zhang.

Yet smelting is still more environmentally friendly than the alternative -- mining precious metals such as copper, Ingenthron says. While recycling about 85% efficient best case, the recovery rate for mining is closer to 2% says. And the health hazards for mining workers are much worse than for recycling, especially at operations in developing countries. He estimates t recycling of e-waste creates 50 times more jobs and one-fiftieth the polluti of mining operations worldwide. "If it is getting recycled, you've done tremendous benefit to the environment by reducing mining."

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