

# Challenges in the Management of Electronic Waste in India: Some Primary Observations

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Electronic waste (E-waste) or Waste Electrical and Electronic Equipment (WEEE) is emerging as a grave concern for most of the Indian cities today. The country has observed a significant growth in the Electronics and Information Technology (IT) industries in the recent past. For instance, Indian information technology industry has been one of the major drivers of change in the economy in the last two decades and has contributed significantly to the digital revolution being experienced by the world. Further, the demand for consumer electronics in the country has been enormous. A recent report suggested that India adds 15 million mobile phones every month into its market which eventually ends up being E-waste after a specific period of time. Consequently, the amount of E-waste, in terms of both internal generation and illegal import, generated in the country is thriving at an alarming rate, although E-waste management practices and policy interventions are still at an embryonic stage. Thus, eco-friendly and resource-friendly management of E-waste is a major apprehension in the country today.

In order to devise and implement appropriate E-waste management strategies and associated policy initiatives, it is essential to analyse the current challenges, opportunities and threats to the E-waste management system in India. Therefore, a “*SWOT (Strengths, Weaknesses, Opportunities and Threats) Analysis*” was conducted to assess the situation based on semi structured interviews carried out with stakeholders from two rapidly growing cities in the country, i.e. *Pune and Bangalore*. The study has been carried out considering representative stakeholders associated with the generation and management of E-waste in these two cities. Four different stakeholders are considered for the purpose of the study: *IT industries, banking sector, households and educational institutes*. All the four stakeholders considered are listed as major generators of E-waste in India by the Indian Ministry of Environment and Forest. There are quite a few reasons why the cities of Pune and Bangalore are selected for the purpose of our study. Bangalore and Pune are the two cities in India which have observed significant growth in the recent past. Considering the number of public and private sector establishments in these two cities, it is evident that both are repository of significant volume of E-waste. For instance, according to the Indian Ministry of Environment and Forest, Pune and Bangalore rank among the top 10 Indian E-waste generating cities. Both the cities are prominent IT hubs of the country, with Bangalore famously being called the ‘Silicon Valley of India’. Pune is known as the ‘Detroit of the East’ because of its position as a prominent automobile hub. Therefore, it is quite perceptible that both Pune and Bangalore can act as models for evaluating the management strategies of E-waste in India and associated challenges.

Further, “*STEEPV Analysis*” was conducted to look for trends, drivers, impacts, etc associated with the E-waste scenario in India. STEEPV is an acronym for Social, Technological, Economic, Environmental,

Political and Values. The paper successfully identified a number of Strengths, Weaknesses, Opportunities and Threats associated with E-waste in the country along with major challenges related to its Social, Technological, Economic, Environmental, Political and Value connotations. In brief, the paper is an attempt to analyse the *current E-waste management practices, disposal behaviour of diverse stakeholders and public perception/awareness on E-waste* in India in order to formulate and implement appropriate management strategies and policy initiatives.

The results show that E-waste is emerging as a major societal consequence of Electronics and IT boom in India. The country is emerging as a global IT and electronic manufacturing hub and thousands of computers become obsolete every year from the IT industry alone. There is a large informal recycling sector involved with E-waste recycling where 95% of the E-waste generated in the country is recycled with no health and safety measures for the workers. The basic contestation rests in the growth of one of the *fastest growing emerging technologies* (in the form of IT) which results in *one of the fastest growing toxic waste streams* (in the form of E-waste). The study shows a high level of perplexity among the stakeholders regarding the disposal of their obsolete electronics. Most of them are ignorant about the hidden resources in E-waste and its toxic composition. Around 70-80% of them are willing to “upgrade” their electronics (especially mobile phones and computers) at regular intervals in order to maintain their social status, uninterrupted access to information, social network and so on. Thus, penetration of electronic goods and gadgets at an alarming rate is a major cause of concern in this populous country.

In conclusion it could be said that in India, E-waste is both a challenge and an opportunity although it has a number of technological, economic, environmental and health connotations. For instance, it is an opportunity because it provides ample employment opportunities to urban illiterate poor, the hidden treasure in E-waste could serve the resource deficit areas of the country and so on. Our challenge lies in maximising the opportunities related to IT and minimising the threats associated with E-waste. Without our successful attempt to do so, the country could be a massive threat to this global toxic waste stream.

Keywords: E-waste; Disposal Behaviour; Public Awareness; SWOT; STEEPV