Green Computing : A Panacea

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ABSTRACT   With alarming increase in the utilization of computer technology and other electronic devices in the every walk of human life is putting pressure on the environmental balance. This multidiamensional pressure is causing harm to the system. The concept of Green Computing is the only answer to this big question. It emphasises on various possible aspects like minimal discharge of carbon dioxide, maximization of computer power and about the recycling of e-waste to maintain the natural balance of the mother earth.

KEYWORDS: Green computing, power utilization, e-waste management.

INTRODUCTION

Utilization of computer technology is making human life easier but as this smart computer literate society is becoming older, many lateral issues are arising out of it. It is a well known fact that each coin has two faces, so is with technology. On one side, it is making life easier by helping life in every way, but , on the other, it is creating hazardous waste. Many chemicals and different kind of toxic elements are utilized in manufacturing of various parts which, after their use, are discarded and there is no proper disposal strategy for the same. In some organisations, even if waste disposal schemes are there but the willingness for their implementation is either low or even missing all total. This continuous ignorance has gradually increased the enormicity of this problem. This has impelled the social thinkers to take immediate step in this direction.

Just on the verge of an upcoming chaotic situation, the concept of 'Green Computing' has been coined. This paradigm shift took place shortly after "Energy Star" program around 1992. The term "Green Computing" basically focuses on effective study for disposing, recycling and manufacturing of computer and electronic devices. The prime objective of this line of study is to minimise the use of hardware material and maximize energy utilization by increasingg the life span of such devices. Green Computing focuses on efficient utilization of all the sub systems of computers in such a way that they have minimal or no imapct on the environment.

EFFECT OF COMPUTING ON ENVIRONMENT

By considering the data of 2014, 62 million spam messages were generated which

created 0.3 grams of carbon dioxide per message that addedd upto annual energy usage by spam 33 terawatt hours (twh). This is such a big number in itself as it is equivalent to the electricity used in 2.4 million hours every year. These conclusive researches show that carbon dioxide and other are causing global climatic and environmental damage. These are such aspects of computing which generally remain unnoticed until such clearly calculated data dosent flashes in front of us. Another biggest point of concern are whose power supply are on but they are in non-functional mode. Such devices are termed as sleeping devices. A data says that the CO_2 by such sleeping devices equals to 1/7th of the total CO^2 emmited by an automobile. A desktop requires 85 watts just for being idle, even considsing the condition that its monitor is off. If it is left on for 24 hours then, around 1500 pounds of CO^2 will be produced by it in one year.

The production and manufacturing process of computer and other electronic devices also demand utilization of various hazardous material like cadmium (Cd), mercury, lead, etc. Researches have proved that cadmium has damaging effects on kidney whereas mercury is involved in neurological damages. Even It has been found that lead disrupts brain neurotransmitters causing various kinds of neurological disoders. So by not adopting proper means for disposal of devices using these elements, we are supporting their intrusion into our habitat.

ELEMENTS OF GREEN COMPUTING

Four basic approaches are adopted in this concept –

- Green use
- Green disposal
- Green design
- Green manufacturing

The term "Green Use" details with development and utilization of various methods and techniques to minimize the electricity consumption by the computer and its peripheral devices. "Green Disposal" means extended utilization and reproposing of existing equipment and appropriate disposing of, or recycling of unwanted electronic equipment. The third element of Green Computing is "Green Design" which details about designing of energy-efficient computers, servers, printers, projectors or other digital devices. The fourth element is "Green Manufacturing" which talk about developing the method to minimize waste production during manufacturing of computer and other sub systems.

OUTCOMES OF GREEN COMPUTING

Since 1992, when this concept of Green Computing had come into exixtence, it has positively motivated people to think about the damage we are causing to our mother earth. Awareness among people and realization of mindless piling of e-waste in our environment has started an alarm in the society. This e-waste is a time-bomb which is ticking and is just about to explode. Continuous discussion and increased concern by the people from the industries has brought some positive effects like –

- Sleep mode function of the computer monitors to save energy

- ☐ Reduction in the use of hazardous material in the manufacturing process
- ☐ Reliability of power
- ☐ Reduced climatic change
- ☐ Development of e-waste management schemes
- ☐ Development of government norms for enforcing proper disposal of waste generated by the concerned companies.

Some top order companies who have taken remarkable steps to adopt the concepts proposed by "Green Computing" are like –

- ☐ Lenovo has developed new energy-efficient LCD monitors that reduce the number of lamps from four to two
- ☐ Xerox has deveoped green printers that use solid ink which produce less waste because IT administrators no longer have to go for replacement of toner cartridge
- ☐ Hewlett-Packard's Desk Jet D2545 printers relies heavily on recycled materials
- ☐ Recycled plastics account for 83% of printers total plastic weight
- ☐ Acer is reducing its use of plastic foam by shipping in cardboard packaging

CONCLUSION

Green Computing will help the computer world in behaving responsibly towards maintaining the envirnmental balance. It provides a parallel view about the negative byproducts of technical advancements and means to nullify them. The practices and provisions will help the business leaders, social thinkers, the technical personal and the goverment in minimizing the hazardous effects. As we cannot stop the use of technology, so, for protecting our environment, awareness and timely approaches in the right direction is the only possible solution.

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