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# The Ethical Issues of Dumping Electronic Waste in India

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**The Ethical Issues of Dumping Electronic Waste in India**

**RELG-327-LC Business Ethics**

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Box #508

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## **I. Introduction**

Electronic waste, also referred to as “e-waste,” is all waste made from electronic products such as computers, mobile phones, digital music players, refrigerators, washing machines, and TV’s (Pinto, 2008). There is e-waste produced in the manufacturing process as well as the final disposal of the product. Although developed countries consume most electronics, it is increasingly common for countries that are still developing to possess electronic goods (Larrdis, 2011). Use of technology and connection to worldwide networking is a huge step for the progress of these countries, but having gained a “part” of the developed world without the associated infrastructure to responsibly handle it is quite dangerous.

India is currently one of the top developing countries in the production of electronics, which has been a growing field for them since the 1990’s. Since the technological boom, India has seen a growing middle class and increase in jobs in IT research and engineering (Carroll, 2014). Although this market is very profitable for India, it comes at a substantial, and often hidden cost: e-waste. India produced about 800,00 tons of e-waste in the year 2012 (Borromeo, 2013), which was more than double what it was in 2008 (Pinto, 2008).

Most e-waste is produced in West and South India while most recycling centers are in northern India (Pinto, 2008). The main sources of e-waste are government, public, and private industrial sectors, which account for 70% of the waste, while households account for 15%. Three billion electronic devices and electrical appliances became e-waste in 2010, weighing an estimated 20-50 million tons, comprising about 5% of all municipal solid waste. Televisions and computers

take up a majority of the volume, and many of the substances that are in computers can be toxic and carcinogenic if not handled properly. This handling of e-waste poses serious health and environmental issues for the people of India.

## **II. The Effects of E-Waste**

Given the large volume of e-waste, one has to wonder, where does all of it go? India is a very densely populated region, so landfills would be quickly filled if all of it were dumped back into the ground. Besides this traditional disposal, it is also incinerated, releasing toxic chemicals into the air. How about recycling the non-hazardous parts of the electronics? Recycling is a well-known, environmentally friendly procedure, surely that would be a possible way to make better use of the waste that is not toxic. Despite general health hazard of e-waste disposal, most material is non-toxic. About 50% of it is iron and steel, 21% plastics, 15% non-ferrous metals, and 13% other materials. The iron and steel can be sold as scrap metal to be recycled, and the plastic is recyclable as well. The non-ferrous metals, however, are where e-waste recycling becomes dangerous. These metals are mainly used as conducting metals that can be found in compounds that are hazardous, as well as requiring other chemicals for their extraction (Pinto, 2008). What material isn't extracted after the chemical process is dumped into a landfill along with the extraction chemicals, where the pollutants can easily seep into groundwater and cause health issues for the public (Borromeo, 2013).

According to Toxics Link, an organization devoted to providing the public with information on toxic materials in e-waste, the removal process for these

precious metals can lead to both short-term and long-term health issues that include break down of the nervous system and cancer (Carroll, 2014). This is extremely concerning, considering around 90% of the waste is handled informally and with improper handling. Over 1 million poor people are involved in these manual-recycling operations (Borromeo, 2013). Most are poor women and children from both rural and urban areas who are uneducated and do not know about the toxins hidden in the electronic waste (Pinto, 2008). These old electronics and appliances may seem like garbage to us, but for a country with a low median income of \$1,500 per year, this waste is too valuable to completely discard, and that is when the poorer citizens begin to risk their health and safety (Carroll, 2014).

Health risks in e-waste recycling are seen in other countries as well. Several studies in Guiyu, China; the largest e-waste recycling center in the world, show city residents experiencing substantial digestive, neurological, respiratory, and bone problems. Eighty percent of Guiyu's children are experiencing respiratory ailments and are at high risk of lead poisoning (McAllister, 2013). Developing countries are hotspots for developed countries to export their e-waste to, since the waste will be recycled there at a much lower price due to cheaper labor. Low prices seem good to foreign investors, but it comes at a high cost to the health of the workers, the general public, and the local environment.

Studies to assess the environmental hazards of informal recycling were conducted in 2 cities near the major city of Delhi. These outskirts are hotspots for informal recycling, so researchers sought to gather data on the water and soil health as a result of these hazardous practices (air pollution data was not able to be taken).

These places were concerning to environmental scientists because locals were extracting metals from the e-waste by burning with a blow-torch or open stove, stripping the metals using chemicals, and different melting processes. These methods release toxins into the air and produce a hazardous ash that is dumped into the ground, and can affect soil and groundwater. The results of the soil and water tests showed that many chemicals were within safe range for the public, but most soils had extremely high levels of nickel and mercury. Other hazardous chemicals were found in high concentrations in a few samples, most likely from specific sites where chemical stripping agents were being disposed of (Sinha, 2014). These informal practices are putting the health of the environment at risk as well as the health of the public within those environments.

### **III. The Cause of E-Waste**

Because electronics is the fastest growing field and production and consumption are continually increasing, there is an overflow of electronic waste being created that is not easily broken down or reused. Many products are only meant to have a short lifespan due to expected technological advances such as the continual iPhone upgrades. Although designers and manufacturers know these products will be quickly disposed in a couple years or so, these products are not made to be easily recycled since that would turn less profit for the electronics companies (Amos, 2006). For example, if the only upgrade to a phone would be an interchangeable computerized chip, then cell-phone companies would be making much less money by selling more chips and fewer brand-new phones. By making a

product that's made to last, the industry would topple due to lack of continuing demand.

With all of this e-waste accumulating in places like India and China, we have to wonder why it is such a problem in those countries rather than in our own. We consume an enormous amount of electronic goods and electrical appliances due to our high living standards and growing affluence. The U.S. produces around 3 million tons of e-waste per year. Our country has a recycling system for most e-waste, however, some corporations in our country and in others are shipping their e-waste to India to get rid of it rather than ensure they have a closed system of use and return for their product. Approximately 50,000 metric tons of e-waste is illegally imported to India per year (Pinto, 2008).

India is taking in waste in addition to what they already have, but their system for processing this waste is not up to standard. Although the Karnataka State Pollution Control Board set up a formal recycling system for e-waste, awareness about the handling system and enforcement of the rules is very poor (Borromeo, 2013). Many critics see their lack of appropriate infrastructure for recycling and disposal as ironic since India is growing in high-tech software development at the other side of the industry. There is no policy directly concerning e-waste, but there are policies on hazardous materials, which are found in many computer parts (Pinto, 2008).

#### **IV. Who Takes Responsibility?**

Since there are many factors involved in this e-waste crisis, it is difficult to say which interest group is ultimately at fault for the overload of e-waste and the health problem it creates. The groups that I would identify as having an influential role in this dilemma are the electronics companies, the e-waste exporters, the consumers, and the Indian e-waste policy and infrastructure (or lack thereof).

As mentioned before, electronics companies are the ones at the very start of the generation of e-waste since they produce the electronic good itself. These companies design products that are efficient for the time being, but not built to last since technology is constantly being upgraded, and new versions of the product are sure to be designed shortly after the original product hits the shelves, if not sooner. If the companies were to create more sustainable products that require less material, there is a chance that they may lose profit from not being able to sell an entire item. There are other electronic goods that people like to have bought cheaply for temporary uses such as headphones or kids' toys. Clearly, not everything electronic is going to be made to last a lifetime, however there are some companies that are finding other ways to lessen their e-waste impact. Many electronics companies, such as Samsung, have put into place a take back recycle program where broken/out-of-date phones are returned to the stores where they were purchased so that the phones may be sent away to be recycled in a safe facility. The main drivers behind these eco-friendly decisions are not just to lessen the effects of e-waste, but for the companies to demonstrate their civic duties by supporting various community and promoting sustainability and responsible

advancement in technological businesses. Most noted for their efforts are IBM, Volkswagen, and Sony. These companies have not seen large drawbacks in their profits, but rather have been very profitable and have gained recognition and support from society for taking sustainability measures such as environmentally safe products and self-run recycling programs (Espinosa, 2013). There are many companies that are refusing to address their impact on the environment and the communities affected by their industry, and I would give those companies partial blame for this e-waste crisis since they are hoping to make higher profits at the expense of the environment and the health of people exposed to the toxins from their company's products.

The next problem source to consider in regards to electronic waste is the group of companies in developed countries that are currently exporting e-waste out of their countries and into these poorer or less-developed countries such as India, China, and other parts of Southeast Asia. The countries in which these companies reside in have their own e-waste recycling systems, however these procedures can be expensive for recycling service companies that do not specialize in e-waste handling. The e-waste handling procedures in developed countries (such as the United States) take many safety precautions while handling hazardous electronic components, and the remaining waste is carefully treated or safely disposed of. Because of this extensive process, e-waste can be expensive to recycle, and many of these waste products cost more to process than the materials are worth. It is much cheaper for a recycling company to illegally ship all of their electronic waste to poorer countries where it can be dumped into a large pile and sorted through by

much less precautionary means (Bradley, 2014). Although most of India's waste is produced domestically, fifty thousand tons of illegally imported e-waste is still being added from countries that have the means to dispose of it responsibly themselves (Pinto, 2008). It is estimated that the developed world exports approximately 23% of its e-waste to 7 of the developing countries where there is a poor population that is willing to sort through what they find valuable (Bradley, 2014). Knowingly sending the e-waste to a country with lower standards, which is illegal, and putting their people's lives at risk to avoid unwanted costs is highly immoral in the business world, and these companies that partake in this irresponsible activity do carry some blame for the dangerous situation that they are contributing to.

Although it is impossible to identify this next influential group as a single source that is displaying ethical misconduct, it is perhaps the most driving cause of e-waste. They are the consumers, or in other terms, us. These electronics consumers come from all parts of the world, however for the sake of simplicity and specificity, I will focus on the country that is the largest producer of e-waste: the United States of America. We produce an estimated 3 million tons of e-waste per year, with the second highest country being China at 2.3 million tons per year (Larrdis, 2011). The United States has an extremely high level of affluence, especially when it comes to owning a wide array of electronic goods. From cell phones and TV's to coffee makers and curling irons, much of our house is filled with appliances and gadgets that ultimately end up as e-waste. The average American owns 20 or more electronic goods at a time (Bradley, 2014). As demonstrated in other countries, it is entirely possible to live without many of the electronic luxuries

we have. Countries such as the U.S. are increasing the demand for electronic goods, and so the electronics companies are pushed to produce more and more of them. This also is seen as a sign of wealth by other countries, encouraging them to follow the example of high affluence and buy more electronics, showing that they have also reached technological advancement. Can the consumers be blamed for the problem of e-waste if they are the ones demanding for so many electronic goods? Perhaps not on an individual basis, but certainly on a broad spectrum, consumers are the ones driving the electronics market, which is creating an ever-increasing pile of e-waste to be dealt with.

The last factor to consider being at fault for the e-waste issue is India's policy and waste management system. There are only 2 small e-waste recycling facilities in India, but most of the recycling is not done at these locations. It is illegal to handle hazardous e-waste, but there is no real enforcement of this law when it comes to informal e-waste processing. There are many scrap dealers in and around Indian cities that will find they pay much less to have the untrained and uneducated poor dismantle the electronic waste and provide them parts than by getting parts through the e-waste recycling facilities (Borthakur, 2012). By only providing the public with a couple small facilities and not enforcing policy, Indian government is not behaving responsibly. The IT field is extremely large in India, meaning they are large producers of e-waste, but these products have no safe and sustainable method of disposal; only unsafe informal recycling, incineration, or burial in a landfill. There are some organizations in India that are trying to take action towards protecting the public by providing information to the public on e-waste hazards such as Toxics

Link, but most help on prevention and awareness comes from foreign organizations. It may seem a lot to ask for from a “developing” country, but India is partially responsible for their own e-waste issue since they are a large producer of e-waste yet refuse to take any serious responsibility to manage its disposal, thus risking the health of their own public.

## **V. What Action is Being Taken?**

As mentioned, India does have a few organizations taking action by providing information on toxics and e-wastes, and they are researching new ways to improve their system and work towards environmental justice. There are other foreign organizations working towards these goals as well such as Networks for Environmental Advocacy out of San Jose, California. Others include the International Solid Waste Association, SWA of North America, and the EPA. Some global networks are working specifically for the cause of preventing e-waste exporting such as BAN, which aim to prevent all forms of “toxic trade” between countries (Pinto, 2008). Some researchers in India are supporting the environmental tactic of Extended Producer Responsibility where the producer is responsible for the entire life cycle of the product including take-back policies as well as recycling and disposal. In this method, each company will be in charge of tracking their products, ensuring safe transportation and storage, and providing a source of collectors and dealers to follow through with the recycling process. The State Pollution Control Boards would be responsible for the enforcement of these guidelines (Larrdis, 2011). Other countries that are working towards these goals

are the North American countries: The United States, Canada, and Mexico are trying to collaborate to promote building capacities for environmentally sound management of e-waste in all of North America (Bradley, 2014).

#### **IV. Conclusion**

In my opinion, this issue will only get worse until there is action taken on multiple fronts. Producers of electronics need to follow the example of businesses such as Sony and Samsung that are working on sustainable business practices, and recycling companies need to stop exporting e-waste. Consumers need to keep sustainability and environmental health in mind when purchasing electronics. And most importantly, policy needs to change in India so that proper recycling facilities are provided, which will open up safe jobs rather than have people working with hazardous materials in an informal setting. Each change will have some impact, but uniform change in all contributors will correct this issue and save lives as well as the environment.

## **Bibliography**

- Amos, Deborah. "'Wired' Says Some Electronics Aren't Built to Last." *NPR*. NPR, 4 Dec. 2006. Web. 17 Dec. 2015. <<http://www.npr.org/templates/story/story.php?storyId=6575446>>.
- Bradley, Laura. "E-Waste in Developing Countries Endangers Environment, Locals." *US News*. U.S. News & World Report, 1 Aug. 2014. Web. 17 Dec. 2015. <<http://www.usnews.com/news/articles/2014/08/01/e-waste-in-developing-countries-endangers-environment-locals>>.
- Borromeo, Leah. "India's E-waste Burden." *The Guardian*. Guardian News and Media, 11 Oct. 2013. Web. 13 Dec. 2015. <<http://www.theguardian.com/sustainable-business/india-it-electronic-waste>>.
- Borthakur, Anwesha, and Pardeep Singh. "Electronic Waste in India: Problems and Policies." *ResearchGate*. International Journal of Environmental Sciences, 2012. Web. 18 Dec. 2015. <[https://www.researchgate.net/publication/257326111\\_Electronic\\_waste\\_in\\_India\\_Problems\\_and\\_policies](https://www.researchgate.net/publication/257326111_Electronic_waste_in_India_Problems_and_policies)>.
- Carroll, Chris. "India's Poor Risk Health to Mine Electronic 'E-Waste'" *National Geographic*. National Geographic Society, 29 June 2014. Web. 13 Dec. 2015. <<http://news.nationalgeographic.com/news/2014/06/140628-electronics-waste-india-pictures-recycling-environment-world/>>.
- Espinosa, Bea B. "World's Greenest Companies and What We Can Learn From Them." *Environmental Leader RSS*. Business Sector Media, 31 July 2013. Web. 17 Dec. 2015. <<http://www.environmentalleader.com/2013/07/31/worlds-greenest-companies-and-what-we-can-learn-from-them/>>.
- Larrdis Research Unit, Rajya Sabha Secretariat, New Delhi, and 201 June. (n.d.): n. pag. *Research Unit (Larrdis)*. June 2011. Web. 18 Dec. 2015. <[http://rajyasabha.nic.in/rsnew/publication\\_electronic/E-Waste\\_in\\_india.pdf](http://rajyasabha.nic.in/rsnew/publication_electronic/E-Waste_in_india.pdf)>.
- McAllister, Lucy. "The Human and Environmental Effects of E-Waste." *Population Reference Bureau*. University of Colorado, Apr. 2013. Web. 13 Dec. 2015. <<http://www.prb.org/Publications/Articles/2013/e-waste.aspx>>.
- Pinto, Violet N. "E-waste Hazard: The Impending Challenge." *Indian Journal of Occupational and Environmental Medicine*. Medknow Publications, 12 Aug. 2008. Web. 13 Dec. 2015. <<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2796756/>>.
- Sinha, Satish, and Ashish Mittal. "Impact of E-Waste Recycling on Water and Soil." *Toxics Link* (n.d.): n. pag. *Toxics Link*. Toxics Link, 2014. Web. 17 Dec. 2015. <<http://toxicslink.org/docs/Impact-of-E-waste-recycling-on-Soil-and-Water.pdf>>.