SUMMER PROJECT REPORT

A STUDY ON GREEN COMPUTING IN St. FRANCIS COLLEGE

Prepared for the Mumbai University in the partial fulfillment of the requirement for the award of the degree in

MASTER OF I

Roll No. & Year: SFMMS1820-0009 (2018-2020)

Under the guidance of

Prof. Vasudha Rao

SFIMAR

St Francis Institute of Management and Research,

Mt. Poinsur, S.V.P Road, Borivali (W) Mumbai.

Www. Sfimar.org

BATCH 2018-2020

DECLARATION

I, Sean Rodrigues, student of ST. FRANCIS INSTITUTE OF MANAGEMENT & RESEARCH (BORIVALI), hereby declare that I have completed this project on "GREEN COMPUTING IN St. FRANCIS INSTITUTE" for the academic year 2018-20 as Summer Internship Project in fulfillment of Master of Management Studies (2018-20) in Marketing as per the requirement of University of Mumbai. This information submitted is true and original to the best of my knowledge.

Signature of the Student :

Name of the student: Sean Rodrigues

Course and Specialization: Information technology

Roll no: SFMMS1820-0095

Signature of the Guide:

Name: Prof. Vasudha Rao

ACKNOWLEDGEMENT

I would like to appreciate and express my gratitude towards all the people who contributed and helped me in making my project. I would like to give a special thanks to my faculty guide prof. Vasudha Rao for giving me this opportunity to work on such a such a relevant topic in today's world. I have gained a lot of useful knowledge which will change the way I operate computers. It has also made me aware of the growing concern of environmental degradation and global warming.

I am grateful to my faculty guide **Prof. Vasudha Rao** from SFIMAR who helped me in doing my project with immense interest and for his valuable guidance, suggestions and encouragement which helped me in all the time of research and writing of this project.

I would also like to give thanks to Prof. G. Ramesh for taking time and helping me out in some parts of the project.

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EXECUTIVE SUMMARY

This century is the century of IT revolution, advanced computers, and other electronic items. Computer technology plays a vital role in most of the educational areas today. They are widely used in schools and colleges today to support many educational activities. Many new technologies require the use of computer programs by students. Due to rapid technological advancements, excessive dependence and tremendous use of computers and electronic items, carbon emission, global warming, climate change and saving our environment and ecology have become hot issues. Excess computer use indirectly causes environmental damage and Global warming. Green computing is an effective study in which disposing, recycling and engineering of computers and electronic devices is taken into account. The goal of green computing is to lower down the use of hazardous materials, maximize energy efficiency and increase the awareness levels of people towards the need to recycle out-dated computer products and components and factory waste. In this paper we discuss the steps we can carry out to implement green computing in a college workplace and also to find out if students and professors are aware of concept of green computing by conducting a survey and some personal interviews .This will help to establish measures to be taken by the college management, students and professors to contribute towards green computing.

COMPANY PROFILE

Saint Francis Institute of Management and Research is a management college located in Borivli It covers courses like MMS, PGDM and various Part Time courses. It was established in 2002 by "The Society of the Congregation of Franciscan Brothers". It is recognized by AICTE, New Delhi and has been recognized by the University of Mumbai. SFIMAR has been given a Grade 'A' by National Assessment and Accreditation Council (NAAC). It is also ISO 9001:2015 Certified by DNV .The college is equipped with air conditioned classrooms, computer Labs, conference Halls, library and other amenities. A core team of experienced and qualified faculty member deliver various courses to the students. Additionally, experienced professionals from various industries are invited as Eminent Speakers/Guest Faculty to provide practical orientation to the application of management principles in various fields. SFIMAR also provides its students additional certification courses such as Project Management, National Institute for Securities Markets (NISM) Mandatory Programmes, CIMA, Digital Marketing, etc. which improves their

knowledge and employment prospects. SFIMAR has a Placement Department which assist students in achieving appropriate placements and has a track record of almost 100% placement for the past several years. Guest lectures and workshops are conducted every Saturdays by experienced people from various specializations.

The IT Centre is equipped with state-of-the-art computing facilities with Client Server architecture with educational software and ERP System including latest computers, laptops, printers, scanners and projectors thereby encouraging its pedagogy of non-classroom learning.

Institutes Local Area Network consists of more than 300+ nodes points on 30 network switches across the entire campus, which connects all Hostel buildings, main building including classrooms, MDP rooms, Faculty rooms, Meeting rooms, cafeteria, Administration dept., IT Support Centre and Library. This network has fiber optics backbone of 1 Gbps connecting each segment of the buildings in the campus.Network access is provided through Domain level authentication on secured firewall. All the members of the Institute community can connect, communicate & share with each other on both intranet & Internet, from anywhere in the campus. Every faculty member has a personal computer or laptop at his or her disposal. Heavy duty high speed shared network printers with centrally managed web based print billing software is installed in all floors across institute's main buildings.

The computer center is professionally managed and equipped with 2 Racks Server Farm with 8 Servers ported with Windows 2012, Windows 2008, Win 2003. The E-mail facility is managed

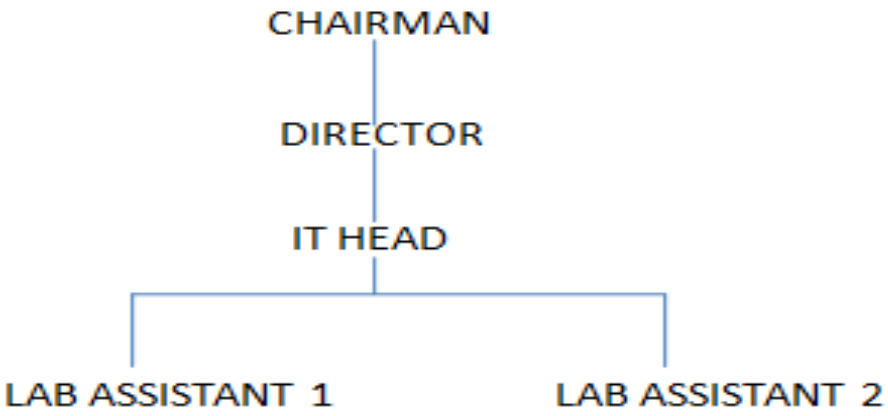
through Google which provides web based email client, with chat facility, Google docs, Google apps, Google sites and with many other features as well.

SFIMAR has implemented Campus wide WiFi. Students are given permission to use the Wifi when needed.

DEPARTMENTAL CHART

Decisions regarding buying new computers , upgrading to latest tech ,installing a software, buying and installing new equipment needs to be discussed with the director and chairman and permission must be granted before the IT head gets it done. Two lab assistants are available to help the IT head to set up equipment, software , hardware etc.

DEPARTMENT CHART



REVIEW OF LITERATURE

Green IT (green information technology) is the practice of environmentally sustainable computing. Green IT aims to minimize the negative impact of IT operations on the environment by designing, manufacturing, operating and disposing of computers and computer-related products in an environmentally-friendly manner. Green IT practices include reducing the use of hazardous materials, maximizing energy efficiency during the product's lifetime and promoting the biodegradability of unused and outdated products. The concept of green IT came to life in 1992 when the U.S. Environmental Protection Agency launched the Energy Star program, a labeling program that helps organizations save money and reduce greenhouse gas emissions by identifying products that offer superior energy efficiency.

Green computing comprises of 4 parts:

1. Green use — Reducing the consumption of energy by computers, computer components and other electronic equipment and making sure they do not cause harm to the environment in any way

2. Green disposal — reusing old computers and properly recycling unwanted computers components and other electronic equipment like printers and scanners as they contain hazardous materials

3. Green design — designing energy-efficient and environmentally friendly components, computers, servers, cooling equipment, and data centers.

4. Green manufacturing — manufacturing electronic components, computers, and other associated subsystems with minimal impact on the environment.

Since this research is based on implementing green computing methods in Saint Francis Institute of Management , we shall concentrate only on Green use and Green disposal , this paper aims at suggesting buying electronic equipment in future ,which has minimum hazardous materials and emits minimal energy and heat .

NEED FOR STUDY

We are conducting this study primarily due to 2 growing concerns -

1. **Dangers of excess energy consumption**: Computer affects our environment in several different ways. Each stage of a computer's life, from its production, throughout its use, and its disposal, presents environmental problems. Excess use of computers indirectly leads to environmental pollution and global warming. As we know computers and its component require electrical energy to run. Energy is generated by burning fossil fuels . Burning fossil affects the air quality of the environment and causes health problems for humans. Burning of fossil fuels is on of the main reasons for the increase in CO2 content in air which is one of the main contributors of global warming. Hence there is a need to conserve energy while using computers and other equipment .The younger generations need to be made aware of the growing concern of global warming and the negative effects of computers towards environment. Total electrical energy consumption by servers, computers, monitors, data communications equipment, and cooling systems for data centers is steadily increasing. This increase in energy consumption is directly related to the increased greenhouse gas emissions. Each PC in use generates about a ton of carbon dioxide every year.
2. **Harmful effects of e-waste:** There is an another threat a computer poses. Computer is made up of various hazardous, toxic materials such as lead, mercury and hexavalent chromium. This computer waste is a major source of widespread damage to the environment at large. Toxic materials are present in computer wastes such as Cathode Ray Tubes (CRTs), Printed board assemblies, Capacitors, Mercury switches and relays,

Batteries, Liquid Crystal Displays (LCDs), and Electrolytes.. All electronic equipments contain printed circuit boards which are hazardous because of their content of lead.

Land filling of e-wastes can lead to the discharge of lead into the ground water. If the CRT is crushed and burned, it emits toxic fumes into the air. Total electrical energy consumption by servers, computers, monitors, data communications equipment, and cooling systems for data centers is steadily increasing.

Hence there is a need to find out the awareness level of the students and faculty about this growing concern and to devise measures that can be taken at college level not only by the college authorities but also by students and faculty members to contribute towards green computing..

OBJECTIVES

A part of this paper focuses on gaining knowledge about the awareness of green computing by Saint Francis college students and staff.

OBJECTIVES OF STUDY:

1. To study the awareness levels of students and staff in SFIMAR regarding the dangers computers poses to the environment.
2. To study the current measures taken by students and staff towards green computing.

METHODOLOGY

Primary data - A survey was conducted with the questionnaire being distributed among students, professors and staff members of Saint Francis College only. A few personal interviews were taken too.

Secondary data – 50 % of information was taken with the help of the Internet and existing research papers

Sample size -About 50 -75 respondents were selected.

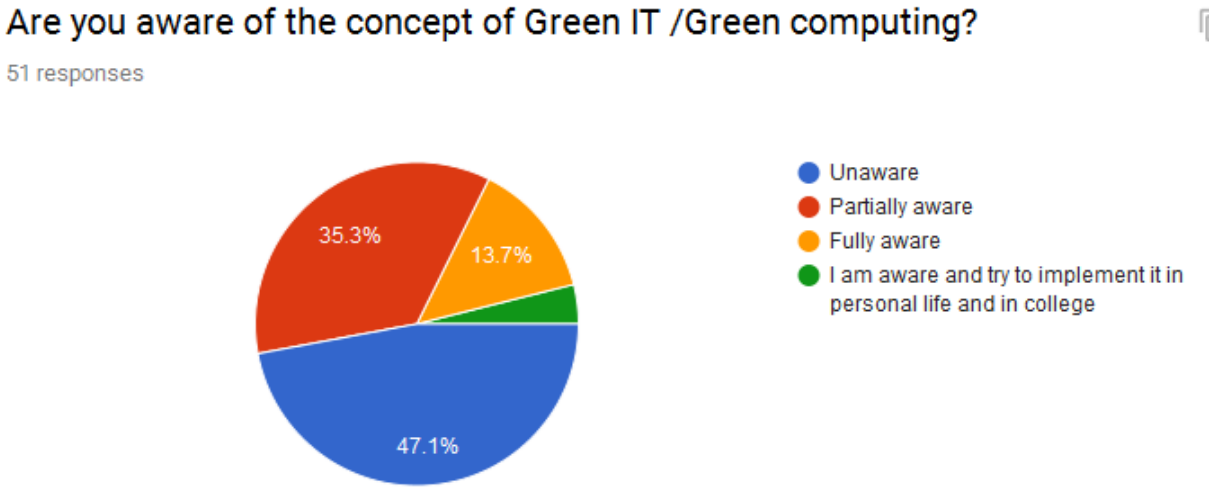
Sample population – St. Francis college of management and research

Type of sampling – convenience sampling

Research design -Descriptive research design

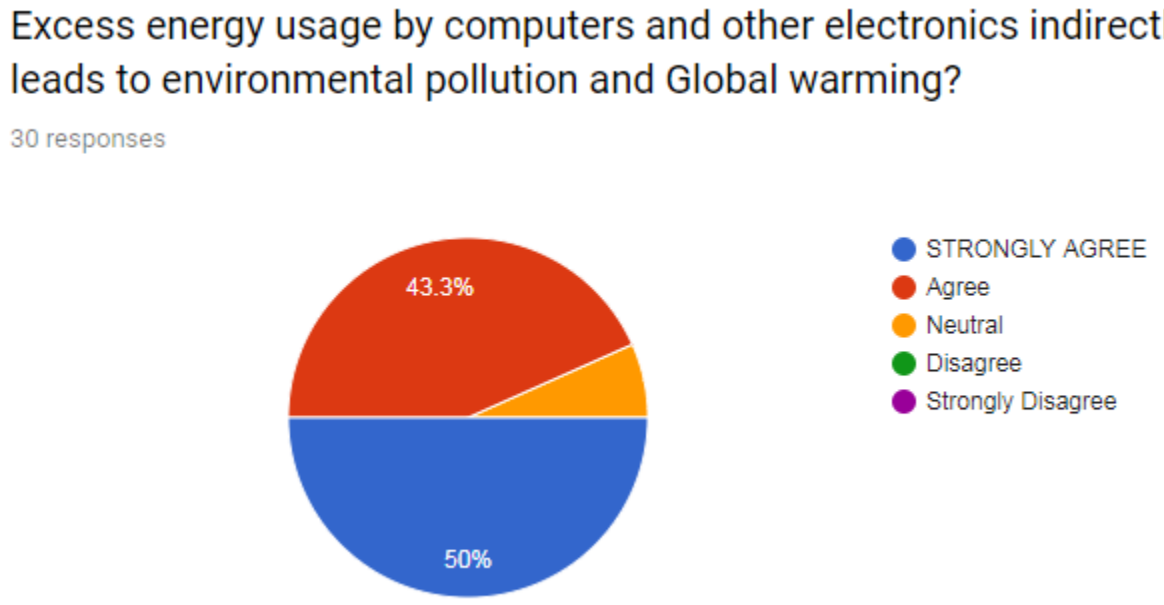
DATA ANALYSIS

About 70% of respondents were students , 18% staff and 12% professors.



47% of respondents are unaware of the concept of green IT . 54% of students are unaware of the concept of green IT ,55% of staff are unaware of the concept , and 100% of professors have atleast some knowledge of the concept of Green IT.

93 % of respondents agree with the fact that excess energy usage indirectly causes global warming.



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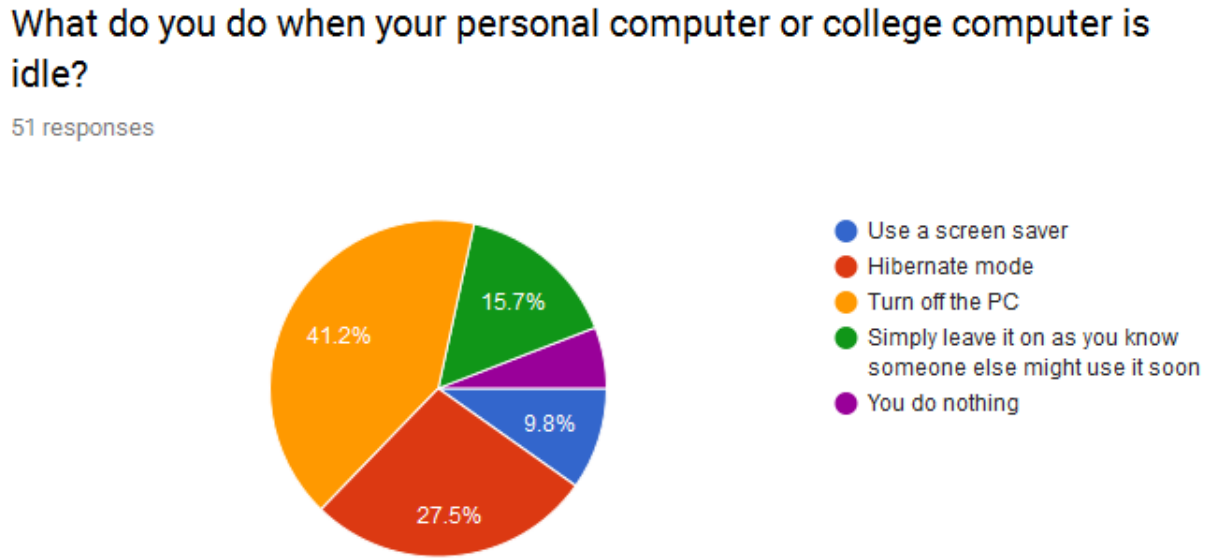
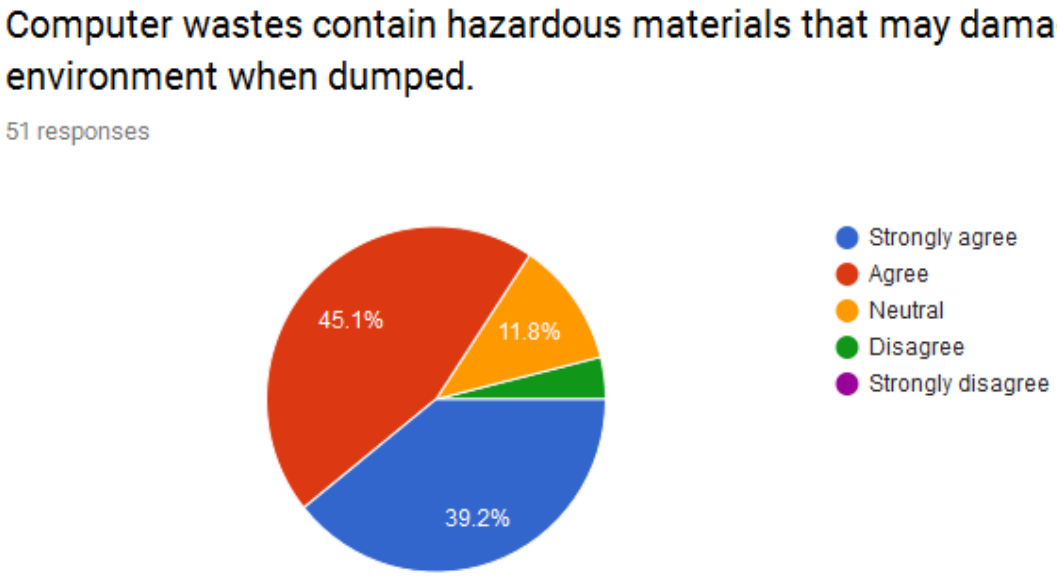
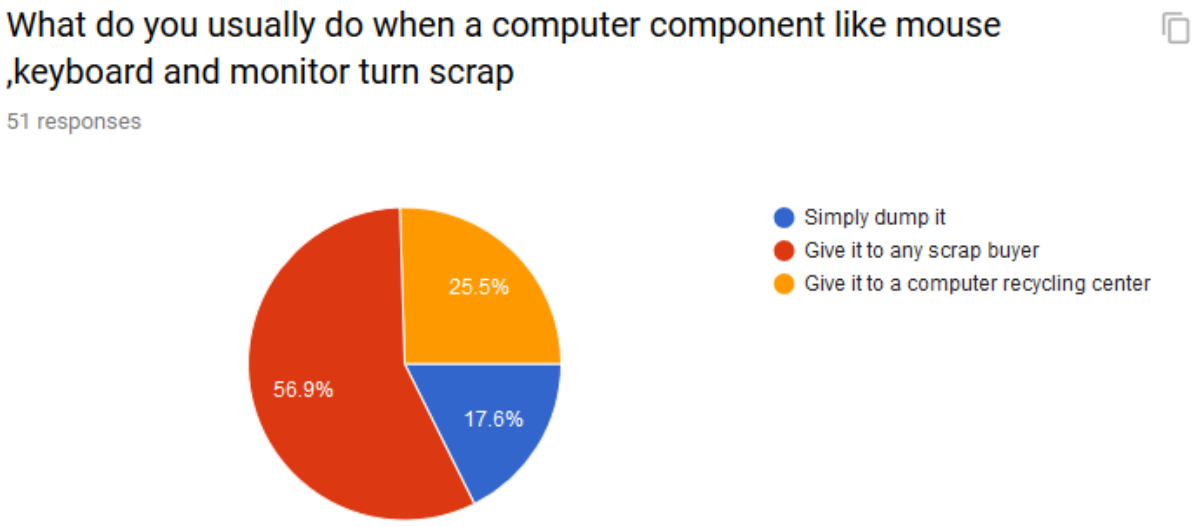


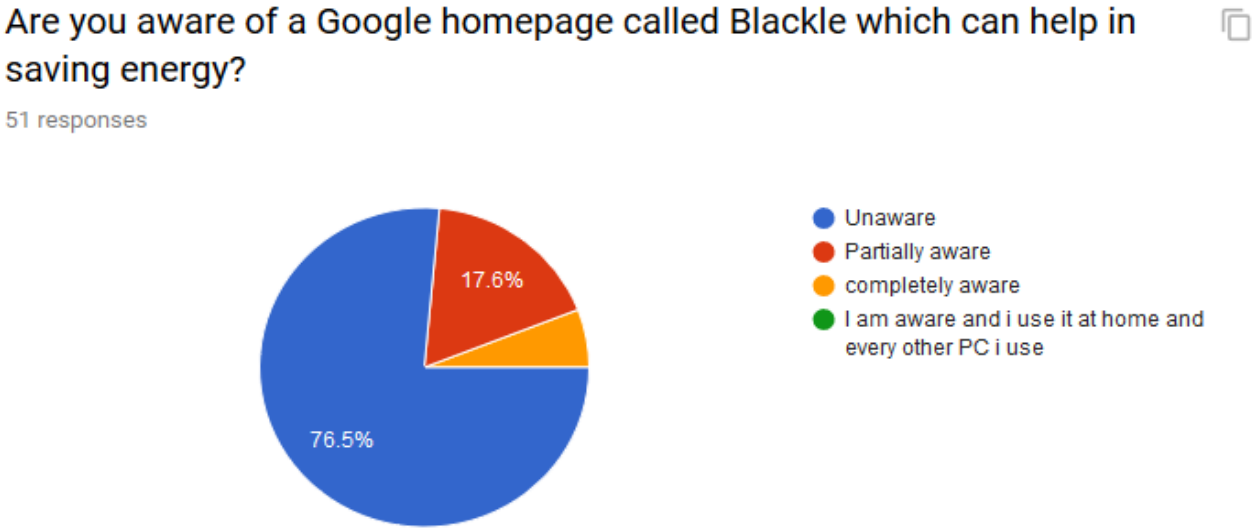
Almost everyone is aware of the importance of energy conservation and its positive effects towards environment and self. But not everyone contributes towards energy conservation measures .As we can see approx 21% of respondents carelessly leave the PC on .On the positive side 41% of respondents turn off the PC and 27 % use Hibernate mode which are good measures taken towards energy conservation.10 % of respondents use screen savers unaware of the fact that screen savers use more energy.



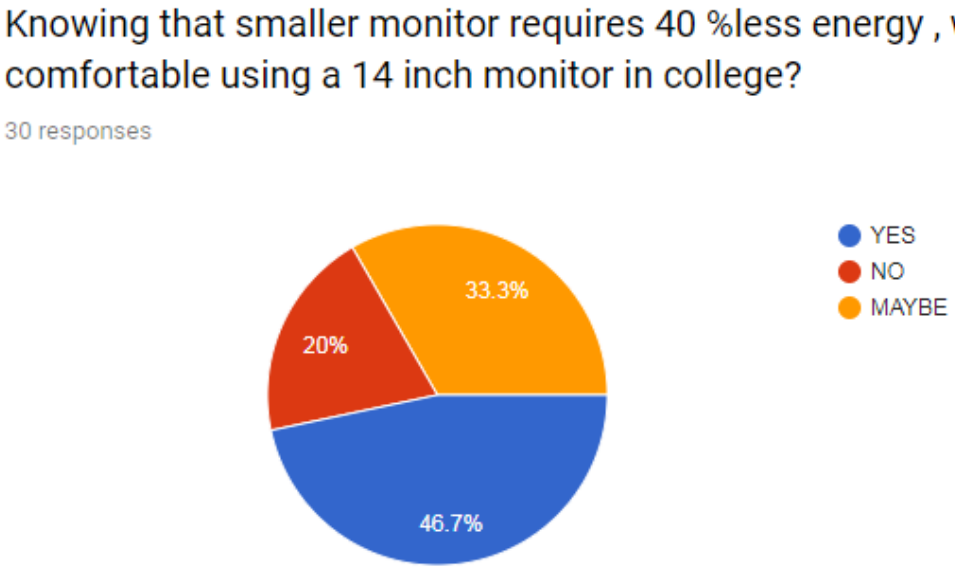
85% of respondents are aware of the dangers of computer waste and their negative effect on environment .



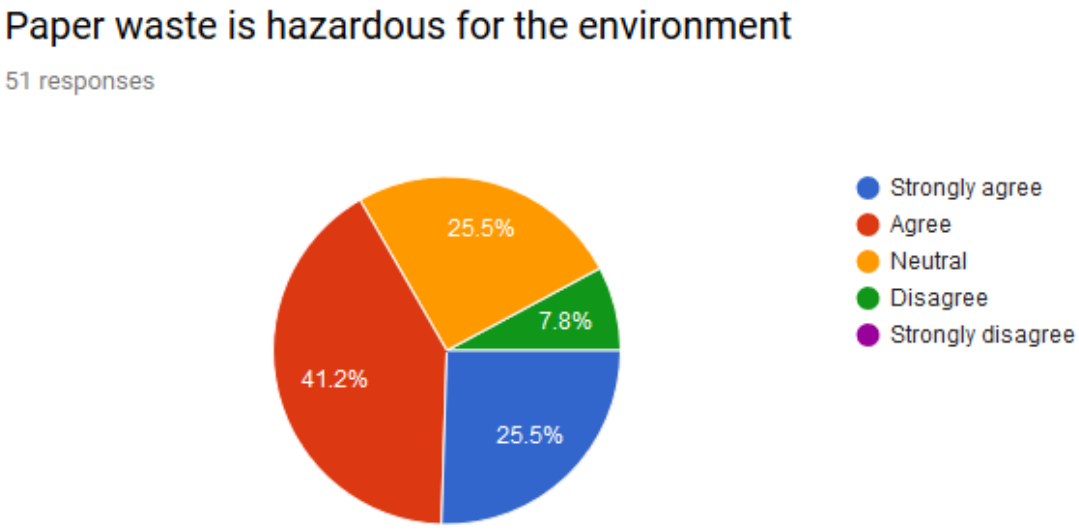
18% of respondents are unaware of the harmful materials present in computer components and consequences of dumping computer components in the environment . Most of them give it to the scrap buyer ,where as 25 % of them give to specific computer recycling centers which is the best course of action.



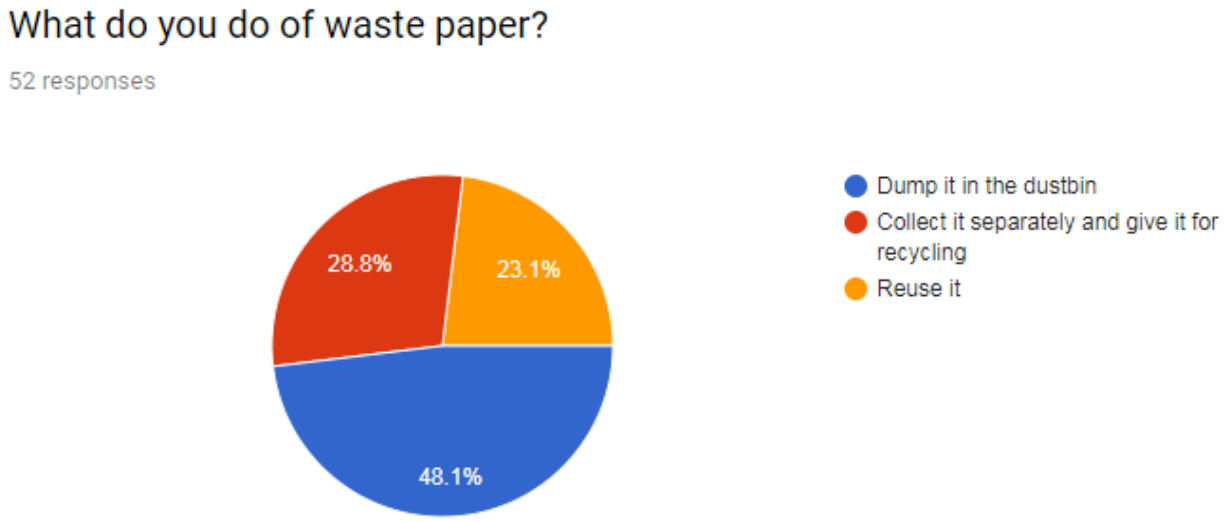
Only 6 % of respondents are aware of a google homepage called Blackle which helps conserve energy .However no one has ever used it .



46% of respondents have no problem with using a smaller display screen in future .20% of respondents are not comfortable with using a smaller display and 33% are not sure about it.



65% of respondents are aware of the fact that paper waste is hazardous for the environment if dumped carelessly.



Even though 65 % of respondents are aware of the fact that paper waste is harmful for the environment , most of them dump it in the dustbin rather than collecting it separately and giving them for recycling. 24% of respondents reuse the paper waste which shows a positive attitude towards green Computing.

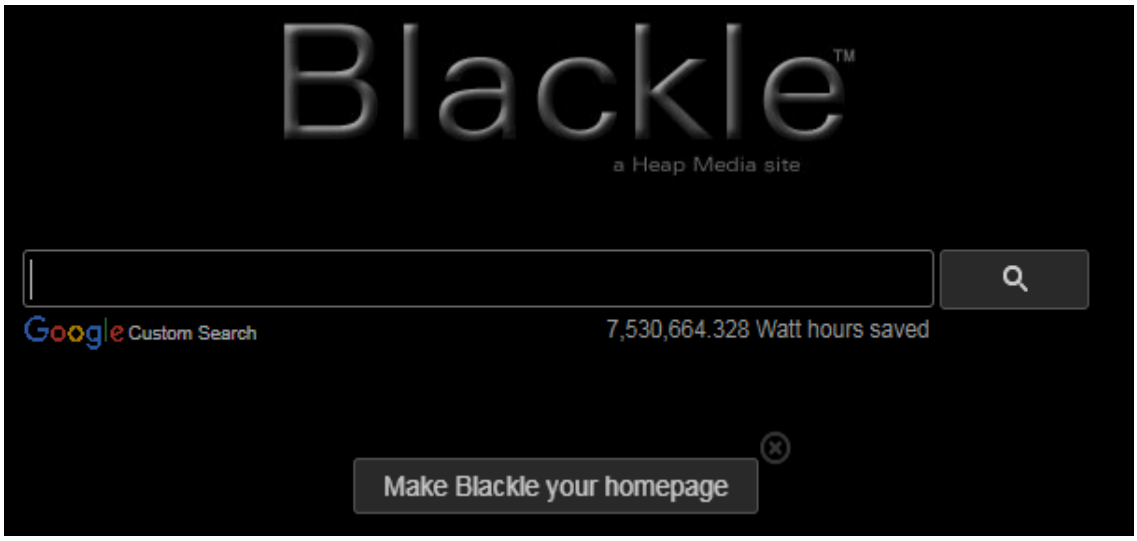
FINDINGS

- Awareness levels of students regarding the impact of excess energy consumption by computers on environment is high
- Awareness levels of students regarding the concept of green IT is moderate however faculty members are more aware of this new hot topic.
- Most of the respondents (85%) are aware that computer wastes contain materials which are hazardous for the environment ,however only few (18%) of them give them to computer recycling centers.
- A majority (67%) of respondents already practice green IT by switching off the PC when not in use or using hibernate power saving mode which also conserves energy.
- A majority of respondents (67%) are aware of the fact that paper waste is hazardous for the environment, however only 1/3rd of respondents follow the Green It measure of collecting waste paper separately and giving it for recycling

SUGGESTIONS

1. BLACKLE :*Blackle* is a Google search engine which simply displays your google search screen along with the search results page in black color rather than white. When using the standard google search engine which displays white screen, your computer consumes 74W.When the screen is black it consumes only 59W.Based on this concept if everyone switched from Google to Blackle, mother earth would save 750MW each year. This was a really good implementation of Green Computing. The principle behind Blackle is based on the fact that the display of different colors consumes different amounts of energy on computer monitors.

   Making *Blackle* homepage on every computer in the college would save some amount of energy and would also save Rs 0.975 per PC in a year thus leading to minor cost saving. Small things make a big difference over time hence it would not be wise to ignore this. Green computing may not make a difference if carried out by a single organization ,but if every company and organization starts implementing it, it would make a difference towards a green planet. By using Blackle in colleges , awareness about this google search engine might grow leading to more organizations using it and saving mother earth.



2. *POWER MANAGEMENT FEATURES:*

- ***Disable Screen Saver:*** Screen savers are used to reduce the burn in of computer monitors .However it was found that Screen savers actually use more energy due to its graphical interface. Since screen burn in is no longer a concern, energy consumption can be reduced by disabling screen savers. In this way, power consumed by intensive graphics is eliminated, leading to the monitor "falling asleep" after a period of idling, automatically conserving more power. To turn off Screen Saver – right click, go to properties ,on screen saver tab ,select none.

- ***System Standby Mode:*** System standby is one of the most effective power saving features. After a set idling period, a computer will shutdown most of its components significantly reducing power use. Volatile memory remains active so that whatever the user was working on will still be there when the computer wakes up from standby mode. A desktop computer that uses more than 100 watts idling can use as little as 5 watts when in standby mode, using one twentieth of the electricity it used when idling. Wake up time for system standby mode requires a few seconds, a delay that users may not be accustomed to. Standby mode is much faster than shutting down and later powering on the computer, and it preserves the computer's state inmemory, making it preferable for users seeking a balance between convenience and greenness. The power button of most computers can also be configured to send the computer into standby mode rather than shutting it down, further enabling users to conveniently save power. *A timer of 5 mins of inactivity would be wise in colleges.*

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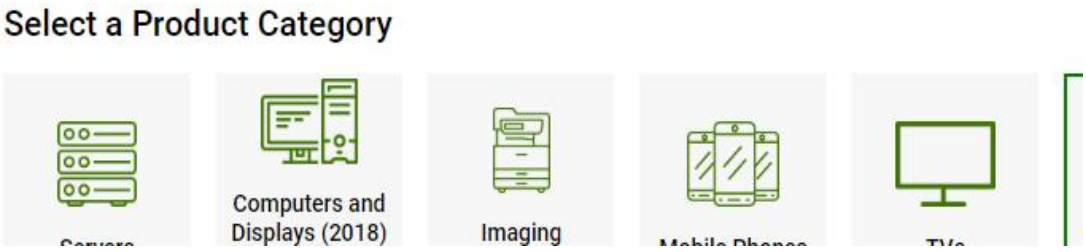
- ***Hibernate Mode:*** The hibernate mode is one level higher than standby mode when it comes to energy conservation. It conserves more energy by completely powering off the computer. Activating the hibernate mode causes the memory state to be saved onto the hard disk before powering down. When coming out of hibernate mode, the computer restores the memory state, returning the computer to its pre-hibernate state. A desktop computer will consume approximately 3 watts in hibernate mode vs. 5 watts for standby. A disadvantage of the hibernate mode is that it takes slightly longer to enter and exit hibernate than standby. The idle time should be set to 5 mins in our college.

3. *TURN OFF PC*: Powering down equipment is the simplest, most effective and most obvious way to reduce computing power consumption. Computers have become such a standard part of daily life that many computers are left powered on around the clock, and are often done as a convenience to the user. This convenience is costly since the simple act of powering off a computing device will significantly reduce its power consumption, although it is important to note that many devices may still consume a small amount of power or "phantom load."

4. *MONITOR SIZE:* From time to time the college might require new monitors for the PCs. According to the survey conducted in college, almost 50 % of students are ready to use a smaller size monitor which conserve more energy. The students can be made aware of the importance of energy conservation. The college must purchase 14 or 15 inch monitors instead of 17 or 19 inch monitors, as a 17 inch monitor uses 40% more energy. Also higher the resolution the more energy it needs. Since college computers are only used for work and study purposes and not for high quality display , reducing the size and resolution a little would not have any negative effects.

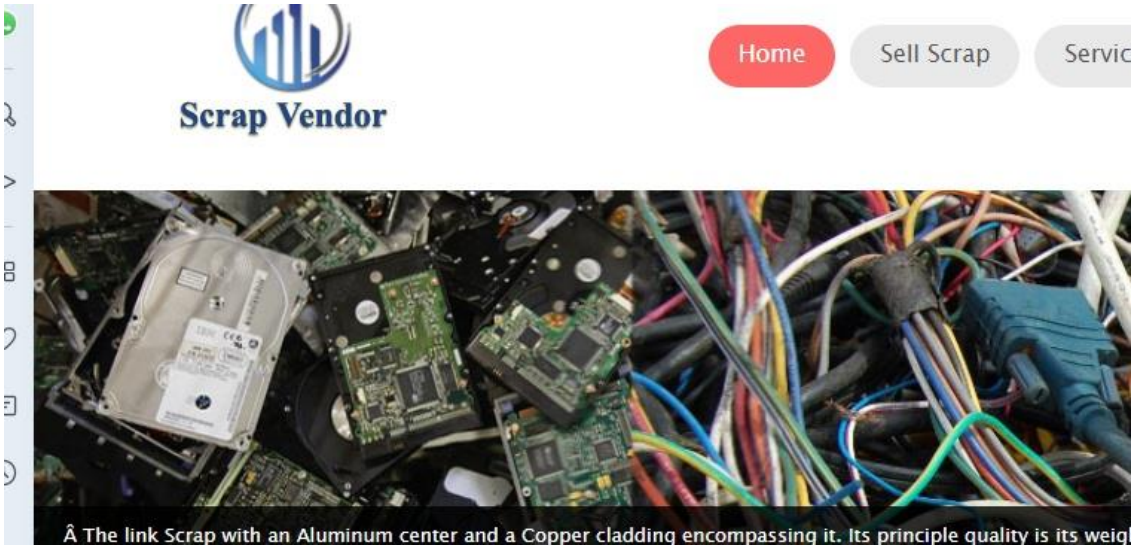
5. *ELECTRONIC PRODUCT ENVIRONMENTAL ASSESSMENT TOOL:* The **Electronic Product Environmental Assessment Tool** (EPEAT) is basically a website which helps us to select and purchase greener products like computers, laptops and cell phones. It ranks the products as Gold , Silver or Bronze rating based on certain criterions regarding energy conservation levels and the amount of hazardous materials present in the product. EPEAT is managed by the Green Electronics Council, a non-profit organization founded in 2005 . Bronze-rated products meet all the required criteria in each EPEAT product category. Silver-rated products meet all the required criteria plus at least 50% of the optional criteria. Gold-rated products meet all the required criteria plus at least 75% of the optional criteria .



Lenovo ThinkCentre M710t 10M9003EUS Desktop Computer - Intel Core i7 – This computer has been given a gold rating by EPEAT and could be purchased for college use .V196wlb Acer monitor is another gold rated product which could be purchased in future.

6. *RECYLING :*

Computer waste contains toxic substances. Land filling of e-wastes can lead to the leaching of lead into the ground water. Hence we must not simply dump non working computers and computer components like key board and mouse. Instead they must be recycled at e-waste recycling centers so that they do not cause any harm to our environment. There are many such recycling centers available to us in Mumbai. I would suggest using the e-waste recycling center called the “Scrap Vendor” which is located in Malad east. This center has been approved by the Government and accepts all kinds of computer scraps and pays back a certain amount thus leading to cost saving .



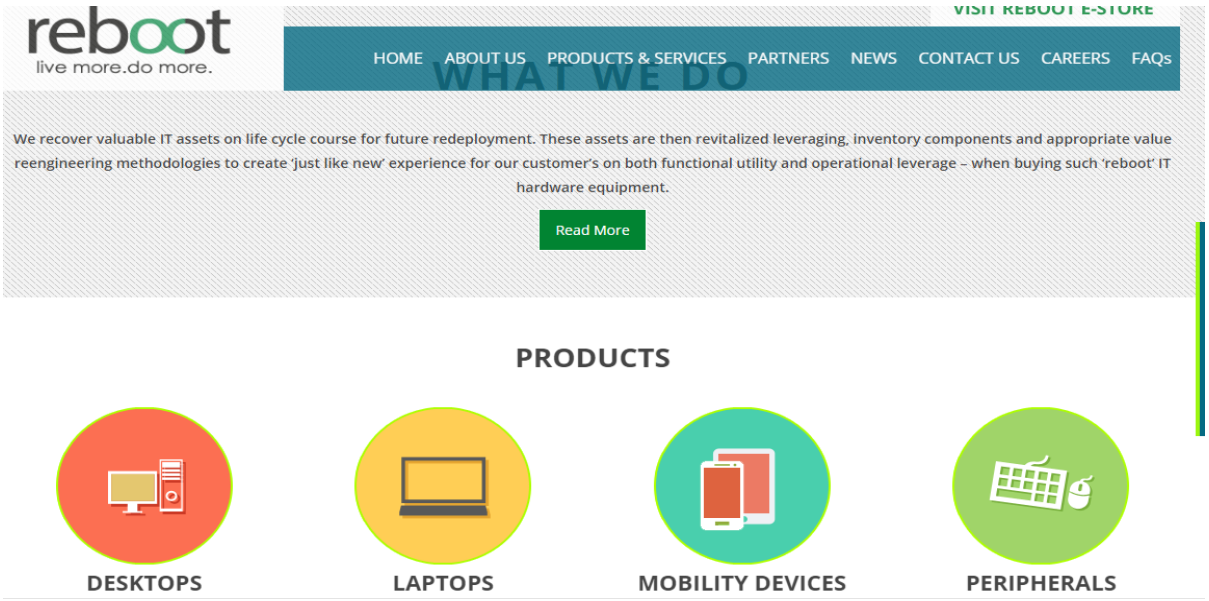
7. *REDUCING AND RECYCLING PAPER WASTE:*

Deforestation is the primary effect of our mindless use of paper.Pulp and paper is the 3rd largest industrial polluter of air, water and soil. Chlorine-based bleaches are used during production which results in toxic materials being released into our water, air and soil. When paper rots, it emits methane gas which is 25 times more toxic than CO2.Hence we must use as little as paper as possible and must recycle paper waste .One way to do this is to send information via E-mail ,Whats App etc. It will not only save the environment for the harmful effects of paper waste but will also lead to cost cutting as colleges normally use a lot of paper and students dispose of waste paper instead of recycling them .The college must have paper recycling bins and students must be made

aware of the harmful effects of paper waste. If you do have to print ,print as little as possible. Review and modify documents on the screen and use print preview. Minimize the number of hard copies and paper drafts you make.

8. COMPUTER REFURBISHING: The short lifespan (2 -5 years) of a computer leads to many computers being unnecessarily disposed of resulting in e - waste , while many people in the world have no access to computers . Computer refurbishing is a process which takes care of these 2 concerning problems (e - waste and digital deprivation) .It is distinct from computer recycling in which computers are rendered useless. Computer refurbishing extends the useable life of donated computers, avoiding the consumption of additional natural resources. Computer refurbishing takes donated computers, fixes them up and gets them to people who do not own a computer. Computer refurbishing also removes the rate at which we consume natural resources since reusing computers weakens the need to manufacture new ones. Considering that computers takes a lot of chemicals and fossil fuel to manufacture, computer refurbishing is the right step towards green computing .

   REBOOT : Reboot is India's leading and Microsoft Registered refurbisher .Our college can donate computers (whose life span has almost come to an end) to an refurbishing center like Reboot which is headquartered in Hyderabad.



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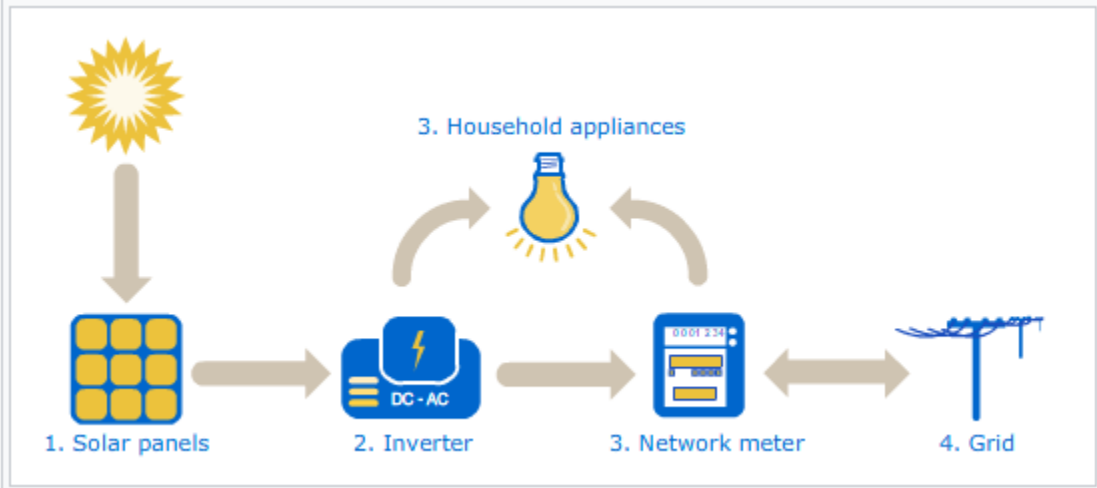
9. *GRANOLA:* Granola is power management intelligent software with which you can reduce the energy consumption of your laptops, PCs, and servers by 15-35% without any impact on performance of the devices. Unlike other software power management,

Granola reduces the power of your system by 15-35% while you use it. By applying powerful workload monitoring and machine learning, Granola can adapt to your usage patterns. It also tracks the energy saved in order to estimate cost savings and carbon emission reductions.

Granola uses a technology called dynamic voltage and frequency scaling or DVFS.. DVFS works in a similar way – when it needs CPU at full speed, it allows that, but when the PC is in a lower state of, it uses less energy.

10. SOLAR PHOTOVOLTAIC SYSTEM: A photovoltaic (PV) system is a system composed of one or more solar panels combined with an inverter and other electrical and mechanical hardware that use energy from the Sun to generate electricity.The light from the Sun, made up of packets of energy called photons, falls onto a solar panel and creates an electric current through a process called the photovoltaic effect. Each panel produces a relatively small amount of energy but can be interconnected together with other panels to produce higher amounts of energy as a solar array. The electricity produced from a solar panel (or array) is in the form of direct current(DC). Although many electronic devices use DC electricity, including your phone or laptop, they are designed to operate using the electrical utility grid which provides (and requires) alternating current(AC). Therefore, in order for the solar electricity to be useful it must first be converted from DC to AC using an inverter. This AC electricity from the inverter can then be used to power electronics locally, or be sent on to the electrical grid for use elsewhere.



According to a recent study conducted in the college, it would cost the college 3.5 Lakh plus future maintenance cost for a 5KW solar power. If the SPV is installed the college wouldn't require to pay for electricity charges during the day as the energy is being generated by the solar panels. The study also tells us that the organization would breakeven in 7 months after which there would be a considerable amount of cost saving. The project would save 40 thousand rupees per month .

11. ***LED MONITERS:*** LCD monitors typically use a cold cathode fluorescent bulb to provide light for the display. Some newer displays use an array of light emitting diodes (LEDs) which uses 10 – 20 % less energy depending on the size of monitor.

PROS of LED monitor:

1. Lifespan of 50 thousand hours + .
2. No pollution issue as LED do not contain mercury which is hazardous if the monitor is dumped .

CONS – higher initial price.

IMPLIMENTATIONS

- ***ENERGY STAR*** : Most of the college computers have a energy star logo on it which means it complies with the energy star energy conservation and environmental safety standards. However the older Zenith PCs are not energy star approved.

ENERGY STAR® is program was founded by the Environmental Protection Agency (EPA) and the Department of Energy (DOE).When you see a energy star logo at the back of your computer or laptop it means you are using a computer or equipment which uses

minimal amount of energy and is environmental friendly .Its goal is to help consumers, businesses, and industry save money and protect the environment through the adoption of energy-efficient products and practices. ENERGY STAR is the trusted, government-backed symbol for energy efficiency helping us all save money and protect the environment through energy-efficient products and practices.

The ENERGY STAR label was established to:

Reduce greenhouse gas emissions and other pollutants caused by the inefficient use of energy; and make it easy for consumers to identify and purchase energy-efficient products that offer savings on energy bills without sacrificing performance, features, and comfort.

- DONATIONS OF OLD PCs: The older computers were given as donations to government schools and other schools in villages so that they are provided with the technology computers offer to students .Since these schools cannot afford computers on their own , the college has donated the older computers instead of dumping them or giving it for recycling .The college is always looking forward to donating the older computers to other schools in need of computers
- NO YOUTUBE AND VIDEO STEAMING ACCESS : The college has blocked access to youtube and other video streaming sites which according to study takes up a high amount of energy consumption. Students may be tempted to use such sites during lectures or during their free time leading to high amount of energy consumption.

LIMITATIONS

1. Some green IT practices might end up sacrificing quality of education. For example reducing monitor size from 19 inch to 15inch may result in future complaints such as students straining their eyes or fellow team mates not able to see the screen from side when working on a group presentation on a single PC.
2. Some green practices like putting a 5 min timer on computer standby or hibernate mode may be annoying sometimes as if one is writing something by looking at the screen , he has to constant stop writing and move the mouse from time to time.

3. The positive effect of green IT measures will be seen if only all colleges and organizations practice it. It is something that needs to be taken by the world as a whole in order to make a real difference.
4. A lot of efforts need to be taken, which may only lead to minor cost cutting and energy conservation .
5. Some respondents may not feel comfortable to admit that they are wrong and might hence might not be honest while filling the questionnaire.

FUTURE SCOPE

1. Solar photovoltaic system can be upgraded or expanded to provide electricity for the entire campus but would require sufficient planning and also would require considerable funds .
2. The organization can try to become a paperless organization by using E mail and other modern applications to transfer information, online written exams and tests to limit the use of paper .
3. The 14 inch LCD monitors can be upgraded to 14 inch LED monitors in future as they conserve 15 % more energy than LCD screens. With LED monitors becoming cheaper, it would be a viable option in future.

CONCLUSION

As Global warming has become something to worry about,we must play our part towards a greener society. Green computing is a step forward towards a green earth. Even though we are being much dependent on computer systems as time moves progresses ,we need to to be twice as responsible regarding energy conservation and overcoming the harmful effects of computer components . Students, the future of tomorrows world need to be made aware of the threat of global warming .They need to be made aware of the concept of Green computing and must be trained to follow the measures towards Green Computing .They are the leaders of tomorrows organizations and they need to apply the principles of Green IT in their organizations if they want to see a better world. Green computing has a high initial cost associated , however in a long run it leads to higher cost saving. The future benefit would easily outweigh the initial cost ,but

sadly this is something organizations don't see today. If every person ,every organization does his duty towards green computing as a whole today ,our children would see a better future.

REFRENCES

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QUESTIONNAIRE

You are a _____ of Saint Francis Institute? *

- Student
- Professor
- Office staff

How often do you use the computers in college? *

- Once a week
- Twice a week
- Thrice a week
- Almost everyday

On average how long do you spend in a day using the college computers? *

- less than 1 hour
- 1 hour
- 2 hours
- 3 hours
- more than 3 hours

Are you aware of the concept of Green IT /Green computing? *

- Unaware
- Partially aware
- Fully aware
- I am aware and try to implement it in personal life and in college

Energy conservation can lead to environmental quality ,financial security and higher savings. *

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

What do you do when your personal computer or college computer is idle? *

- Use a screen saver
- Hibernate mode
- Turn off the PC
- Simply leave it on as you know someone else might use it soon
- You do nothing

Computer wastes contain hazardous materials that may damage the environment when dumped. *

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

What do you usually do when a computer component like mouse ,keyboard and monitor turn scrap *

- Simply dump it
- Give it to any scrap buyer
- Give it to a computer recycling center

Are you aware of a Google homepage called Blackle which can help in saving energy? *

- Unaware
- Partially aware
- completely aware
- I am aware and i use it at home and every other PC i use

Paper waste is hazardous for the environment *

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

What do you do of waste paper? *

- Dump it in the dustbin
- Collect it separately and give it for recycling
- Reuse it

Submit