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ELECTRONIC WASTE: A CONCERN FOR LIBRARY AND INFORMATION CENTERS IN INDIA

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Abstract

Libraries consume enormous quantities of energy for user services and comfort, content creation and preservation. They produce considerable waste, particularly in energy, water, computer paper, and used electronic equipment. Whether it breaks down, becomes outdated, or simply goes out of fashion, all electronics equipment will eventually be discarded. Unwanted electronics of any kind is known as e-waste. The safe disposal of these items, which can include appliances, computers, phones, and professional technical equipment, is a now significant concern around the globe.Developing countries are facing enormous challenges related to the generation and management of E-waste which are either internally generated or imported illegally; India is no exception to it. In this study it has been found that there is an urgent need to address the issues related to E-waste in Library & Information centers.

Key Words: *E-Waste,e-waste Library, e-waste management, e-waste Policies*

Introduction:

Digital formats and networking services are costly and require extensive technical, human, and financial support. Additionally, they consume considerable quantities of energy and water, as well as ink and paper for printouts. Developing a blended model of print and digital resources supported by social networking services has raised a major concern that sustainable progress of academic libraries is threatened by a variety of factors such as: developing and preserving print and digital collections, supplying and supporting rapidly changing technological and networking infrastructure, providing free services to the users, maintaining growing costs of library buildings and lowering libraries' "ecological footprint."

Additionally, electronic and hazardous waste is growing drastically, causing a major disparity between the goals of library sustainability and the reality of their daily operations and services. Every library store room constantly receives new books, periodicals, interlibrary loan orders, publisher catalogs, correspondence, and a variety of other mail. Furthermore, each library throws away weeded and unneeded print books, government documents, magazines, newspapers, bound periodicals, microfiche, junk mail, office computer paper, and general waste. As the number of digital projects and networking functions escalates, libraries are faced with increasing energy costs, as well as the need to recycle unwanted equipment, obsolete computers, CDs, disk drives, and used computer paper.

E-waste or Electronic Waste is any broken or unwanted electrical appliances. E-waste is relevant to any using an electronic device whether at home or office or any other environment. Consume electronics contains variety of recyclable materials like metals, glass, plastics and several other hazardous chemical substances. If old equipment's are not properly

disposed, then these substances will remain in the environment and can prove to be really, harmful to the humans and out of surroundings in the long run.

Review of literature

A wide range of literature is available on the generation and management of E-waste, especially in the developed countries. However, the work done on the Indian scenario of E-waste management is comparatively fewer. OyunaTsydenova and Magnus Bengtsson (2009) stated that along with many other issues such as the components and hazardous substances in Waste Electrical and Electronic Equipment's (WEEE), the hazards and risks associated with treatment of WEEE in both developed and developing countries should be addressed in detail. Realizing the growing concern over E-waste, the Government of India (GOI) has been supporting several initiatives. Of particular importance is the assessment conducted by the Central Pollution Control Board (CPCB) on the management and handling of E-waste leading to the preparation of "Guidelines for Environmentally Sound Management of E-waste" in May, 2008 and "the e-waste (Management and Handling) Rules, 2011".

According to the report Environmental Trends and Climate Impacts: Findings from the U.S. Book Industry, more than 30 million trees are cut down annually for production of books sold in the United States. In this so-called "paperless society," the average American uses over 660 pounds of paper annually. Michael Kanellos writes, "Xerox says that 44.5 percent of documents are printed for one-time use and 25 percent of all documents printed get recycled the same day. Lyra Research estimates that 15.2 trillion pages get printed worldwide a year, a figure that will grow 30 percent over the next 10 years."58 Also, Donella Meadows stresses the fact that "the average American pays $20 a year in taxes to support public libraries and can save that much by borrowing instead of buying just one or two books. A book that is loaned 10 times cuts not only cost but paper use per read by a factor of 10."59 While many libraries deliberately and conscientiously recycle, this alone

does not alleviate the problem. Continued library growth enlarges their "ecological footprint." Unless both operational costs and environmental waste are reduced in the long term, the continuous expansion of collections and services could reduce access to information to a limited number of people.

E-waste Management in Developed countries

Electronic waste makes up five percent of solid waste worldwide-nearly the same amount as plastic packaging. It has become the fastest growing part of the municipal waste stream and continues growing as the lifecycle of computers and phones continues to shrink. Greenpeace reports that Americans replace their computers every two to three years on average, and their cell phones after only 18 months. According to the EPA (Environmental Protection Agency, US), only one percent of these discarded electronics are recycled, which means more than 135 million mobile devices are thrown away each year.

With rapid development of technology, library has to compete with the challenging and adaptable need of the future. Without the use of electronic products, libraries will not exist. Since the number of electronic devices amounts to increase, there exists another type of concern known as E-waste Concern. The Library professionals not only care for documents but also should concentrate on the newly emerging issue "E-waste". The total amount of "E-waste" generation in libraries and archives increases.

Channel of E-waste Generation:

Following electronic products are used in libraries. They become old and corrupted in course of time.

- Computers and Laptops
- Network Equipment: Routers, Switches, Hubs, Modems
- Printers, Typewriters, Fax Machines, Scanners
- New or Used Toner and Ink Cartridges
- Peripherals: Mice, Keyboards, Wires, Power Strips, Network Cables
- Power Supplies, AC Adapters
- Flat Panel Monitors, CRT Monitors, LCDs, LCD TVs, Plasma, LED, Flat Panel
- Audio Equipment: Speakers, Stereo Equipment, Turntables
- VCRs, DVD Players, Blue Ray Players, Cable Boxes, DVR, Satellite Receivers
- RF, Radio, and Radio Parts

Dangers of E-Waste Disposal

Most e-waste contains component parts made from materials that could potentially emit toxic chemicals into the environment. When improperly disposed of, electronics equipment can release heavy metal particles into the soil and ground water. It's important to send e-waste to a trustworthy facility. Unregulated e-waste recycling facilities may use processes like burning and chemical stripping to harvest components of electronics, and those processes may release gasses like methane into the air.

Importance of Recycling Electronics

Many types of electronics equipment can be repaired and redistributed. Component metals like tin, aluminium, and iron can be removed and recycled into new manufacturing, reducing the need for additional mining. By recirculating these products via an e-recycling facility that avoids hazardous practices like burning and chemical stripping, the dangerous emissions associated with their improper disposal or dumping at landfills can be avoided.

Plans To Minimize E-waste

Following initiatives should be taken into consideration for minimizing the e-waste:

1. Dumping of E-waste in Libraries shall be avoided.
2. Non-working Computer and electronics can be either dealt for service or should be stored in a separate room for disposal.

3. Certifies Recycling agencies can be contacted for disposal rather that storing and throwing it in garbage or handing over to informal recyclers for money.

4. Working old Electronics can be donated to needy organizations rather than holding up in the library.

5. Institutional Managements can form a spate committee for collecting and disposing E-waste that is being generated in the entire institution every year particularly in Library so that the additional responsibility of E-Waste inventing and disposing among Librarians can be avoided.

6. Government shall form a specific policy for E-waste regulations in Educational Institutions and Libraries so that E-Waste generation can be avoided though not now but in near future.

7. Advertisement of Certified E-Waste Recyclers can be done in order to create awareness on E-Waste Disposal

8. Some of the E-waste Recyclers are Trishyiraya, E-Parisaraa, Ash Recyclers, etc where the library professionals can contact them for disposal of e-waste.

E-Waste: Policy level initiatives in India

In view of the ill-effects of hazardous wastes to both environment and health, several countries exhorted the need for a global agreement to address the problems and challenges posed by hazardous waste. However, the policy level initiatives regarding E-waste in India is quite rudimentary and needs immediate attention. Following are some of the policy level initiatives in India regarding E-waste.

The Hazardous Wastes (Management and Handling) Amendment Rules, 2003

Under Schedule 3, E-waste is be defined as "Waste Electrical and Electronic Equipment including all components, sub-assemblies and their fractions except batteries falling under these rules". The definition provided here is similar to that of Basal Convention. E-waste is only briefly included in the rules with no detail description.

Guidelines for Environmentally Sound Management of E-waste, 2008

This guideline was a Government of India initiative and was approved by Ministry of Environment and Forest and Central Pollution Control Board. It classified the E-waste according to its various components and compositions and mainly emphasizes on the management and treatment practices of E-waste. The guideline incorporated concepts such as "Extended Producer Responsibility".

The e-waste (Management and Handling) Rules, 2011

This is the very recent initiative and the only attempt in India meant solely for addressing the issues related to E-waste. These rules are not implemented in India as yet and will only come into practice from 1st May, 2012. According to this regulation, 'electrical and electronic equipment' means equipment which is dependent on electric currents or electro-magnetic fields to be fully functional and 'e-waste' means waste electrical and electronic equipment, whole or in part or rejects from their manufacturing and repair process, which are intended to be discarded. These rules are meant to be applied to every producer, consumer or bulk consumer involved in manufacturing, sale purchase and processing of electrical and electronic equipment, collection centers, dismantlers and recyclers of e-waste.

Responsibilities of producers, collection centers, consumers, dismantlers, recyclers etc. are defined and incorporated in these rules.

Conclusion:

In India, the amount of E-waste generated is rising rapidly. With the increasing dependence on electronic and electrical equipment, the rise of E-waste generation is well expected in the country. However, the management of the same is a major challenged faced by the country. Due to the lack of awareness, some people discard E-waste with regular municipal solid waste which is an extremely dicey practice. Academic libraries can no longer ignore the impact of environmental consumption on their future growth. Sharing resources rather than unnecessary duplication and consumption has shaped the library economic model.

The Library professionals should take immediate steps to avoid e-waste in their work spot. This disposal of e-waste will solve many issues in libraries like saving the time, harmful disease can be prevented, space can be increased, Stress can be avoided and so many factors. Etc. Sustainable strategies need to be integrated into a platform for guiding future decisions about collections, library buildings, and the scale of preservation, digitalization, equipment, products, and library networking service efforts. Such decisions need to take into account not only the cost of collection, equipment, and labor but also the cost of generated waste measured by the size of the "ecological footprint" resulting from library operations and services.

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