



Latin America

# eWASTE IN LATIN AMERICA

The contribution of mobile  
operators in reducing electronic waste

MAY 2014





Latin America

The **GSMA** represents the interests of mobile operators worldwide. Spanning more than 220 countries, the **GSMA** unites nearly 800 of the world's mobile operators with 250 companies in the broader mobile ecosystem, including handset and device makers, software companies, equipment providers and Internet companies, as well as organisations in industry sectors such as financial services, healthcare, media, transport and utilities. The **GSMA** also produces industry-leading events such as Mobile World Congress and Mobile Asia Expo.

For more information, please visit the **GSMA** corporate website at [www.gsma.com](http://www.gsma.com). Follow the **GSMA** on Twitter: [@GSMA](https://twitter.com/GSMA).

**GSMA Latin America** is **GSMA's** branch in the region. For more information in English, Spanish, and Portuguese, see [www.gsmala.com](http://www.gsmala.com). Follow **GSMA LA** on Twitter: [@GSMALatam](https://twitter.com/GSMALatam).

## AUTHOR

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# Executive Summary

Over the past two decades, the proliferation of technology has led to an unprecedented amount of electronic waste: the fastest-growing waste stream on earth. Electronic waste — also known as e-waste or waste electrical and electronic equipment (WEEE) — can be hazardous for the environment if the materials present are not managed appropriately.

However, if it is correctly managed, e-waste can be a valuable source of raw material. This is particularly the case with urban mining<sup>1</sup>, an emerging activity that adds more than \$21 billion a year by extracting gold, silver and other materials from e-waste.

**The widespread use of electronic devices such as personal computers, television sets, radios, mobile phones, tablets and routers causes e-waste to pile up as these products reach the end of their life cycle. According to the United Nations University (UNU), on average every person on the planet generates 7kg of e-waste.** In 2012, humanity generated around 48.894 kilotons. By 2015, this figure will have reached 57.514 kilotons, of which 8.6% — 4,968 kilotons — will be produced in Latin America. The mobile industry has two main

sources of e-waste. The first is linked to network infrastructure changes and updates; the second is related to the upgrade of mobile devices and accessories by users.

**This reality is not different in Latin American and Caribbean countries. According to UNU, there will be around 7,225 kilotons of electric and electronic devices in the region and 74,867 kilotons globally.** Moreover, GSMA Intelligence counts 632 million mobile connections in the region and 319 million unique subscribers (Q3 2013). A huge number of people own mobile devices, which have an obsolescence cycle of 3 to 5 years, according to research for the StEP Initiative carried out by MIT<sup>2</sup>. In terms of weight, mobile phones represent a small fraction of the whole e-waste stream, however the quantity of these items will grow in the coming years. Therefore, it can

be expected that most of the mobile phones on the market today will be e-waste in 2018.

**Aware of these issues, many Latin American mobile network operators (MNOs) are currently carrying out a wide range of campaigns and projects to improve WEEE management, most of them voluntarily.** These initiatives have been active for years. In Brazil, for instance, Telefónica Vivo started its program Recicle Seu Celular back in 2006. In Chile, Entel was another of the early adopters of these initiatives with its Plan Gonzalo initiated in 2007.

In that sense, regional mobile network operators — members of the GSMA — have set reverse logistic schemes for collecting, stocking up, categorising and disposing of WEEE. They also invest in recycling frames,

<sup>1</sup> URBAN MINING IS THE PROCESS OF RECLAIMING PRECIOUS AND RARE METALS FROM ELECTRONIC WASTE AND OTHER KIND OF WASTE THAT WOULD OTHERWISE END UP IN LANDFILLS.

<sup>2</sup> CHARACTERIZING TRANSBOUNDARY FLOWS OF USED ELECTRONICS

make reforestation efforts, carry out awareness campaigns and promote standards adoption, such as universal adaptor and similar activities.

However, **alongside the voluntary efforts, WEEE management should comprehensively include manufacturers, governments, specialised companies and users.**

**Even in a complex environment without legal frameworks or comprehensive management schemes, MNOs have carried out a large number of projects.**

Only in 2013, Telefónica Movistar Ecuador processed 112,321 obsolete mobile phones, accessories, batteries and chargers from their users. In Brazil, the mobile network operator Oi is investing USD10 million in five recycling plants belonging to Descarte Certo. In 2012, Descarte Certo collected 43,782 mobile devices, batteries and chargers from Oi customers. In Brazil, TIM, Vivo and Oi collected 90.6 tons of WEEE in 2012.

In Uruguay, mobile network operator Antel has donated a wheelchair to each person or institution that gathers 25kg of e-waste. In Panamá, Telefónica Movistar collected 44,500 obsolete artefacts and seeded 52,000 trees in exchange. In Mexico, ANATEL (the National Telecommunications Association) started a program to combine the efforts of mobile network operators to improve and audit the reverse logistics needed to manage e-waste created by the mobile industry.

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**Most of these projects have been undertaken by mobile operators themselves, as countries in Latin America lack legal frameworks related specifically to e-waste management.** Only in recent years have some countries started to discuss and apply a new law — as in Brazil and Ecuador. The majority of legal frameworks around the world include the concept of extended producer responsibility or EPR. According to this concept, introduced by the Organisation for Economic Co-operation and Development (OECD), the manufacturer of the product is responsible for the entire lifecycle of the product, especially including post-consumption — take-back, recycling and final disposal. But these legal frameworks consider the industry as a whole, and within its comprehensive schemes, mobile network operators are just part of a wider group of actors. **In Latin America, MNOs are importers and distributors of mobile devices and they are considered to be manufacturers by different laws.**

**However, compared to European countries — like Spain<sup>3</sup>, for instance — legislation in Latin American countries lacks comprehensive, coordinated and collaborative schemes.** This forces mobile network operators to assume the role of the manufacturer for devices they do not produce. Therefore, network operators are constrained by laws in countries where the infrastructure required to manage e-waste is lacking, and where manufacturers are absent so they cannot take responsibility for the devices they produce. In addition, most people around the region ignore the environmental risks of inappropriate e-waste management.

**Facing these circumstances, mobile network operators continue to negotiate with policymakers, governments and members of the industry, investing in recycling schemes and making the general public aware of how to deal with e-waste.**

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<sup>3</sup> ROYAL DECREE 208/2005, 25TH FEBRUARY, ON ELECTRICAL AND ELECTRONIC EQUIPMENT AND MANAGEMENT OF ITS WASTE. BROADLY THIS DECREE SET AN EXTENDED PRODUCER, DISTRIBUTOR AND IMPORTER RESPONSIBILITY SCHEME. IT ALSO SETS A SELF-GOVERNED REGULATORY BODY IN CHARGE OF CONTROLLING HOW COMPANIES PERFORM IN REGARDS TO E-WASTE MANAGEMENT. MOREOVER, IT ADDS A GREEN TAX ON ELECTRIC AND ELECTRONIC EQUIPMENT INTRODUCED TO THE MARKET, IN ORDER TO FINANCE THE ACTIVITIES OF THIS REGULATORY BODY.

# E-WASTE IN LATIN AMERICA

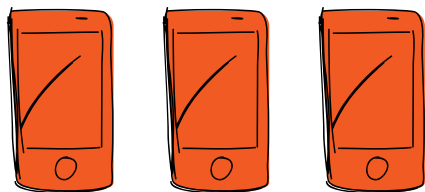
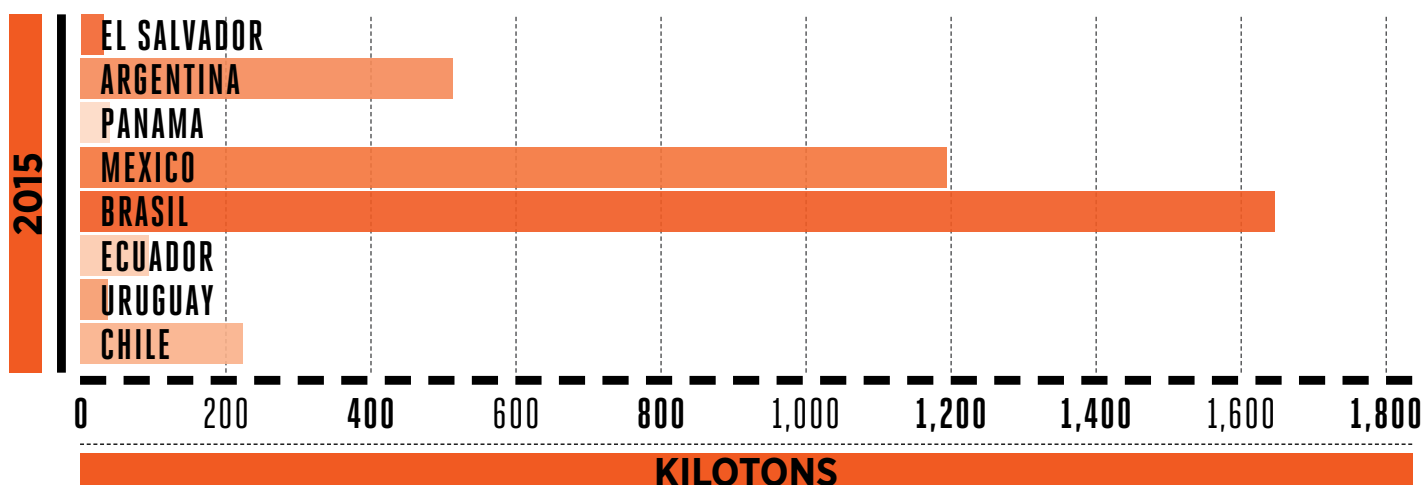
## ELECTRONIC WASTE GROWTH IN LATIN AMERICA



SOURCE: UNU

KT = KILOTON = 1.000 TONS

## WEEE IN LATIN AMERICA COUNTRIES HIGHLIGHTED ON THIS REPORT



**3 TO 5 YEARS**  
IS THE AVERAGE  
LIFESPAN OF A  
SMARTPHONE

SOURCE: MIT/STEP INITIATIVE

**IN 2014,**  
**LATIN AMERICA**  
**WILL PRODUCE**  
**8.6%**  
**OF THE**  
**GLOBAL WEEE**

**FROM 2012**  
**TO 2015 LATIN**  
**AMERICA WEEE**  
**WILL INCREASE**

**17.5%**

# 7KG

## IS THE AVERAGE AMOUNT OF E-WASTE PRODUCED BY EVERY PERSON ON THE PLANET



### WHAT'S IN A SMARTPHONE



- 45% PLASTIC
- 10% CERAMIC
- 20% COPPER
- 20% GOLD, ALUMINUM AND OTHER METALS
- 5% NON-METALS

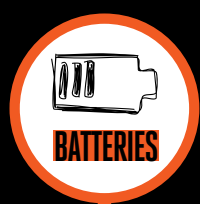
SOURCE: TIM RECARREQUE O PLANETA

### A TON OF GOLD ORE CONTAINS 5G OF GOLD, WHEREAS A TON OF MOBILE PHONES CONTAINS 400G OF GOLD

### USD21 MILLION A YEAR IN GOLD, SILVER, AND OTHER METALS CAN BE EXTRACTED FROM WEEE

SOURCE: E-WASTE ACADEMY (EWAM)

### RESULTS OF THE RECYCLING PROCESS



COMPOSITION: COBALT, NICKEL, COPPER



BATTERIES, MAGNETS, STAINLESS STEEL, METAL OXIDES, INK PIGMENT, AND SALTS.



COMPOSITION: GOLD, PALLADIUM, COPPER



JEWELRY, MUSICAL INSTRUMENTS, ELECTRONIC EQUIPMENT



COMPOSITION: PLASTIC



TRAFFIC CONES, CHAIRS, TYRES, PET FOOD CONTAINERS AND OTHER EVERYDAY OBJECTS.

### LATIN AMERICA MOBILE OPERATORS WILLINGLY DEVELOP:

  **REVERSE LOGISTIC SCHEMES**

  **AWARENESS CAMPAIGNS**

  **RECYCLING PROGRAMS**

 **STANDARDS ADOPTION**

V



# Conclusions

**As the mobile economy in Latin America grows, so does the number of mobile devices in use and the network equipment needed to deliver high-quality mobile service. As a result, the amount of e-waste related to these activities is rising.**

Far from ignoring this problem, mobile network operators — members of GSMA — are implementing a wide range of projects, including: (1) recycling network equipment, (2) implementing reverse logistic schemes to store and manage unused mobile devices, chargers, and batteries, and (3) conducting awareness campaigns to alert people about the risks of inappropriate e-waste management. Mobile network operators from Latin America are joining other industry actors to implement and coordinate collective action.

**LATIN AMERICAN OPERATORS ACCEPT THEIR RESPONSIBILITY TO DEAL WITH POST-CONSUMPTION E-WASTE, BUT REMAIN ISOLATED AND FACE VERY HIGH COSTS OF TREATING ELECTRONIC WASTE THEY ARE NOT SOLELY RESPONSIBLE FOR.**

**However, in terms of WEEE management, the region has two characteristics that impede the actions of mobile network operators: excessively rigid legal frameworks and a lack of infrastructure for WEEE management.**

Requirements for e-waste management in Latin America are relatively new, and governments have established rigid legal frameworks without the input or consent of the involved parties. At a global scale, legal frameworks include the concept of extended producer responsibility, which makes the manufacturer responsible for the entire lifecycle

of the product, especially post-consumption. This type of requirement includes comprehensive WEEE management schemes. Network mobile operators are one of the many parts on these schemes and they are included in a balanced manner<sup>4</sup>. **Due to the characteristics of the Latin American market the mobile network operators assume manufacturers role generating excessive costs and obligations.**

Second, Latin America lacks the infrastructure needed to manage the amount of WEEE generated in the region. For example, according to Waste Management World, lacking

the infrastructure for solid waste management costs Brazil around USD13 billion per year. **Moreover, the vast majority of Latin American countries do not have recycling plants to process hazardous materials such as mobile phone batteries. Therefore, these materials must be sent to other countries for proper disposal.**

This puts mobile operators in a dilemma: if they voluntarily assume responsibility, they could end up isolated, facing the high cost of managing e-waste that was not generated solely by them. In regard to network equipment, MNOs act

<sup>4</sup> ROYAL DECREE 208/2005, 25TH FEBRUARY, ON ELECTRICAL AND ELECTRONIC EQUIPMENT AND MANAGEMENT OF ITS WASTE.

## THE REGION NEEDS A BUSINESS ECOSYSTEM THAT INCLUDES DEVICES WITH EXTENDED LIFECYCLES, ACTORS WHO ACCEPT THEIR RESPONSIBILITY, ECO-EFFICIENT PRODUCTION AND COMMERCIALIZATION CHAINS, AND REGULATORY FRAMEWORKS THAT FOSTER INTEGRATED E-WASTE MANAGEMENT.

differently, taking full responsibility according to the legal framework of each country. For example, Telefónica managed 620 tons of RAEE from its networks around Latin America.

**In this context, Latin American countries should foster extensive multi-stakeholder discussions to achieve transparent, comprehensive and coordinated regulatory frameworks.** The region needs to increase appropriate WEEE management, encourage best practices on reuse and recycling, and develop an effective method for measuring results. New rules should be agreed among manufacturers, importers, operators, service providers and recycling companies. These are the recommendations of a wide range of worldwide institutions such as the ITU, the StEP Initiative, EMPA and RELAC Platform, among others.

**In addition, it is essential that operators continue to use all communication channels to raise awareness about the importance of proper management of e-waste among its customers.**

It is vital to educate users on their responsibility for the proper disposal of obsolete mobile devices and the environmentally friendly alternatives — as well as sustainability programs offered across different Latin American countries. Many mobile network operators also adopt and promote the standards and best practices recommended by the ITU for sustainability of the telecommunications sector. It is recommended that: 1) green products are produced that are cheaper to recycle, 2) software is upgraded to extend the useful life of devices and to reduce the cost of reuse, and 3) solutions are

implemented such as the universal charger, an ITU initiative that builds on the previous work of the GSMA.

**The WEEE management industry has expanded worldwide and led to new concepts such as urban mining. MNOs and other industry players should pay special attention to these concepts when seeking sustainable business models for e-waste management.** According to experts of e-Waste Academy (EWAM) led by StEP Initiative, 320 tons of gold and 7,500 tons of silver per year are required to produce electronic devices such as PCs and cell phones. If this material could be efficiently extracted, it would have a market value of USD21 billion.

In short, the mobile industry in Latin America is generating a major social and environmental contribution through various e-waste campaigns and treatment programs. These projects are essential to sustainable growth of mobile services. It is time for the industry to join forces and advocate for fair WEEE regulations with equitable financial burdens and transparent and auditable systems. **Initiatives such as those detailed in this report can be even more effective and beneficial to society, and in order to achieve that, the region needs a business ecosystem that includes devices with extended life cycles, actors assuming their responsibility, eco-efficient production and commercialization chains, and regulatory frameworks that foster integrated e-waste management.**





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To see the complete report, visit [www.gsma.com/latinamerica/](http://www.gsma.com/latinamerica/)

