INTERNATIONAL JOURNAL OF RESEARCH IN COMPUTER APPLICATION & MANAGEMENT

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     NEED/IMPORTANCE OF THE STUDY

     STATEMENT OF THE PROBLEM

     OBJECTIVES

     HYPOTHESES

     RESEARCH METHODOLOGY

     RESULTS & DISCUSSION

     FINDINGS

     RECOMMENDATIONS/SUGGESTIONS

     CONCLUSIONS

     SCOPE FOR FURTHER RESEARCH

     ACKNOWLEDGMENTS

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GREEN ICT SERVICES AND ISSUES: NANO, GRID AND CLOUD COMPUTING

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ABSTRACT

The global demand of world energy consumption has increased every year remarkably. These developments are not addressing the global challenges in the area of IT development. Green Innovation is only way to address this problem.Understanding and identifying the strategies are needed to achieve Green IT, Which is most important one in the current global world IT development scenario.This paper deals through information collected through discussions, reviews relevant to the development and use of Nano, Grid and Cloud computing for Green Innovation.This is a study relating to the introduction of Green IT and issues connected with recent trends and development of IT such asNano,Grid, Cloud computing.

KEYWORDS
Green IT, Green Computing, Green Grid and Cloud Computing.

INTRODUCTION

Green Computing is a study related with environment and maximizes energy efficiency without affecting nature of the environment. By way of practices only environment sustainable can be possible to save our earth. Sustainable development can have three pillars which are economic, society, and environment.These are closely related one to another to achieve high in the world.The Organization for Economic Co-operation and Development (OECD) is an international economic organization which can stimulate economic progress and world trade. The environmental protection and economic growth can have connection with OECD. The OECD measurement framework indicates four key areas such as environment and resource productivity, economic and environment assets, environment quality of life economic opportunities and policy responses. In this paper deals various concepts related with Green IT and ICT. The term "Greening of ICT" refers to the direct effects of ICTs, and the term "greening with ICT" to the enabling effects of ICTs. Greening of ICT in a narrower sense refers to ICTs with low environmental burdens but using ICT as an enabler reduces environmental impact across the economy outside of the ICT sector. Now a day, 'Being Green' has become popular word for the ICT Development in achieving energy- efficiency in the ICT sector. ICT has a key role in enabling energy efficiency in most areas, including the cutback of its own sector's carbon productions. Organizations are coming under increasing study for how they are using energy efficient methods in the day-to-day operation of the trade, and whether energy is being wasted through various ICT-related processes.

GREEN ICT

According to Hart (1997), Green ICT often refers to meeting the needs of present generationsno compromise the quality of future generations to meet their needs and involves pollutionprevention at the end of a product's use, product stewardship to minimize the environmentalfootprint during use, and use of clean technologies to reduce the use of polluting materialsand develop environmentally friendly competencies. Green ICT naturally originates with IT itself. It is sometimes referred to simply as Green IT and it means different things to different people.

According to Molla (2009), it is the systematic application of ecological-sustainability criteria to the design, production, sourcing, use and disposal of ICT technical infrastructure (ii) as well as within the human and managerial components of ICT infrastructure in order to reduce ICT, business process and supply chain related emissions, waste and water use; improving efficiency and generate green economic rent.

FIGURE 1.0: GREEN ICT

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                        │      GREEN ICT SERVICES AND ISSUES        │
                        └─────────────────────────────────────────┘

  ┌─────────────────┐                                          ┌─────────────────────────┐
  │    PROODUCT     │        ┌──────────┐    ┌──────────┐      │   MATERIAL RECYCLING    │
  └─────────────────┘        │ STORAGE  │    │ E–WASTE  │      └─────────────────────────┘
           ┌─────────────────────────┐        ┌─────────────────────────────┐
           │   RESOURCE ALLOCATION   │        │    GREEN  NANOTECHNOLOGY     │
           └─────────────────────────┘        └─────────────────────────────┘

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              │  VIRTUALIZATION,GRID AND CLOUD COMPUTING         │
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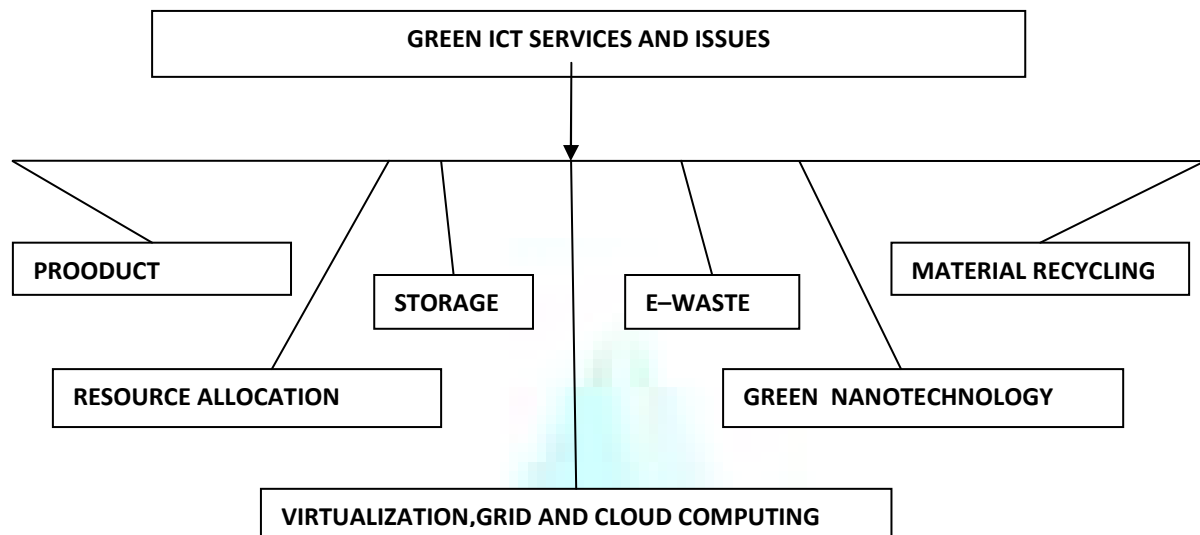
PROODUCT LONGEVITY

The components of a system are hardware, software, networks. For a new PC manufacturing which not only concentrate operational, economical, technical feasibilities more than that we need look the ecological systems that can be avoid E Waste.The Electronic Product Environmental Assessment Tool isaevaluation method for product life cycle effect on the environment which will access the environment affected variables and their impact.

RESOURCE ALLOCATION

The resource allocation is assignment or utilize of available resources for usability. In general resource allocation can be interrelated with people, materials, equipments, knowledge and time. In IT resource allocation mainly focuses allocation of hardware resources such as memory devices, input, and output resources. The physical resources can be shared by multiple systems. Using appropriate algorithm to allocate resource with less expensive. Priority based memory allocation, energy aware resource allocation, schedulingare areas which are facing more challenges in the IT because Infrastructure as Service as the fastest growing system.

STORAGE

Storage is device or media used to recording digital data. Primary and secondary storage devices. Mainly three types of data storage methods areavailable to store data. These are portable methods, semi portable, and volatile. Mostly electronic devices needed to store and retrieve using electrical power. Changing the strategic of usability and operability can reduce the power energy and save the environment to ensure the Green IT. Volatile organic compounds might be used to preserve the environment. In this view cloud computing system can help to avoid unnecessary equipments to managing or handling storage system.

E – WASTE AND MATERIAL RECYCLING

Recycling is a process to change waste materials to useful product. Recent days Effective ways are used to reuse ,recycle or recovery power energy even from food waste. E- commerce exchange of goods and services for money done through internet which can have four model such as B2C,B2B,C2B,C2C so Electronic system is dominating system in the computer world. In the E- waste, Electronic industry or manufacturer of the E materials is one of most responsible person to avoid health issue of users who are using E system like mobile hand set. When recycle the computer system is larger issue in the view of privacy of data in this case data recovery may damage the main goals of the task.

VIRTUALIZATION , GRID AND CLOUD COMPUTING

Virtualization is a methodology for dividing the computer resources to more than one execution environment and various resources can be accessed by one system. For this number of concepts must be applied to virtualizes the system like partitioning, time sharing, machine simulation. The virtualization performs multiple operations using a single physical media. Grid computing completely support distributed systems which can achieve multiple sharing and accessing over the network with using common and single physical hardware system, obviously which will save the environment to leads the Green IT system. The latest and fastest growth of cloud computing offers efficiently in cost saving for businesses and users. The cloud computing hardware is maintained by separate multiple third party servers with the help of different data centers. It is a powerful platform that provides services on demand, which are always on, anywhere, anytime and anyplace. Cloud computing is more concerning in context of economical, technical and operation feasibility. The cloud ecosystem model helps many ways to employing Green IT System.

GREEN NANOTECHNOLOGY

Products and processes that are safe, energy efficient,reduce E Waste which would be based on renewable materials. The electric cars are using nanotechnology enabled batteries which can improve sustainable green processing, energy shortages and scarcity of clean water. There are significant potential markets for this but very few products are commercialized today. Defining a new Green IT enabled Product and selling the product, investing money are big challenges in the near features.

CONCLUSION

There are no of applications and possibility available to achieve Green IT, it is effort and interest of the company to use these options to save environment. The companies must ready to change their IT Strategic to incorporate action plan or implement Green IT system.The company concentrate to follow Green ICT , it will give many more benefits and advantages such as reduces costs, creates opportunities , maximizes Environmental Benefits.Each citizens of this world are more responsible and aware of the natural system, ecological system, climate changes and, global warming that world wake up to the needs of Green IT and their sustenance's.

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With sincere regards

Thanking you profoundly

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