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5.   **KEYWORDS**: Abstract must be followed by a list of keywords, subject to the maximum of five. These should be arranged in alphabetic order separated by commas and full stops at the end.

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     OBJECTIVES

     HYPOTHESES

     RESEARCH METHODOLOGY

     RESULTS & DISCUSSION

     FINDINGS

     RECOMMENDATIONS/SUGGESTIONS

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BOOKS

- Bowersox, Donald J., Closs, David J., (1996), "Logistical Management." Tata McGraw, Hill, New Delhi.
- Hunker, H.L. and A.J. Wright (1963), "Factors of Industrial Location in Ohio" Ohio State University, Nigeria.

CONTRIBUTIONS TO BOOKS

- Sharma T., Kwatra, G. (2008) Effectiveness of Social Advertising: A Study of Selected Campaigns, Corporate Social Responsibility, Edited by David Crowther & Nicholas Capaldi, Ashgate Research Companion to Corporate Social Responsibility, Chapter 15, pp 287-303.

JOURNAL AND OTHER ARTICLES

- Schemenner, R.W., Huber, J.C. and Cook, R.L. (1987), "Geographic Differences and the Location of New Manufacturing Facilities," Journal of Urban Economics, Vol. 21, No. 1, pp. 83-104.

CONFERENCE PAPERS

- Garg, Sambhav (2011): "Business Ethics" Paper presented at the Annual International Conference for the All India Management Association, New Delhi, India, 19–22 June.

UNPUBLISHED DISSERTATIONS AND THESES

- Kumar S. (2011): "Customer Value: A Comparative Study of Rural and Urban Customers," Thesis, Kurukshetra University, Kurukshetra.

ONLINE RESOURCES

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WEBSITE

- Garg, Bhavet (2011): Towards a New Natural Gas Policy, Political Weekly, Viewed on January 01, 2012 http://epw.in/user/viewabstract.jsp

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ISSUES AND CHALLENGES IN ELECTRONIC WASTE

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ABSTRACT

In our daily life we are frequently using electronic items like computer, mobile phone, PDAs, television, pager, digital photo frame etc. But due to tremendous competition in the market and technological advancement, various venders are developing newer and newer products with more functionality. Hence people are now a day frequently change or purchase a new electronic product, which indirectly makes earlier purchased product useless or less useful. Such useless or older products later on become Electronic Waste. So far electronic waste has not created big problem in developed and developing countries, but as penetration of electronic items to the general people increasing rapidly, in coming decade electronic waste may become a big problem for developing countries. In this paper we had highlighted important issues which are related to the electronic waste generations, waste management and suggestions are made such that electronic waste can be minimized.

KEYWORDS

Electronic Waste, E-Waste, E-scrap, E-Waste Management Standards.

INTRODUCTION TO ELECTRONIC WASTE

Now a day we frequently use different types of electronics devices in our daily life. Electronics industry is the fastest growing manufacturing industry in the world. Due to rapid research advancement and development in different field of engineering and technology, frequently new electronics products are launched in the market every day. Such newly developed products are cheaper and better in terms of performance compare to older devices, which is one of the main reasons why people buy a new product. Such cases are frequently happening in the category of the products like Computers systems including monitors, Televisions, Radio, Cell phones, DVDs, VCRs, audio equipment, video games and other personal digital assistant (PDA). Rapid electronic product obsolescence makes such products "disposable" very quickly. This reduces the average life span of the electronic product. Later on such discarded electronic products become the "Electronic Waste (E-Waste)". According to very famous web site Wikipedia, the term electronic waste can be defined as discarded computers, office electronic equipment, entertainment device electronics, mobile phones, television sets and refrigerators. This definition includes used electronics which are destined for reuse, resale, salvage, recycling, or disposal (Wikipedia, 2011).

It is very important to address and tackle e-waste issue at this moment, because according to one of the survey conducted by the Environmental Protection Agency only 15-20% of e-waste is recycled, the rest of these electronics go directly into landfills(EPA, 2011), which is very bad from environmental safety point of view. Electronic wastes can cause widespread environmental damage due to the use of toxic materials in the manufacturing process of electronic goods (Kurian Joseph, 2007). The major part of the electronic waste is generated from the old televisions, cathode ray tube based monitors, refrigerators and cell phones. Figure 1 shows some of the sites where electronic waste dumped in open land.

FIGURE 1: MAJOR CATEGORIES OF ELECTRONIC WASTE

| Old television & Monitors (Wordpress,2011) | Cell phone waste (Highdesert, 2011) | Monitor waste(Shoroc, 2011) |

If we talk about the current practices of electronic waste management in developing countries, it suffer from a number of drawbacks like the difficulty in unhealthy conditions of informal recycling, inadequate legislation, poor awareness and reluctance on part of the corporate to address the critical issues related to e-waste management.

MAJOR ISSUES RELATED TO ELECTRONIC WASTE

RAPID GROWTH OF E-WASTE GENERATION

It has been observed that average life of electronics products are ranging from 5 years to 20 years. Since the usage of electronic items increased rapidly from last 10 to 20 years, the users of such product will be generating more and more e-waste in coming years. One of the surveys conducted (e-wasteregulation, 2011) will be given in Figure 2 shows the rapid growth of e-waste. The survey shows the continuous growth in the e-waste.

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FIGURE 2: E-WASTE GROWTH SURVEY
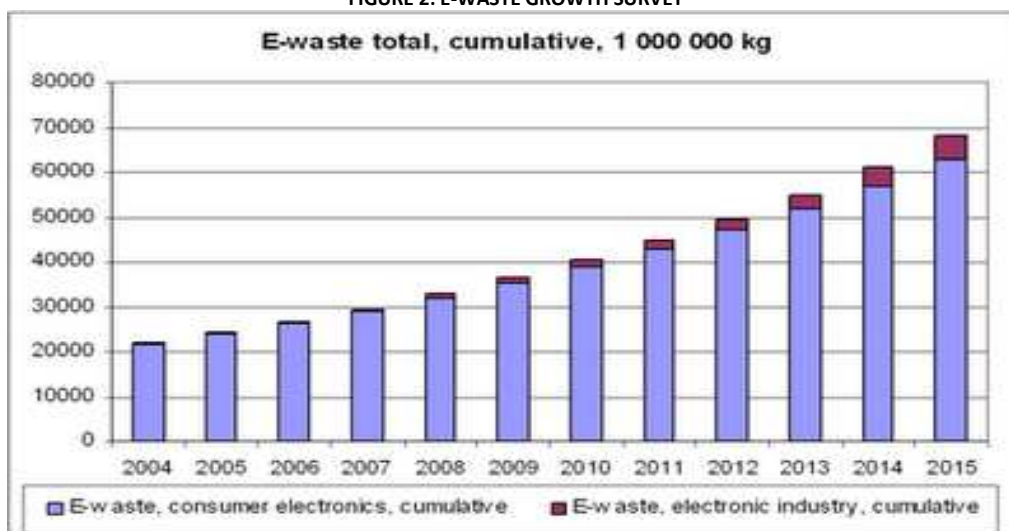
The latest report released by the United Nations predicts that by 2020 e-waste from old computers in South Africa and China will have jumped by 200–400 % and by 500 % in India compared to 2007 levels. It also states that by 2020 e-waste from discarded mobile phones will be about 7 times higher than 2007 in China and 18 times higher in India (Chemistry views, 2011). According to that study by EPA, in 2007, of the 2.25 million tons of televisions, cell phones and computer products ready for end-of-life (EOL) management (EPA, 2011) 18% (414,000 tons) were collected for recycling and 82% (1.84 million tons) were disposed of, primarily in landfills.

By the year 2020, e-waste from televisions will be 1.5 to 2 times higher in China and India while in India e-waste from discarded refrigerators will double or triple. China already produces about 2.3 million tonnes (2010 estimate) of e-waste domestically (Unep, 2011). So it is important to control this rapid growth of e-waste generation before it creates big problem.

RECYCLING OF ELECTRONIC PRODUCTS

Products like old computers are recycled to recover costly materials from it. For example, in a computer waste hard disks are broken to recover the aluminum casting, then after the remaining material are dumped in the open landfills. There are two types of electronic waste, hazardous and non-hazardous. It is easier to recycle the non-hazardous material compare to the hazardous material. It is observed that limited data is available regarding how e-waste is managed. It is also observed that e-wastes are handled improperly by the recycler of e-waste. Followings are the major observed recycling e-waste procedures (Linda Luther, 2010)

- burning the plastic coverings of materials to take out metals from scrap,
- openly burning circuit boards to remove solder
- soaking e-waste in acid baths to extract metals from e-waste like gold or other precious metals.

Acid baths waste are then dumped into surface water which is very bad for creature dependant on such surface water. It should be important to note here that an individual electronic device may not have hazardously high levels of a toxic material, but the cumulative force of large volumes of e-waste being disposed of in a solid waste landfill has become disturbing to many governments and e-waste management organizations.

As only 15-20 % of e-waste are recycled now a days, remaining amount of material becomes e-waste which creates problem for environment. So the recycling of the e-waste at this point of time is not the complete solution of this problem. We need to develop more advanced technique of recycling of e-waste so that percentage of re-usage can be increased.

HURDLES IN RECYCLING OF E-WASTE

Electronic product contains different types of hazardous materials which are harmful to human health and the atmosphere if not disposed of cautiously. The important hazardous substances present in the e-waste are Arsenic, Barium, Beryllium, Cadmium, Chromium VI, Lead, Lithium, Mercury, Nickel and Zinc Sulphide (TFP Group, 2011). These are the various heavy metals and they are toxic in nature. They are found in various electronic equipments like light emitting diodes, cathode ray tubes(CRT), Rechargeable batteries, power supply boxes, printer inks and toners, photocopying-machines (printer drums), fluorescent layer in CRT screens, printed wiring boards, fluorescent lamps that provide backlighting in LCDs, alkaline batteries and mercury wetted switches.

Earlier stated substances are toxic in nature and may lead to different kinds of diseases in human body. Due to exposure of such substances human body may suffer from various diseases of the skin, brain swelling and muscle weakness. Cadmium components may have serious impacts on the kidneys. Also short-term exposure to high levels of lead may cause vomiting, diarrhea, coma or even in worst case up to the death of human. This may be one of the reasons why people or industries are hesitating in recycling electronic waste.

The cost factor related to recycle of e-waste of also very important. According to one survey by Congressional Research Service (Linda Luther, 2010) it is found that e-waste recycling procedures involves complex processes and it is more costly to recycle e-waste. It is very easy to recycle a single component product like news papers or plastic bottles. But an electronic device in the e-waste contains a lot of mixed materials/metals that may not be easily separated or extracted.

ROLE OF ELECTRONIC GOODS DEVELOPER AND USER

The developer and manufacturer of electronic goods should develop a product in such a manner that maximum amount of material from the electronic products can be re-used when it is discarded by the user. To get the maximum profit and to maintain their product cost low, there is tremendous competition between the manufacturing companies of electronics product. Also sometimes companies are spending less in their research and development work, which indirectly responsible for the lower percentage of recycling of e-waste.

Recycling of e-waste facility is not available at all places; hence many users of electronics products are not able to submit their products for recycling purpose. Also some of the users are not interested in submitting the e-waste for recycling purpose which is also responsible for lower percentage of recycling.

E-WASTE MANAGEMENT POLICY IMPLEMENTATION

Presently e-waste management policies are there but no clear guidelines available to the general public regarding such e-waste management policies. Manufacturers of various electronics goods must be responsible for educating customers and the general public regarding the potential hazard to public health and the environment posed by their products (Kurian Joseph, 2007).

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Due to humble efforts from the various NGOs and government, some general awareness have started and people are now submitting their old electronic products for recycling purpose instead of just dumping it in to the open space. Also many internationally well known companies like SONY, SAMSUNG, Hewlett-Packard (HP) and Dell have already started to consider e-waste management aspects along with their electronic products.

SUGGESTIONS TO REDUCE ELECTRONIC WASTE

E-WASTE MANAGEMENT STANDARDS

There are e-waste management standards available as a standard guideline while handling the e-waste. Environmentally sound e-waste management standard means taking all possible steps required to make sure that e-waste are managed in a way which shall protect the environment and health against any unpleasant effect. But this is not happening presently as e-waste standards are in very early stage of implementation in India. In United States, many states have instituted mandatory electronics recovery programs. The details about US recycling rules are available on www.ecyclingresource.org website.

Up to April 2011, in India there are no specific laws or guidelines for electronic waste or computer waste management. They will come into effect from May 2012. The Ministry of Environment and Forest (MoEF), Government of India has for the first time notified e-waste management rules(Business Standard, 2011). The e-waste (management and handling) Rules, 2011 would recognize the producers' liability for recycling and reducing e-waste in the country. The rules will come into effect from May 1, 2012. This rule will be application to the every producer, consumer or bulk consumer involved in the manufacturing of electronic product, sale, purchase and processing of electrical and electronic equipments. Effective implementation of such kind of e-waste management standards will help in reducing e-waste.

As per the guideline given in E-waste (management and handling) Rules, 2011, Government of India, every producer, collection center of e-waste and recycler of e-waste may store e-waste for the period of 180 days only. Because of this restriction of 180 days, involved stack holder of e-waste management have to process/recycle the e-waste in the given period only, which indirectly reduce the e-waste in specified period of time.

FORCEFUL IMPLEMENTATION OF E-WASTE MANAGEMENT POLICY

Government can force manufacturer of the electronic goods to reuse some percentage of their own e-waste products after recycling it. These will reduce some e-waste and also indirectly encourage the manufactures to do more research in the direction of recycling of their own products.

Manufacturer may be forced to use some percentage of biodegradable materials in their products/components development. Government may also force them to use newer technology particularly for manufacturing and de manufacturing. Also they can be forced for the green packaging options. The producer/manufacturer may be given the responsibility of collection of e-waste generated during the manufacturing processes. The producer shall be responsibility for the collection of e-waste generated from the end of life of product and setting up the collection center for collecting the wasted products.

Manufacturers of electronic and electrical equipments shall be forced to reduce the use of Lead, Mercury, Cadmium, Haxavelant chromium and other hazardous material in their products. In avoidance is not possible then they should be forced to mention such information along with the product itself mentioning the hazard which may occur. This forceful implementation will become possible and easier for the government once the e-waste (management and handling) Rules, 2011 come into effect.

TRAINING OF E-WASTE MANAGEMENT POLICY ASPECTS

All personnel involved in handling e-waste collection, distribution to recycler and management of e-waste recycling should be properly trained for implementing all the aspects of e-waste management policy. Such kind of training should be given to all the levels of persons in industries including employees working at operational, managerial and at strategic level.

REWARDS FOR RECYCLING E-WASTE

Companies can adopt their own e-waste management policies while handling e-wastes. Government should give some rewards in the form of financial benefits to the companies working for e-waste management. This can be done by giving various kinds of subsidies to the organization or companies involved in the e-waste management and recycling. This kind of rewards will motivate more and more companies to work in the direction of minimizing e-waste.

E-WASTE AWARENESS IN GENERAL PUBLIC

People should be encouraged to upgrade or repair their electronic goods rather than purchasing newer one every time. Awareness should be reached to the general public that donating electronics for reuse/recycle extends the lives of expensive goods and keeps them out of the e-waste management for a longer time. People can be encouraged to donate their old electronics items to the schools, non-profit organizations, and lower-income families. This can also helps to reduce e-waste.

People should be informed about the fact that e-wastes should never be disposed with garbage and other home wastes. Also while buying electronic products people should take care regarding toxic constituents of the products (should be low), reusability / recyclability of the product (should be high), energy efficiency, possibility of the upgradation (should be high) of the product and it have been certified by the respective regulatory authorities.

CONCLUSION

It is researchers and manufacturers responsibility to develop electronics products in such a manner that e-waste can be minimized. Also through proper training amongst the people involved in the e-waste recycling management and actual end user of the electronic products can save the environment from the greater damage. Strict implementation of e-waste management related standards can help greatly to reduce e-waste problem. Reusable and recyclable electronic products along with more and more plantation of the trees can help in recovering earth from the damaged occurred from the e-waste. This paper is one step from our side to generate some awareness in the area of e-waste and its management.

REFERENCES

ONLINE RESOURCES

1. Kurian Joseph, Sardinia 2007, Eleventh International Waste Management and Landfill Symposium(1-5 October 2007) viewed on November 15, 2011 http://www.swlf.ait.ac.th/UppData/International/NRIs/Electronic%20waste%20management%20in%20India.pdf
2. Wikipedia (2011): Electronic Waste, viewed on November 17, 2011 http://en.wikipedia.org/wiki/Electronic_waste#Definitions
3. EPA (2011) United States Environmental Protection Agency, viewed on November 17, 2011 http://www.epa.gov/epawaste/conserve/materials/ecycling/manage.htm
4. Wordpress(2011): viewed on November 16, 2011 http://progressivetimes.wordpress.com/2010/12/07/transitioning-to-an-economy-of-reuse/
5. Highdesert(2011): viewed on November 17, 2011 http://www.highdesert.com/news/waste-296684-ocregister-org-event.html
6. Shoroc (2011): viewed on November 18, 2011 http://shoroc.com/wp-content/uploads/2010/04/e-waste.jpg
7. e-wasteregulation(2011): viewed on November 15, 2011 http://e-wasteregulation2.blogspot.com/2010/11/how-can-we-stop-e-waste-train.html
8. Chemistry views(2011): viewed on November 20, 2011 http://www.chemistryviews.org/details/ezine/1037973/Major_Threats_From_E-Waste_Current_Generation_And_Impacts.html
9. Unep (2011): viewed on November 20, 2011 http://www.unep.org/Documents.Multilingual/Default.asp?DocumentID=612&ArticleID=6471
10. Business Standard(2011): viewed on November 22, 2011 http://www.business-standard.com/india/news/india-gets-first-e-waste-managementrules/438474/
11. Linda Luther(2010): viewed on November 25, 2011 http://www.fas.org/sgp/crs/misc/R40850.pdf
12. TFP Group(2011): viewed on December 5, 2011 http://www.tfpgroup.org/ewasteinfo.htm

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