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Environment Protection and Sustainable IT

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ABSTRACT
Environment is a precious gift given to Human beings, its resources are finite and valuable, but due to increase in technology, we are directly-indirectly destroying environmental resources that are not regenerated easily, but improved technology is also a need of hour. The damage that environment is suffering through the enormous use of IT tools in the form of E-waste, itself find the solution to minimize this valuable loss of nature with the process of "Remanufacturing", i.e., the reuse E-wastage material to prepare new product that are equal to brand newand also to save our Environment.
Keywords: Environment, E-waste, Carbon footprint, Sustainable IT, Circular Computing,

I. INTRODUCTION

An Environment is the blending of various Biotic and Abiotic factors, where biotic factors include all flora and fauna, and abiotic include water, sunlight, land, air, rocks, climate etc. and also Humans are blessed with the huge treasure of metals and minerals.
Technology the word came from Greek tekne(technical, art, skill) and logos (knowledge),it is the set of knowledge, expertise, experience and method through which humans change, transform and use our environment to create tools, machines, products and services that meet our needs and desires,from last few years technology has rapidly increased way of thinking and ease of living, but under the name of technology we Humans are rapidly using and destroying our valuable asset our environment. We exhume large area of land for extracting metals and minerals, we cut huge amount of woodland to obtain wood, Human manufactured chemical compounds changed environment, and many of combustion products that produce carbon-di-oxide in environment. Our routine activities generate lot of wastes that are hazardous to our environment.

II. INFORMATION TECHNOLOGY

It is the use of computer and related device to store and access information as per need. It is the base of our communication, technological advancement, innovation, sustainability and recreation, Productivity, Management. It is the base of workforce of any organization.

Fig 1. Role of Information Technology

III. INFORMATIONTECHNOLOGY SERVICES

Network: When two or more computers are connected wirelessly via cables, it comprises a network.
Compute: Through the method of computing, or data processing, is an important aspect of Information Technology. It helps in storing the data in the CPU.
Data Storage: The place where the information is stated somewhere safe without directly being processed. Storage solutions like solid-state drives and cloud storage databases are included in this drive.
Security: Cyber security helps institutions to protect their data and other technological assets to be saved from any unauthorized access.
Technical Support: This is used to fix hardware or software issues. Technical support primarily ranges from unlocking a laptop to solving network usage.

IV. IT AND E-WASTE

With rapid use of IT, we are facing the problem of E-waste. The E-wastes are non-biodegradable, toxic and amass in soil, water and living things-wastes are not only harmful to flora and fauna, but if not handled properly we will have a a momentous loss of limited and valuable raw materials, including precious metals, It is not easy to extract metal from E-waste

V. SUSTAAINABLE IT: NEED OF HOUR

Sustainable IT is also known as “Green IT”, where manufacturing, use, administration and discarding of E-waste done in such a way that it reduces its impact on the environment.

VI. SUSTAINABLE IT AND CIRCULAR COMPUTING

The laptop is an efficient and powerful portable computer just like a desktop computer, that make our daily business operations easier and more convenient, but sometimes due to more changing technical environment,

or laptop gets old we threw it away. From the study it is found that every year more than 272 million new laptops are manufactured. And every day 160 thousand old laptops are disposed of resulting in excessive resource consumption, climate change, pollution and e-waste. For manufacturing Laptop, we use several natural resources, which are extracted, refined and manufactured to turn them into Laptops. For manufacturing single new Laptop over three tones of CO2 is produced and near about 190000 liters of water is used in extraction and refining material.

VII. RAW MATERIALS USED IN LAPTOP

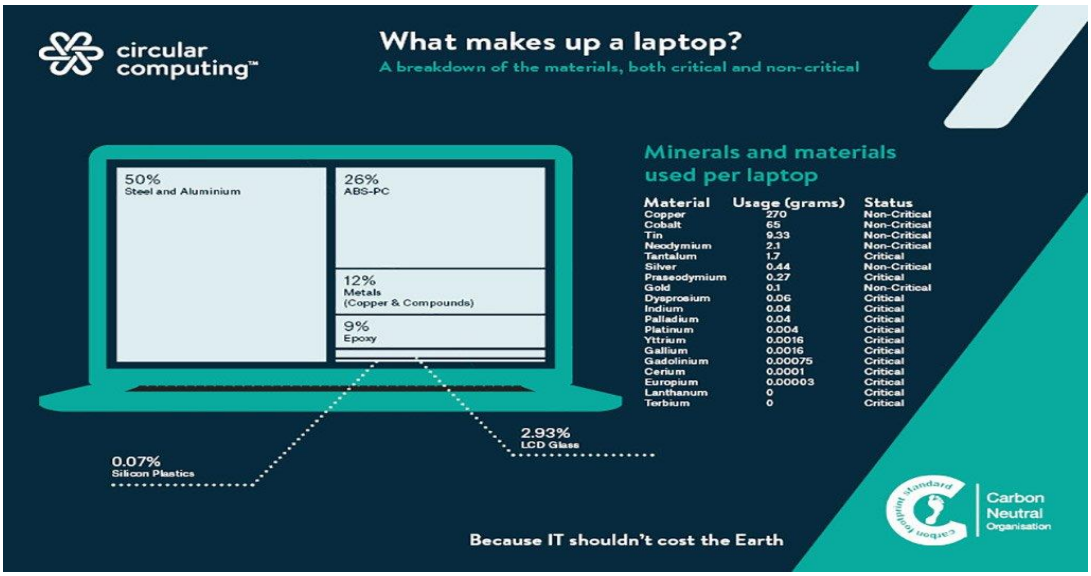

Fig.2 Raw materials used in Laptop Manufacturing

VIII. "REMANUFACTURING LAPTOPS WILL REDUCE THE IT CARBON FOOTPRINT"

The circular computing, a process of remanufacturing Laptop with better quality just like new but using carbon neutral products that helps to reduce impact of global warming and keeping environment cool and to avoid E-waste.

Fig. 3 Reduction in Carbon Emission

316 KG CO_2 Emission

For the production of Single Laptop 316 KG of CO_2 is generated through mining nad manufacturing leading to Global warming,remanufactruing will reduce this emission by using existing Laptop.

Fig. 4 Water consumption
190,000 Liters of water
Just for one laptop 190,000 of water is used for mining and production, by remanufacturing we can reduce wastage of our valuable asset.

Fig. 5 Use of Valuable Earth Resources
1200 Kg of Earth Resource's
To prepare each component of Laptop 1200 KG of environmental resources are mined and used remanufacturing not only reduce use of additional resources but it will help in reducing E-waste

Circular Computing is world's first BSI Kitemark™ certified company for laptop remanufacturing – a breakthrough for sustainable technology. The world's first remanufacturedlaptop BSI Kitemark™ was accomplish in November 2021, representing an assurance of quality in the company's Circular Remanufacturing Process. Every laptop goes through the same remanufacturingprocess to BS 8887 standards, to create a product that is equal to new one. Thehighlights of the 360-point stage accredited process, include:

- Initial inspection
- Disassembly
- Component inspection and remediation, replacement and upgrades
- Cosmetic remediation
- Reassembly and functional testing
- Final stress testing
- Visual inspection and quality checks
- Quality control and sign off

Some of the Carbon Neutral Remanufacturing Laptops are:
Lenovo T450, Lenovo T460
Lenovo T470, Lenovo T470s
HP 840 G4, HP 840 G5
Dell E5470, Dell5490, HP 840 G2, HP 840 G3,
Lenovo T480, Lenovo T480s

IX. CONCLUSION

Our Environment always give us with full of its treasure, thus it's become the Human responsibility to save environment blessings and save it by reducing the emission of harmful CO2.

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