ABSTRACT

Green Computing refers to the process of maintaining eco-friendly computing infrastructure of any government or a private organizations. The study about and the practice of design, manufacture & usage is the first step in the process of initializing Green IT Act. It also includes disposing of computers, servers, printers, storage devices, and associated sub systems in an environmental friendly manner. The objectives of green computing act is to reduce the hazardous materials, increase the percentage of recyclable waste related to IT domain. The idea behind this is to maximize energy efficiency of a product life time. The benefits of Green IT Act is to recycle old equipment, reduce power consumption, adaption of virtualization concept over all.


INTRODUCTION

Green IT is a collection of strategic and tactical initiatives that directly reduces the carbon footprint of an organization’s computing operation. However, Green IT is not just focused on reducing the impact of the Information and communications Technology (ICT) industry. It is also focused on using the services of Information and communications Technology (ICT) to help reduce the organization’s overall carbon footprint. For example, IT connectivity can cause people to travel less because they meet, make purchases, or carry out banking transactions via their computers and other communication gadgets.

The characteristics of Green IT and its relative impact on the environment is identified. Also the Points of Failure where the organizations fail to accomplish the actor the practices of Green IT are also identified. Based on the current status of the organizations and their nature of working, Green IT is defined. Although the goal of Green IT concept are to reduce the hazardous materials used by the organization, this topic/research also aims at identifying those organizations which still need to be educated about the same. Green within Computing is a term used to describe an innovative way on how technology and ecology converge together and focuses on ways in reducing overall environmental impacts.

Significance:

✓ Economical Energy Usage
✓ Robust Composting
✓ Recycling at regular intervals
✓ Materials Reclamation Programs
✓ Green Space, Parks, Public Allotments
✓ Usage of low power consumption IT gadgets.
✓ Maintenance

Causes of Attention towards GREEN IT:

Rising Energy consumption and Cost

Increased publicity regarding global warming

Increase in the levels of the green house levels energy efficiency, toxic materials, Green House Gases

Who & where the practice of Green IT should be implemented:

Data Centers: Data Centers should definitely keep an on the way they maintain their systems and the IT related hardware and gadgets.

End Users: End Users should make sure that the IT related wastes are disposed in the right way at right practices or methods to be followed before disposing the waste. They should make sure it is Bio-Degradable.
Real Time Reported Issues:
- Servers PCs remain fully powered ON 24/365.
- Toxic Gases emitted during cooling.
- Amount of power needed to cool the data centers makes it one of the cost efficient factors in IT Department.

Best Practices to be followed as a part of GREEN IT ACT:
- Eliminate Energy Leaks
- Use innovative and more efficient cooling methods
- Replacement of high density servers with virtual servers
- Use Alternative Storage Devices
- Renovation of the infrastructure of the data centers
- Explore alternative energy sources

Startup Steps for implementation of GREEN Computing:
- Server level power consumption to be monitored 24/365
- Usage of the online tools instead of physical hardware that can be used for prediction of power consumption levels
- Server Storage & Virtualization
- Cloud Computing
- Internet of Things concept Implementalization
- Big Data and related technologies

Benefits of GREEN IT:
- Data Longevity because of storage virtualization
- Eco Friendly Computer Hardware which contribute to efficient work operations
- Cost Minimization at Data Centers
- Hardware Cost Investment reduced drastically
- Unethical IT Disposable Practices can be curbed

GREEN IT and GREEN IS Impact:
Therefore Green Computing is not only a new trend but also it is a technology by itself. The move to become more environmental friendly is more than just a means to a better corporate image. GREEN IT and GREEN ISis also a means to cost reduction. New and improved ways of using this technology seem to appear on a daily basis. The important fact to remember is that while all of these technologies are beneficial in some or the other way, the most beneficial thing to the existing corporations are those which directly affect their processes and IT infrastructures. Reducing the number of servers using storage virtualization is a great way to consolidate but in order to get the maximum benefits both government and the non-government organizations must reorganize their datacenter infrastructure and in addition, rethink processes and procedures that utilize these resources from the end user.

In order to utilize the new IT technology, any individual needs to be aware of the products they are buying. Paying attention to things like the energy star rating along with the general components of a computer can help to greatly reduce the amount of electricity being used on a day to day basis. Replacing old equipment with new and more efficient equipment is only effective if the efficiency difference is high and the old equipment can be recycled.

Switching over to green technology doesn’t have to be a sudden and unnerving step for authorities. ‘Being Green’ should be understood as a long-term commitment that solves the purpose of creating a greener and sustainable infrastructure. Many organizations have already started displaying figures of the amount of money they have saved in a calendar year by adopting practical, greener methods. Organizations which are new to ‘Being Green’ should seek the help of such successful models to establish a list of measures that actually enhance their working standards.

There has been a lot of negative impact of the IT related operations and the disposal of hazardous IT related waste has caused severe damage to the environment. It comprises of designing, manufacturing, operating, disposing the computers which are outdated and the IT related hardware products in an environmental friendly manner. The effect of IT firms disposing the IT related Hardware has not only led to the contamination to the environmental conditions and they have also gradually turned out into non-recyclable waste. Most of the IT related processing devices are usually manufactured of the plastic material and as it is a known fact the plastic materials cannot be recycled. For Example, if an individual of a corporate organization wants dispose more of a IT related waste and outdated products on a regular basis it is advised to follow the recommended practices of GREEN IT.
The evolution of eco-friendly sustainable information management systems and the terms like Green IT and Green IS are being discussed in this research paper. GREEN IT is a topic in which a thorough study about disposing, manufacturing and recycling of computers and electronic gadgets are done and their practices are mentioned in an eco-friendly manner. Green IT also talks about the regular intervals at which the IT related waste are supposed to be recycled and disposed.

**IT Companies implementing green computing:**

**SAP** is a world leader in enterprise software and software related services. The company uses 86,000,000 kWh of green energy annually and is committed to sustainable practices in its operations. “As an exemplar of sustainable companies we have decided to purchase over 350 gigawatt-hours of renewable energy worldwide to power all of our data centers with renewable energy sources,” the company writes. “SAP’s goal is to get our carbon footprint back to the level it was at in 2000.” For a company whose operations are as broad as SAP’s, it’s a lofty goal—but absolutely possible with the talent available to them.

**APPLE** is one of the most efficient consumer of green energy. As it is, it utilizes 626,315,500 kWh of green power annually. Apple has a neutral carbon footprint very soon. It’s recently took steps such as the purchase of several solar farms to make its data centers which are entirely sustainable. It’s also working to make all of its retail stores entirely sustainable, and is coming closer to that reality daily.

**CONCLUSION**

From the above study we can conclude that GREEN IT and GREEN IS should be definitely practiced by all the organizations which are making use of IT infrastructure in order to save our environment. The Green IT recommended practices will not enhance the resources of the ecosystem but also raise the work culture standards of the IT companies which are working towards developing their GREEN IT and GREEN IS related resources.

Regular practices make the companies stable in terms of safe computing and curbing out inevitable natural calamities caused because of the non recyclable waste in the environment.