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Let's Make IT Fruitful – Green Computing

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Abstract

We belong to twenty first century and it belong to computer, gizmos and electronic items energy issues which will get it into serious rings in the upcoming days as the public debate on carbon emissions, global warming and climate change getting hotter day by day and that taking into consideration in popular use of technology industry, this has to lead a revolution like turning green in respect where no industry has ever done before.

Keywords

Grave approach, Disposal, E-waste, Cradel, Green Computing Task Force, Best practice-Disposal.

Introduction

The positive (or least negative) relationship between the physical computer and its impact to the environments in which it moves through cradle to grave**.**

Green computing is the environmentally responsible and eco-friendly use of computers and their resources. In broader terms, it is also defined as the study of designing, engineering, manufacturing, using and disposing of computing devices in a way that reduces their environmental impact.

Many IT manufacturers and vendors are continuously investing in designing energy-efficient computing devices, reducing the use of dangerous materials and encouraging the recyclability of digital devices. Green computing practices came into prominence in 1992, when the Environmental Protection Agency (EPA) launched the Energy Star program.Green computing is also known as green information technology. Green computing aims to attain economic viability and improve the way computing devices are used. Green IT practices include the development of environmentally sustainable production practices, energy-efficient computers and improved disposal and recycling procedures.

To promote green computing concepts at all possible levels, the following four approaches are employed:

- Green Use
- Green Disposal
- Green Design
- Green Manufacturing

Recent Survey

War Declared on World's Growing E-Waste Crisis ByAgence France-Presse | Updated: 25 January 2019 13:19 IST

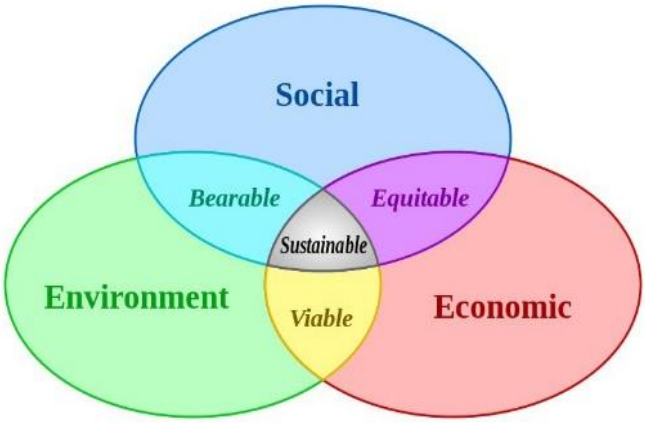
The world produces close to 50 million tonnes of e-waste every year as consumers and

businesses throw out their old smartphones, computers and household appliances - material worth an estimated $62.5 billion (EUR 55 billion or roughly Rs. 4,40,000 crores).Only a small percentage of the refuse, which contains valuable and reusable materials such as metals and rare earth elements vital for electronics, is ever recycled.

The United Nations, the World Economic Forum and the World Business Council for Sustainable Development, among the rich and powerful gathered in Davos this week, launched the first global call for action to counter what is the fastest growing waste stream on the planet.

What is the need for GC?

- To sustain our environment
- To prevent health related issues
- To Conserve Energy



Life Stages of Electronics

Most electronic parts pass through several life cycle stages corresponding to changes in part sales.

1. ***Introduction Stage***

The introduction stage in the part life cycle is usually characterized by high production costs driven by recently incurred design costs and low yield, frequent modifications, low or unpredictable production volumes, and lack of specialized production equipment. Marketing costs, at this stage, may also be high. Early adopter customers who buy a part in its introductory stage tend to value performance over price

2. ***Growth Stage***

The growth stage is characterized by the part's market acceptance. Increased sales during this stage may justify the development and use of specialized equipment for production, which in turn improves economies of scale of production. Mass production, mass distribution, and mass marketing often bring about price reductions. This stage often consists of the largest number of competitors, as opportunityseeking firms are attracted by the part's profit potential and, strategic acquisitions and mergers have not yet taken place.

3. ***Maturity Stage***

The maturity stage of the part life cycle is characterized by high-volume sales. Competitors with lower cost of

production may enter the market, or domestic competitors may shift production facilities to less expensive locations to enable them to lower manufacturing costs. The 16M DRAM is an example of a mature part.

4. *Decline Stage*

The decline stage is characterized by decreasing demand and generally decreasing profit margin. Towards the end of the decline stage, only a few specialized manufacturers remain in the market. TTL logic ICs are examples of parts that have been available very late in this stage due to continued sales in the black and white television market.

5. *Phase-out Stage*

Phase-out occurs when the manufacturer sets a date when production of the part will stop. Generally, the manufacturer issues a discontinuance notice to customers, provides a last-time buy date, and suggests alternative parts or aftermarket manufacturers.

6. *Discontinuance and Obsolescence*

Discontinuance occurs when the manufacturer stops production of the part. The part may still be available in the market if the production line or part stocks were bought by an aftermarket source. A part is obsolete when the technology that defines the part is no longer implemented. Thus, obsolescence occurs at a technology level, while discontinuance occurs at a part number or manufacturer specific level. Diode Transistor Logic (DTL) and Resistor Transistor Logic (RTL) parts are examples of obsoleted part technologies.

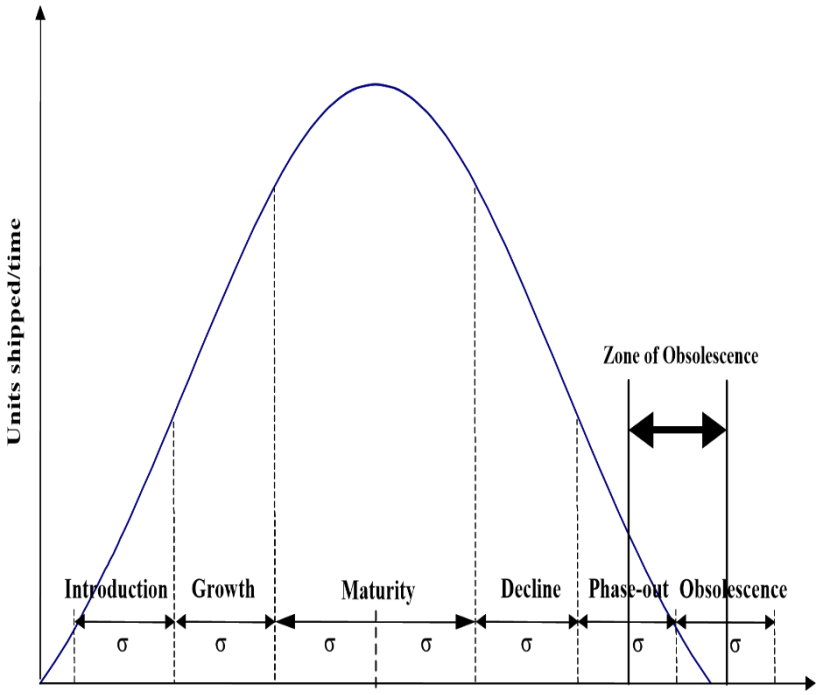
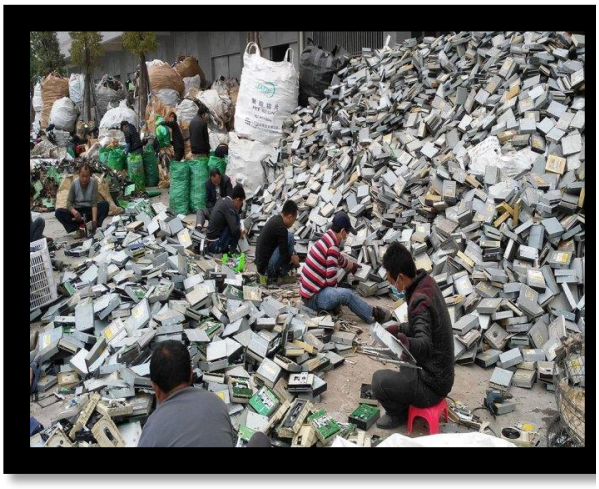


Fig: Definitions for a standardized life cycle curve for a device/technology group.

E-Wastes in China and UK

AT CHINA :



AT UNITED KINGDOM :

To Prevent E-Waste

1. **We must Manufacture**

Greener technology

PBDE free plastic

lead-free soldering

fewer toxic solvents

Plastics labelled with recycling codes

Less material used

2. **We must Use**

Laptop 15W total

New technology often more energy efficient

LCD system: 80W total

CRT system: down to 120W from 270W

Independent certification bodies e.g., TCO, Nordic Swan, EU Eco-label

Energy saver features are now standard

3. **We must Reuse the Waste**

Recycling

Metal Recovery

Semi-Precious Metal Recovery

Green Computing Task Force

Identify green computing best practices

Examine computing procurement guidelines Identify energy conservation strategies and practices

Identify equipment disposal procedures

Recommend a campus awareness

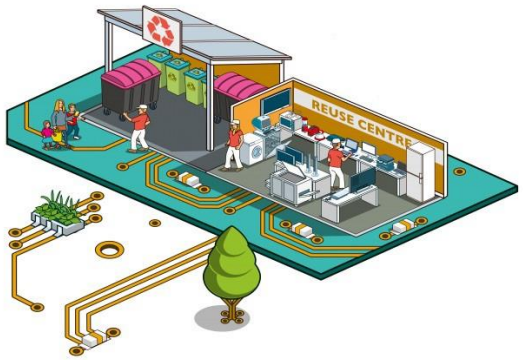


Fig : E – waste reuse centre in UK

The Best Practices are

a. Disposal

- E-waste is divided into two separate streams, CRT monitors and all other electronic equipment
- General e-waste is sent to Production Works where it is dismantled and redistributed to scrap companies and recyclers
- CRT monitors sent to an environment friendly
- Toronto-based company
- Current UG e-waste disposal program, represents a best practice

b. Energy Conversion

- Implementing power management options on machines
- Reducing the overall "on" time of the system as a whole
- Reducing the overall "on" time of the monitor in particular

c. Energy Conservation Strategies

1.Survey current computer power management policies and practices across campus

.Coordinate participation of IT personnel in an energy reduction plan

3.Develop configuration standards, with IT personnel, to reduce energy consumption of computers

Conclusion

As we studied about the fact of green computing without giving obstacles to the rapidly growing use of IT infrastructure the Serious issues in the upcoming days as on carbon emissions, global warming, and climate change getting hotter, can be overcome by making the awareness properly and the right manufacturing technology and by energy conservation strategies and procurement guidelines which has lead to a revolution of computing green in a respect where no industry has ever done.

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