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## **Second Changes and a Third Bottom Line**

By Tyche Hendricks

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# Action What Works

sored by a Chilean NGO). Worldwide, e-waste is the fastest-growing solid waste stream.

This widening river of trash poses both human and environmental hazards. Each cathode ray tube in a television or computer monitor, for instance, contains several pounds of lead. Electronics also harbor mercury, cadmium, and other heavy metals. Many consumers and manufacturers dump these materials into landfills, where toxins leach into groundwater and poison people and animals.

Even when people attempt to dispose of e-waste properly, horror stories of offshore “recycling” abound. In Guiyu, China, for example, workers extracting gold from circuit boards burn themselves with acid, and clouds of burning plastic and lead fumes hover over an ash-filled river. In Accra, Ghana, children sift through mountains of shattered computers, setting fire to the parts to scavenge bits of copper wire.

*At Recyla Chile's plant in Santiago, workers dismantle computers, sparing the environment while profiting from the resale of raw materials.*

## Second Chances and a Third Bottom Line

Recyla Chile reclaims value from discarded electronics and marginalized people **BY TYCHE HENDRICKS**

INSIDE THE STEEL and glass office towers of Chile's capital, Santiago, computers, printers, and faxes hum. Out on the streets, business executives and taxi drivers chat away on some of Chile's 14 million cellular telephones.

Urbanized, well educated, and home to 17 million people, Chile is one of the most prosperous countries in Latin America. And as is the case in the United States, all its electronic gadgets are beginning to lead to a whole lot of electronic waste. The country currently discards 300,000 computers a year, and by 2020 it will be grappling with an annual pile of 1.7 million trashed computers, estimate Daniel Garcés and Uca Silva, researchers at Plataforma RELAC (the Regional Platform on E-waste in Latin America and the Caribbean, a project spon-

Yet to Chilean businessman Fernando Nilo, the mounting heap of hazardous e-waste was not just a problem. It was also an opportunity. In 2003, he launched Latin America's first e-waste recycling company, Recyla Chile. The company safely and ethically dismantles old computers and other electronic castoffs, sells the valuable metal byproducts, and hands over the toxic elements to an accredited hazardous waste facility. Three years after smashing apart its first computer, Nilo's company was turning a profit.

Today, Recyla Chile employs 25 people, including a dozen who are ex-convicts, recovering drug addicts, and others living at society's margins. “We're offering them a second chance in life,” he says. “We're recycling them.”

### THREE BOTTOM LINES

The son of a shoe factory owner, Nilo had an entrepreneurial streak. He had also worked for years in Chile's mining industry (the country is the world's largest producer of copper), and so he knew the market for aluminum, copper, and other commodities. At the same time, Nilo had roots as a social activist. As a student in the 1980s, he had fought for human rights and an end to the dictatorship of Au-

TYCHE HENDRICKS is a San Francisco-based journalist who covers topics in Latin America, as well as immigration and demographic change in the United States. She reported for a dozen years at the *San Francisco Chronicle* and teaches in the Graduate School of Journalism at the University of California, Berkeley.

gusto Pinochet. After democracy was restored, he focused on other social issues, raising university scholarship money for poor students. “At night I was working against poverty, but in the daytime I was working in the mining sector,” he says. “I thought there should be a model where you could create social value and economic value in the same undertaking.”

Nilo began studying models of social entrepreneurship, admiring the “double bottom line” (profit and social service) espoused by Nobel Peace Prize winner Muhammad Yunus, founder of the Grameen Bank. Attending a forum at the Massachusetts Institute of Technology’s Media Lab, Nilo heard Nicholas Negroponte describe a plan to distribute \$100 laptops to students in poor countries. “I raised my hand and said, ‘It’s a beautiful initiative to solve the digital gap, but it’s a market failure because you’ll send millions of computers to places like Peru [where] people will not recycle them.’” All that e-waste would then threaten the health of the people and environment, he figured.

So when Nilo founded Recycla Chile, he says, “I thought it should be a triple bottom line model,” delivering profits, serving people, and improving the planet.

For Recycla Chile, planet and profit are intertwined. Chilean businesses pay Recycla Chile to handle some 1,100 tons of e-waste a year. The company first extracts and sells reusable materials—a \$2 million annual business—and then pays an International Organization for Standardization (ISO)-certified hazardous waste processing center in Santiago to dispose of batteries and cathode ray tubes.

Each year, Recycla Chile sells 55 tons of iron on the Chilean market. It also exports 110 tons of copper and almost 30 tons of circuit boards, from which precious metals such as silver and gold can be extracted. Recycla Chile exports metals only to smelters that meet the ISO’s environmental standards. These smelters are primarily in Europe, especially Belgium. Nilo is wary of environmental and labor practices in China and India, so he avoids doing business there, even though Chinese companies often pay better.

In the developing world, scrap commodities are in high demand as raw materials for manufacturing, says Latisha Petteway, a spokeswoman for the U.S. Environmental Protection Agency. And scientists note that reclaiming valuable metals such as copper, aluminum, gold, and silver can reduce the mining of virgin metals, a process fraught with environmental hazards.

It’s “urban mining,” says John Shegerian, CEO of Electronic Recyclers International, one of the largest e-waste handlers in the United States. In places like Latin America, urban mining is “amazingly important, because instead of polluting the environment, there’s a chance to harvest these materials for use in their own country or some other country,” he notes.

### A FOURTH STEP

Katherine Ortega has worked at Recycla Chile for a year. Upon her release from prison after a drug trafficking conviction, Ortega couldn’t find anyone to hire her until a social worker connected her

### PROTECT PEOPLE, PLANET, AND PROFITS

Employ marginalized people

Offer environmental services

Create demand through  
consumer education

Encourage eco-friendly  
regulations

with Recycla Chile. “They trained me and they treat me well,” says Ortega, taking a break from sorting computer components. “I like it here.” She adds that the job has allowed her to rebuild her dignity and her relationship with her 4-year-old son.

At Recycla Chile’s 6,500-square-foot facility in an industrial park on the outskirts of Santiago, Ortega and other workers receive shipments of cast-off equipment from Chilean companies. One of those companies is Sodimac, a Chilean cross between

Target and Home Depot. Before discovering Recycla Chile in 2007, the company had been stockpiling obsolete equipment so as not to pollute, says legal director Juan Carlos Corvalán. Recycla Chile has proven to be serious and transparent in its dealings and is well respected in the Chilean business world, he says. “Recycling e-waste gives us peace of mind,” said Corvalán. “It has also had a positive impact on the reputation of our company.”

Although Nilo aims to accept electronics from individual consumers, doing so will entail a long-term effort to educate the public about the importance of recycling. Indeed, one of Recycla Chile’s biggest challenges so far has been to convince businesses to pay a fee to dispose of their e-waste—as American recyclers often require—when no law prevents them from dumping it in the trash.

Nilo has been working with Chile’s new Ministry of the Environment to encourage regulations and incentives that promote e-waste recycling. And he’s pushing manufacturers to adopt “cradle-to-grave” responsibility for their products. The country currently recycles less than 5 percent of its e-waste, but Nilo hopes that this number will eventually reach 50 percent. Meanwhile, a couple of new e-waste recyclers have recently come on the scene in Chile. “We made a lot of noise and it attracted others,” says Nilo.

In building his business, Nilo has sought high-level international training and mentoring. Recycla Chile hatched under the wing of Octantis, a Chilean business incubator. The World Economic Forum named Nilo a Technology Pioneer, and the Schwab Foundation for Social Entrepreneurship selected him as a fellow. “We see the potential if he is able to influence the national policy in Chile to make it mandatory to recycle e-waste and then take the model to the entire Latin American region,” says Mirjam Schoening, head of the Schwab Foundation.

For now, Nilo’s focus remains on Chile, where environmentalism has traditionally meant concern over urban air pollution and dammed rivers. Public understanding about the need to recycle electronics still lags in Chile, noted Silva. Likewise, Shegerian figures that e-waste recycling in South America, though ahead of Asia, is two years behind the United States, which itself is 10 years behind Europe.

Not content to leave change to chance, Nilo is incorporating public education about e-waste into his business model. Universities and multinational companies around the globe seek him out as a guest lecturer and advisor, and then he brings ideas on how to raise environmental awareness home to Chile. “I’m creating a fourth bottom line,” said Nilo. “Educational value, awareness—that is our fourth step.” ■