



WORLD ECONOMIC FORUM



Technology
Pioneers
2009



Solving The E-WASTE Problem

"RECYCLA selected Technology Pioneer 2009 by THE WORLD ECONOMIC FORUM"



THE INNOVATION



Fernando Nilo

Founder of RECYCLA Chile



SCHWAB FOUNDATION FOR SOCIAL ENTREPRENEURSHIP
THE VOICE OF SOCIAL INNOVATION

Selected as an Outstanding Social
Entrepreneur by the Schwab Foundation

RECYCLA CHILE WAS THE FIRST COMPANY IN LATIN AMERICA TO RECYCLE ELECTRONIC WASTE PROPERLY. COMPUTERS, TELEVISIONS, MOBILE PHONES, FAX MACHINES, AND SCANNERS ARE INDISPENSABLE MODERN TECHNOLOGIES. HOWEVER, ONCE THIS EQUIPMENT HAS OUTLIVED ITS USEFUL LIFE, IT BECOMES HIGHLY TOXIC FOR THE ENVIRONMENT UNLESS IT IS PROPERLY DISCARDED. FOR EXAMPLE, TODAY MORE THAN 95% OF CHILEANS HAVE A MOBILE PHONE, WITH AN AVERAGE LIFE SPAN PER PHONE OF LESS THAN TWO YEARS. WHAT HAPPENS WHEN THESE CELL PHONES ARE THROWN AWAY?

Fernando Nilo

As founder of RECYCLA Chile and an Outstanding Schwab Global Social Entrepreneur, Fernando Nilo recognized the problem of electronic waste (e-waste) in the 21st century as a major business opportunity. However, social and environmental transformation was at the forefront of his concern. To achieve the former, Nilo established a system whereby the personnel at RECYCLA who, dismantle the electronic appliances and consolidate the valuable materials for export, are former inmates who seek re-incorporation into the workplace and society.

To achieve the latter, Nilo and his colleagues have embarked on a massive campaign to raise awareness of electronic waste recycling on a national level in Chile, as well as internationally.

These goals entail influencing public policy. To date, there is no electronic recycling legislation, and Fernando and his colleagues are working with the Secretary of the Environment and other stakeholders to create regulations.

RECYCLA has rapidly grown since its inception. In 2006 RECYCLA began to generate a profit as more companies want to collect and dismantle their e-waste.

RECYCLA has also entered into agreements with social organizations that have programs to provide impoverished citizens with computers. To assist these organizations in bridging the digital divide, RECYCLA receives and dismantles these computers.



Torres del Paine Pto. Williams, CHILE.

...Today, more than 95% of Chileans have a mobile phone.

With an average life span of less than two years, what happens when their owners dispose of them?...



The rapid pace of technological change regarding electronic equipment has made appliances for homes and offices affordable and possible that availability of appliances at affordable prices. As a result, large quantities of electrical and electronic equipments are added to the waste stream. This e-waste includes items such as computers, entertainment electronics, telecommunication equipments, cooling appliances, and tools. While technical solutions to recycling e-waste are available, in most cases a legal framework, a collection system and other logistics need to be implemented before a technical solution can be applied.

Electronic waste represents 2% of America's trash in landfills, but it equals 70% of all toxic waste. Toxic substances in electronic waste may include carcinogens such as lead, mercury, cadmium, and polychlorinated biphenyls (PCBs); materials that endanger the environment if they are not properly disposed. A typical computer monitor may contain more than 6% lead by weight.

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THE STRATEGY

GEOGRAPHIC AREA:

CHILE

MODEL: SOCIAL BUSINESS

FOCUS: ENVIRONMENT

RECYCLING CERTAIN APPLIANCES, SUCH AS MOBILE PHONES AND COMPUTERS PROMISES TO BE PROFITABLE BUSINESS. HOWEVER, THE CHALLENGE LIES IN CREATING A PROFITABLE E-WASTE MANAGEMENT SYSTEM BASED ON THE REVERSE LOGISTIC MODEL. FOR EXAMPLE: AT PRESENT NONE OF THE COLLECTIVE EUROPEAN E-WASTE MANAGEMENT SYSTEMS ARE ABLE TO FINANCE THEIR ENTIRE OPERATIONS WITH THE EARNED INCOME GENERATED THROUGH RECUPERATING AND SELLING VALUABLE MATERIALS SUCH AS GOLD, SILVER, COPPER, AND, PLATINUM. THEY ALL NEED ADDITIONAL FUNDS TO FINANCE CERTAIN STEPS IN THE RECYCLING CHAIN.

This is the challenge that Fernando Nilo and his team face in the Chilean context as they have had to set up the entire management structure for RECYCLA.

To begin, RECYCLA has set up a system to receive, collect, and store electronic equipment and appliances where everything is first classified by category (computers, fax, printers, etc.). Later, this equipment is dismantled and the valuable materials, such as copper and aluminium, are extracted. Then, the hazardous waste is separated according to its level of toxicity and is sent to a hazardous waste disposal center in Santiago.

RECYCLA ALSO WORKS WITH THE PRISON SYSTEM TO RECRUIT SOON-TO-BE PAROLED PRISONERS WHO ARE MOTIVATED TO LEARN THE E-WASTE RECYCLING PROCESS BESIDES FINDING EMPLOYMENT.

Materials are compacted and stored in containers for export to smelters that adhere to the ISO 14.000 standard certification.

RECYCLA sells the material in the national and international market once it has gone through the entire dismanteling and packing process. Furthermore, RECYCLA is very careful about selecting its buyers on the international market, as many countries have low environmental standards and working conditions. Electronic waste processing companies in China, for example, often buy e-waste at a better price than their European counterparts. However, uncontrolled burning and disposal are just moving the environmental and health problems to another part of the world.

RECYCLA's partnerships with corporations have been growing as companies become increasingly aware of environmental sustainability issues and their corporate social responsibility.



Isla de Pascua, CHILE.

**THE MOST IMPORTANT
CHARACTERISTIC OF
AN ENTREPRENEUR
IS PERSISTENCE,
FOLLOWING THE RULE
“NEVER TAKE NO FOR
AN ANSWER”.**

Are entrepreneurs born or made?

Fernando Nilo believes that even if one is born with entrepreneurial traits, if the conditions that encourage the development of those traits are absent, the potential of the individual will be stifled.

At age 8, he became aware of the importance of persistence.

On a daily basis, a neighbor would come to his house to talk to his father (owner of a shoe store chain). The neighbor was a bit odd, rather portly and always carrying a newspaper. He tried to convince Fernando's father to invest in a project he wanted to launch. Every day for four months, Fernando's father turned him down. Finally, exhausted by the continuous visits, Fernando's father wrote him a check. The strange and persistent neighbor turned out to be the well-known TV personality, “Don Francisco”, who today is known by Hispanic viewers across the Americas.

Fernando had a tough time launching RECYCLA because he faced social indifference to a mounting problem and lacked the money needed to launch the venture. With a family to support, he returned to the university to perfect his business plan while working at night to earn an income.

Today, RECYCLA is a recognized pioneer in its field in Chile.

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First Latin American Company selected Technology Pioneer by the WEF

The Technology Pioneers program is the World Economic Forum which identifies and integrates those companies around the world that are involved in the design and development of new technologies. Each innovation, whether it has large or small consequences, is another step in society's attempt to harness, adapt, and utilise technology to change and improve the way business and society operate.

Technology Pioneer selection Criteria

Companies have been chosen as Technology Pioneers in 2009. They come from three categories: biotechnology and health, energy/environmental technology and information technology. Candidates are nominated by members, constituents and collaborators of the World Economic Forum. Candidates are reviewed by an external Selection Advisory Committee comprising technology experts in a variety of fields; the World Economic Forum takes the final decision. The pioneers are chosen on the basis of six selection criteria:

- **INNOVATION:** The company must be truly innovated. A new version or repackaging of an already well-accepted technological solution does not qualify as an innovation. The innovation and commercialisation should be recent. The company should invest significantly in R&D.
- **POTENTIAL IMPACT:** The company must show the potential to have a substantial long-term impact on business and society.
- **GROWTH AND SUSTAINABILITY:** The company should have all the signs of a long-term market leader and should present, well-formulated plans for future development and growth.
- **PROOF OF CONCEPT:** The company must have a product on the market or have proven practical applications on the technology. Companies in "stealth" mode and those with untested ideas or models do not qualify.
- **LEADERSHIP:** The company must have visionary leadership that plays a critical role in driving it towards its goals.
- **STATUS:** The company must not currently be a Member of the World Economic Forum.

The Technology Pioneers are innovators - companies that are developing and applying the most innovative and transformational technologies. Their cutting-edge work represents an enormous resource of entrepreneurial talent. This dynamic group is at the forefront of change in the sectors of biotechnology/health, energy, and environment and information technologies.

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VISION

**WE WANT TO BE RECOGNIZED AS A
LEADING SOCIAL ENTREPRENEURSHIP IN
NON-FERROUS AND E-WASTE RECYCLING,
WHILE ALSO INTRODUCING A TRIPLE
BOTTOM LINE MANAGEMENT MODEL THAT
INCORPORATES ENVIRONMENTAL, SOCIAL,
AND ECONOMIC FACTORS.**



**HELP OUR CLIENTS AND THE COMMUNITY BY
PROVIDING A MANAGEMENT SOLUTION FOR
METALLIC NON-FERROUS WASTE AND E-WASTE.
OUR NATIONWIDE SERVICES GUARANTEE E-WASTE
RECYCLING AND PROVIDE CUSTOMERS WITH
ADDED VALUE THROUGH AN INNOVATIVE,
SERVICE-ORIENTED, EFFICIENT, AND
ETHICAL FRAMEWORK.**

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First Green Seal in Latin America

Currently in Chile, the companies manufacturing equipment (OEM), are responsible for their equipment until they have a new owner.



However, RECYCLA CHILE created the first green seal, in Latin America that will certify those brands and products to ensure recycling at the end of its useful life. In Chile, EPSON is the first brand to incorporate the green seal on all its product lines being sold to users.

Extended Producer Responsibility

Extended Producer Responsibility (EPR) is a strategy designed to promote the integration of environmental costs associated with products throughout their life cycles into the market price of the products.

Extended producer responsibility imposes accountability over the entire life cycle of products and packaging introduced on the market. This means that firms, which manufacture, import and/or sell products and packaging,

are required to be financially or physically responsible for such products after their useful life. They must either take back spent products and manage them through reuse, recycling or in energy production, or delegate this responsibility to a third party, a so-called producer responsibility organization (PRO), which is paid by the producer for spent-product management.



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AWARDS



National Environmental Innovation Award 2004,
Prochile, November 2004



Finalist in the Social Entrepreneur Award, 2005 and 2006,
Schwab Foundation – El Mercurio, November 2005 and 2006



CSR Award, Prohumana Foundation 2006,
April 2006



Entrepreneur of the Year Award, 2007,
CORFO, May 2007



Chile Design 2007 Award – Category: Social Responsibility,
Chilean Association of Design Studios, October 2007



Global Social Entrepreneur 2008,
Schwab Foundation, January 2008. Zurich.



Technology pionner 2009,
World Economic Forum, January 2009. Davos.



RECYCLA ON THE MOVE

Inauguration of The First E-Waste truck.



V RECYCLA Awards Ceremony, E- Waste 2008.

Award for companies and institutions that have promoted the development of e- waste recycling in Chile.



“Architects of change: act for the planet”.

International TV series that presented through people who already apply sustainable development principles in their daily lives.

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TRIPLE BOTTOM LINE

FROM THE BEGINNING, RECYCLA CHILE HAS BEEN A SOCIAL ENTREPRENEURSHIP THAT INCORPORATES ENVIRONMENTAL INNOVATION WITH MANAGEMENT STRATEGIES BASED ON SOCIAL, ECONOMIC AND ENVIRONMENTAL SUSTAINABILITY. THIS PROVIDES ADDED VALUE AND INNOVATION FOR THE RECYCLA CHILE SOCIAL ENTREPRENEURSHIP.



ENVIRONMENTAL

ENVIRONMENTAL SUSTAINABILITY:
Recycling is one of the most effective tools for
Protecting the environment.



SOCIAL

SOCIAL SUSTAINABILITY:
To promote equity and poverty reduction through
employment opportunities for marginalized people.

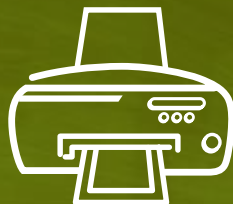


ECONOMIC

ECONOMIC SUSTAINABILITY:
RECYCLA is a highly competitive and profitable firm.



DATA ERASE



**CERTIFIED DESTRUCTION OF
STRATEGIC ELECTRONIC ASSETS.**



**NON-FERROUS METALLIC
WASTE RECYCLING.**



**ELECTRONIC GOODS
RECYCLING.**



DIGITAL GAP

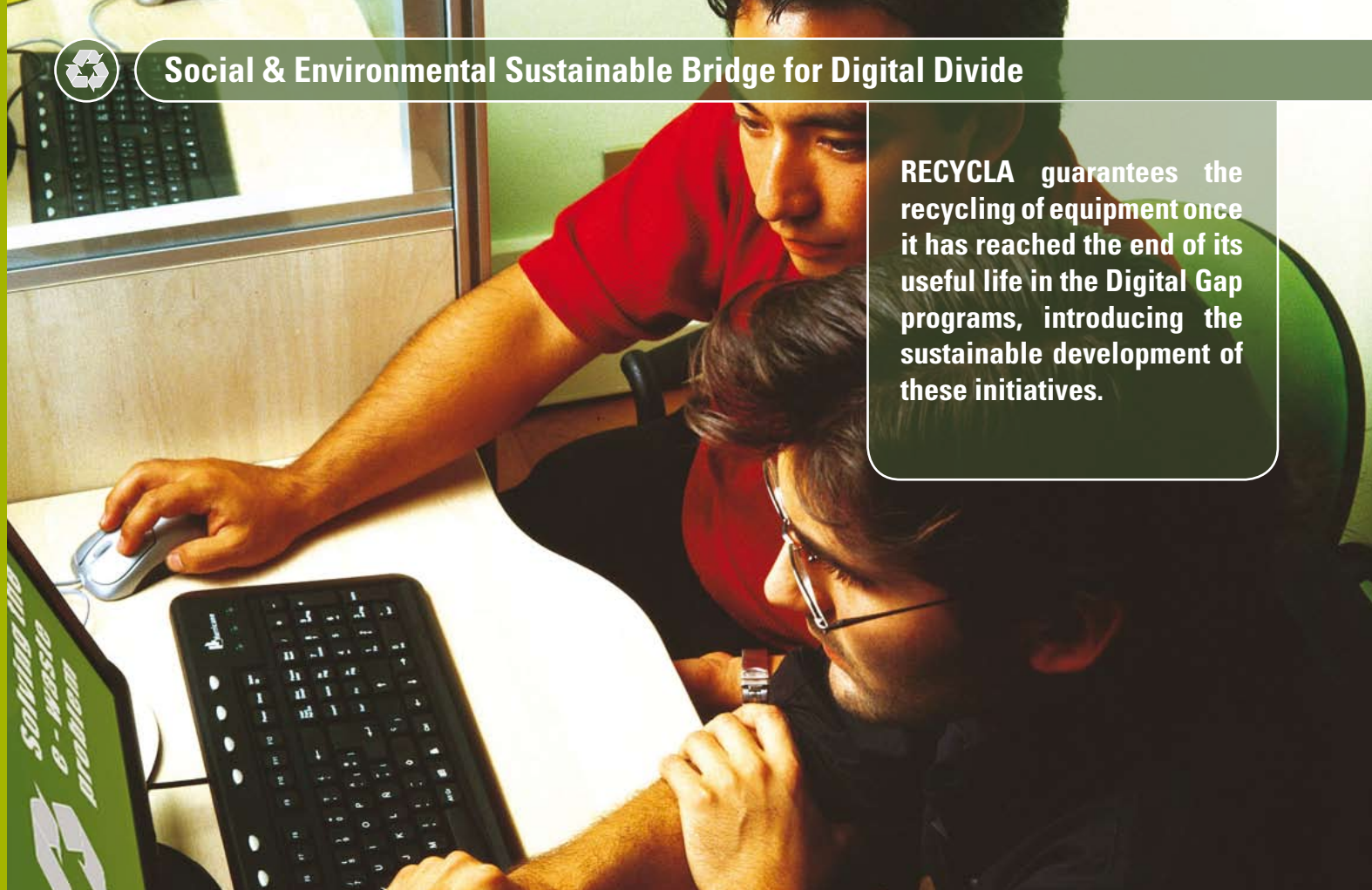


**FOCUS ON OEMs, CONSUMERS,
AUTOMOBILE INDUSTRY,
AEROSPACE INDUSTRY, ETC.**



Social & Environmental Sustainable Bridge for Digital Divide

RECYCLA guarantees the recycling of equipment once it has reached the end of its useful life in the Digital Gap programs, introducing the sustainable development of these initiatives.



Sister Company



International NGO's



World Economic Forum



Business



ALLIANCES

Trade Organizations



National NGO's



Government



The background of the entire image is a dark green color. Overlaid on this background is a large, faint, light green recycling symbol (a triangle of arrows). At the top of the image, there is a horizontal bar with rounded ends, colored in a medium green shade.

If you don't pay to recycle today, our children will pay tomorrow.

Recycling: a way to help reduce global warming.

BE PART OF THE SOLUTION



FERNANDO NILO
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Recycling Plant: Volcán Lascar Poniente 761, Barrio Industrial Lo Boza, Pudahuel,
Santiago, Chile. Phone / Fax: (56-2) 364 9244

www.recycla.cl



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Solving the E-waste problem, Recycling

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RECYCLING PLANT

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