BLOCKCHAIN E-WASTES MANAGEMENT

[1]SHYAMALATHA.G, [2]MUTHULAKSHMI.R, [3]RITHICK.S

SRI KRISHNA ADITHYA COLLEGE OF ARTS AND SCIENCE

Abstract: **In the world of technology, change is the only constant. As soon as people start adapting to a new invention, another innovation starts paving its way into people's lives. Each change in technology brings in new and improved devices. Old devices are replaced and abandoned. Such electronic and electrical equipment that are discarded by users are termed as e-waste for long-term health effects of exposure to substances present in the waste or produced as a waste disposal facilities are more difficult to measure, especially when their concentrations are very small by their exposure pathways (e.g. food, soil) [3]. Waste management and disposal is a problem in urban and industrial areas in developing economies in all countries. Waste generation has witnessed an increasing trend parallel to the development of industrialization, urbanization, and the rapid growth of the population. In this proposed a blockchain-based approach for EWM. Blockchain is the technology that enables us to write smart contracts. Smart contracts are self-executing computer codes that take specified actions when certain conditions are met in the real world. EWM using smart contracts will bring more coordination among producers, importers, retailers, and recyclers of e-waste. It will enable the government to regulate e-waste collection and recycling. It will also reduce the imbalance between the organized and unorganized sectors which will lead to increased transparency throughout the process.**

Keywords: **Block chain, e-waste**

INTRODUCTION

The human population was a relatively growing and nomadic but a serious problem in urbanization is the growth of large conurbations. Poor management of waste led to contamination of water, soil and atmosphere it leads to a major impact on public health. The characteristics of waste material changes in lifestyle and the number of chemical substances present in the various waste streams increased dramatically. The presence of precious metals like gold, silver, and platinum in this category of waste, lures the informal sector to follow unscientific methods of extraction like burning, acid baths, etc. Improper disposal of untreated e-waste into landfills leads to the penetration of harmful elements in land and water resources. Many developed countries handle their e-waste by illegally exporting it to developing countries, like India, which act as hubs for improper recycling. The uneducated and unskilled Laboure's involved in segregation and dismantling of waste EEEs also risk their health due to poor practices followed during this process. E-waste management (EWM) is the process of discarding e-waste in an environmentally friendly manner. The first step involves the collection of electronic waste items from the consumers, followed by sorting into reusable and non-reusable products. The reusable products are kept for resale while the non-reusable products are disassembled. The non-reusable dismantled parts go through multiple rounds of shredding and separation. They are either recycled to be used again as new, or they are safely disposed of after proper treatment of process.

WHAT IS BLOCKCHAIN?

A blockchain is a growing list of records called blocks that are linked using cryptography. Each block contains a cryptographic hash of the previous block, a timestamp, and transaction data. By designing a blockchain that is resistant to modify the data Blockchain wallets do not maintain a record of the owner's balance but have access to their copy of the blockchain, which stores all transactions that ever happened on the network. The creator of each new transaction must specify all those transactions which he wants to send. This is done in the transaction's input section.
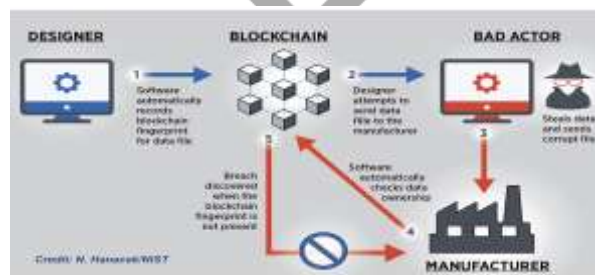

Fig 1: Transaction sector of Block Chain

BLOCKCHAIN FOR WASTE MANAGEMENT:

Blockchain based solutions for waste management includesswatch ecosystem is a Decentralized Autonomous Organization (DAO) which is governed autonomously on the basis of predefined instructions in the smart contracts. Swachh coin employs multiple cutting-edge technologies to implement an iterative process cycle over a period of time with system completely autonomous, efficient and productive. The iterative process cycle focuses on the data exchanged between various types of ecosystem by analyze the data and provide suggestions in real time based on predictive methods. One of the tools and technologies of the Swachh coin ecosystem which is frequently used are **SWATA (Swachh Big data)**in thisdata management and transparency are one of the

concerns in the waste management industry. In this waste generated, collected, transported, treated and finally disposed by SWATA employs by advanced and reliable method called prescriptive analysis. In this employee provides the data immutability is considered as block chain.

GENERATION OF WASTE:

Over last few yearsthere has been a continuous migration of people from rural and semi-urban areas like towns and cities. It leads to increase in the population in class I cities is very high when compared to that of class II cities. The uncontrolled growth in urban areas has left many Indian cities deficient in infrastructural services such as water supply, sewerage and municipal solid waste management.In many cities nearly half of solid waste generated remains unattended, giving rise to insanitary conditions especially in densely populated slums which results in increase in morbidity especially due to microbial and parasitic infections and infestations in all segments of population with the urban slum dwellers and the waste handlers being the worst affected. Waste Management is a part of public health and sanitation. The proper disposal of urban waste is not only absolutely necessary for the preservation and improvement of public health but it has an immense potential for resource recovery.

PRODUCTION OF SOLID WASTE ON WORLDWIDE SCALE:

The mass of waste produced in the world has been growing considerably for many decade affluent countries. In 2006, the USA produced more than 228 million tons or 750 kg per capita. The quantity of waste generated in the OECD area in 2006 was more than 619 million tones or 580 kg per inhabitant. As developing countries urbanized, huge amounts of municipal waste are disposed through the production per capital (less than 0.5 kg/day/capita in India and less than 0.9 kg/day/capita in China) is still relatively small the production in most individual OECD countries.

HEALTH ISSUES:

Health issues are steps for handling, treatment and disposal of waste by directly means recovery and recycling activities or other occupations in the waste management industry by exposure to hazardous substances in the waste or to emissions from incinerators and landfill sites, vermin, odors and noise. Indirectly means ingestion of contaminated was Pointed out that the frequency landfill failure in the UK was quite high, resulting in surface and groundwater pollution, despite the fact that about one third of 4000 sites surveyed had a clay liner.Despite important technological advancements, improved legislation and regulatory systems in the field of waste management and more sophisticated health surveillance, the public acceptance of the location of new waste disposal and treatments facilities is still very low due to conc environment and human healthy.

OBJECTIVE OF HEALTH CARE WASTE:
➢   To provide an overview of the different categories of health care waste.
➢   To inform health care workers of the power waste segregation, collection, disposal and transport of health care waste.
➢   To develop awareness of environmental issues relating to health care waste.

CONCLUSION:

Th present status of waste management in Indiaeffects public health and environment, for the probability of introducing improved means of disposing solid waste in India. The techniques include Recycling, Composting, Anaerobic Digestion, Incineration and Land filling etc. The objective to find out the ways in quantity of solid wastes currently disposed. Since 2008, the numbers of composting facilities are increased from 22 to 40. Currently, India has more than 80 composting plants. During the same period, the number of landfills has increased from 1 to 8. Up to 60% of the input waste is discarded as composting rejects and land filled the rest consists of water vapors and carbon dioxide generated during the composting processes. All municipalities have a waste plan which covers all types of waste, specifying the measures needed to deal with it in a sustainable, resource-efficient manner

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