Chapter 14
E-Waste Management in India:
Need for a Circular Approach

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ABSTRACT

E-waste is a rising problem given the volumes of e-waste being generated and the content of both toxic and valuable materials in them. This new kind of waste has raised serious concerns regarding their disposition and recycling all over the world. Having hazardous components in television and computer monitors (lead, mercury, and cadmium) and in circuit boards (nickel, beryllium, and zinc), the recycling and discarding of e-waste becomes a key concern. Disposal of e-waste poses serious environmental and health hazards. However, these problems can be tackled with the help of a circular approach. In this backdrop, the chapter discusses the problem of e-waste management in India, the related environmental and health issues in e-waste handling and disposal. It also discusses e-waste recycling practices in India and the current policy level interventions by the government. The chapter also highlights the possible business opportunities offered by the circular approach to e-waste management.

INTRODUCTION

There is an increasing impact on the environment due to consumerism and the changing lifestyle. The consumption of electronic and electric equipment that have short life cycles and the rapidly developing technology have led to increased e-waste volumes (Gaidajis, Georgios & Angelakoglou, Komninos & Aktsoglou, Despoina,2010). Electronic waste or e-waste generate both toxic and valuable materials, therefore it generates a problem as well as business opportunities (Widmer, Krapf, Khetriwal, Schnellmann & Böni, 2005). E-waste is made of discarded electronic appliances . Currently global production of e-waste is estimated to be 20-25 million tonnes per year . USA and Europe and Australasia are major

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producers but it is estimated that China, Eastern Europe and Latin America would become the next major producers of E-waste in the coming times (Robinson, 2009).

E-waste contains toxic materials which is hazardous in many ways and causes many diseases(Adhana,2020). The last decade has seen a rise in the consumption of electronic and electrical equipment and it is rapidly producing e-waste. E- wastes may contain gold, silver and other precious metal on one hand and on the other hand it may contain toxin material

It is evident that regulatory approaches are not enough for the management of e-waste, therefore engagement of all stakeholders such as manufacturers, retailers, labours, investors and customers is needed, to develop innovative solutions that will bring the extensive informal sector of e-waste management under guidelines that protect environmental quality and human health .

E- waste in India

India is third biggest producer of e-waste after China and USA (Mohan, 2020). This is produced by both, from domestic generation and illegal imports. India is also used as a dumping ground. These cheap second hand electronic and electrical material lures small business men and they see a great business opportunity in using them. Developing countries lack proper laws and enforcement of laws, which promotes the growth of unstructured economy. Therefore an entire new informal sector breeds in India wherein trading, repairing and recovering materials from redundant electronic devices are thrived. People in India are unaware of the dangers they are dealing in. Informal sector thrives on second hand electronic products as there is lack of awareness and support from the government. The Associated Chambers of Commerce and Industry of India and KPMG studied e-waste management in India and found that computer equipment account for 70%, telephone equipment phones 12% and electrical equipment 8% and medical equipment account for 7% household waste. Though there are no database for the total amount of e-waste generated in India but Basel action network, WA and Toxins India reported that 1.38 million personal computers will become obsolete 1050 tonnes of electronic scrap is being produced by manufactures and assemblers in single year in India.

There is an absence of any comprehensive evaluation regarding the application of a standard approach and methodology to estimate e-waste in India. United Nations published a report in 2017 which claimed that 44.7 million metric tonnes (MMt)of e-waste was generated in 2016 and 2 (MMt) was generated in India only. It is expected to reach to 5.3(MMt) by the year 2020. (Current Affairs,2020).The process of e-waste is accelerated with the advent of liberalisation . The top states in which contributes to e-waste is Maharashtra, Andhra Pradesh, Tamil-Nadu, Uttar Pradesh, West Bengal, Delhi, Karnataka, Gujarat, Madhya Pradesh and Punjab. India loses highly precious elements in e-waste, which could be used for strategic advantage (Mohan,2020). Major issue in India has been the regulation of e-waste management and its implementation aggressively. India requires both government policies and initiatives by social and environmental innovators (Fiksel, Sanjay, & Raman,2020).

Reasons for the Increasing E-waste

There are several reasons for the increase in the amounts of e-waste generated every year. The last two decades have witnessed a significant increase of the e-waste generated in India, which is an outcome of the socio-economic development and is also a characteristic of any developing economy (Borthakur and Govind, 2018). Some of these reasons are increasing consumerism, rise in the disposable income,