

Computing for Human Services

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Chapter 17

Computers and Electronic Devices Waste: Analysis and Solution

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17.1. Introduction

Environment problem is an essential issue in modern life. Advances in electronic and cost reduction leads to rapid growth of computers and electronic devices. These devices improved our life but it created environmental problem called e-waste. Millions of tons of garbage generated yearly as e-waste world-wide. It is more toxic and harmful than normal household garbage. E-waste contains toxic heavy metals, including arsenic, antimony, lead, mercury, nickel and zinc. It is estimated that about 40% of all heavy metals in household garbage comes from electronic equipment. Big challenge between electronic companies to control markets; leads to use of incomplete technology to have agile products with small change in term of functionality or design. This was associated with tantalizing advertisements to affect customers' decision on buying new devices. Creative engineers and effective recycling system are needed to produce eco-friendly products that are easier to recycle and handle in their end-of-life. Several developing countries in Asia, Africa and Latin America suffer from lack of proper systems for recycling and disposal treatment. This leads to increase e-waste problems because of increasing consumption at present and in addition, e-waste is exported from industrial world to developing nations. In informal recycling in China, India, Ghana, Nigeria, and Mexico workers are exposed to hazardous chemicals and material when products are broken apart to extract valuable content, water, air and soil are also polluted.

This chapter is an analytical study for e-waste status. It proposes an effective guidance solution to eliminate e-waste, protecting workers and environment in developing world as step toward green environment.