STUDY OF GREEN PRACTICES & EFFORTS FOR SUSTAINABILITY IN I.T. INDUSTRIES IN INDIA

THINK GLOBAL & ACT LOCAL

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Technology, Education, Research and Rehabilitation for the Environment
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Abstract:

The topic of this research is Study of Green Practices and Efforts for Sustainability in IT Industries in India. The main objectives of this research were to understand the green practices being followed by the IT companies and to understand the problems faced during the implementation of these practices. To achieve the objectives of the research, an in-depth study of energy consumption and the green initiatives was done. A questionnaire was also mailed to 200 respondents and 10 HR respondents from IT companies in Pune to understand the green practices being followed and their efforts towards sustainability in their respective companies. This research shows that it is possible to align green initiatives with the strategic objectives of the company.

The research also outlines the impact of green practices on the daily functions of the IT companies. It was also very evident that the financial constraints, inappropriate approach to implementation, lack of management and ignorance and employee commitment are the biggest obstacles. After thorough analysis of all results, it is fair to conclude that green initiatives, if properly managed, can enable organizations to be responsible corporate citizens and also deliver higher profitability with a competitive advantage. If Green Practices are properly followed in all IT companies then it would definitely be beneficial to the company and society at large.

Keywords:

IT (Information Technology), Green Practices, Sustainability

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Abstract:

The concept of "Study of Green Practices and Efforts towards Sustainability in IT Industry" in India is a concept that is rapidly gaining popularity given the rising awareness about the hazardous effects of IT related carbon emissions and energy consumption. This concept is more often referred to as Green IT or Green Computing. Green IT refers to two things which are in themselves changing rapidly. The first is our understanding of what Green is and what it is not. The second is Information Technology, which is extending its scope, techniques and social and geographical presence on a daily basis. As per IFG (International Federation of Green) ICT and IFG Standard, green IT, or ICT sustainability, is the study and practice of environmentally sustainable computing or IT computing.

The formal definition given for "Green IT for Sustainable Business Practice" by Mark G. O'Neill and published by BCS is –"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 ICT industry. It is also focused on using the services of ICT to help reduce the organization's overall carbon footprint." The goals of green computing are similar to green chemistry: reduce the use of hazardous materials, maximize energy efficiency during the product's lifetime, and promote the recyclability or biodegradability of defunct products and factory waste.

Objectives of the Research

The main objectives of this research were:

1. *To understand the green practices being followed by the IT companies and*
2. *To understand the problems faced during the implementation of these practices.*

Review of Literature

Mines and Davis, in the year 2007, wrote a research document stating that the combination of the eco-sustainability and the IT infrastructure perspectives can offer useful insight in conceptualizing sustainable IT systems. As more IT organizations become concerned with the issues of sustainable IT, there is a need to understand their capability for implementing and sustaining IT strategies and polices. From the study, we learnt that with the opportunities and potentials for the development of sustainable IT industry, this research will add a new dimension in the dual area of sustainability and growth of IT industry in India.

Sunil Luthra and Vinod Kumar said Green supply Chain Management (GSCM) is an approach for improving performance of the processes and products according to the requirements of environmental regulations. Eleven barriers to implement GSCM in Indian automobile industry have been identified. Interpretive Structural Modeling (ISM) methodology has been used for finding contextual relationships among various barriers to implement GSCM in Indian automobile industry. A model has been developed from ISM methodology. Lack of Government Support Systems; Lack of Top Management Commitment and Lack of IT Implementation have been identified as the driver variables as well as resistance to Technology Advancement Adoption.

Material and Methods:

Primary data was collected by means of a structured questionnaire. Two sets of respondents were identified. They were 200 IT employees and 10 HR managers of IT companies in Pune. Hence, two

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Results:

T-1: Duration for Green Practices being followed by the Company

Sr No.	Particulars (in years)	Percentage
01	1-3	30
02	4-6	20
03	More than 6	50

sets of questionnaires were administered. The first one consisted of 14 questions for IT employees and the other one consisted of 8 questions for HR managers. The questionnaires tried to bring out relevant data to meet the objectives of the research. The response of the respondents was taken by distributing printed as well as online questionnaires.

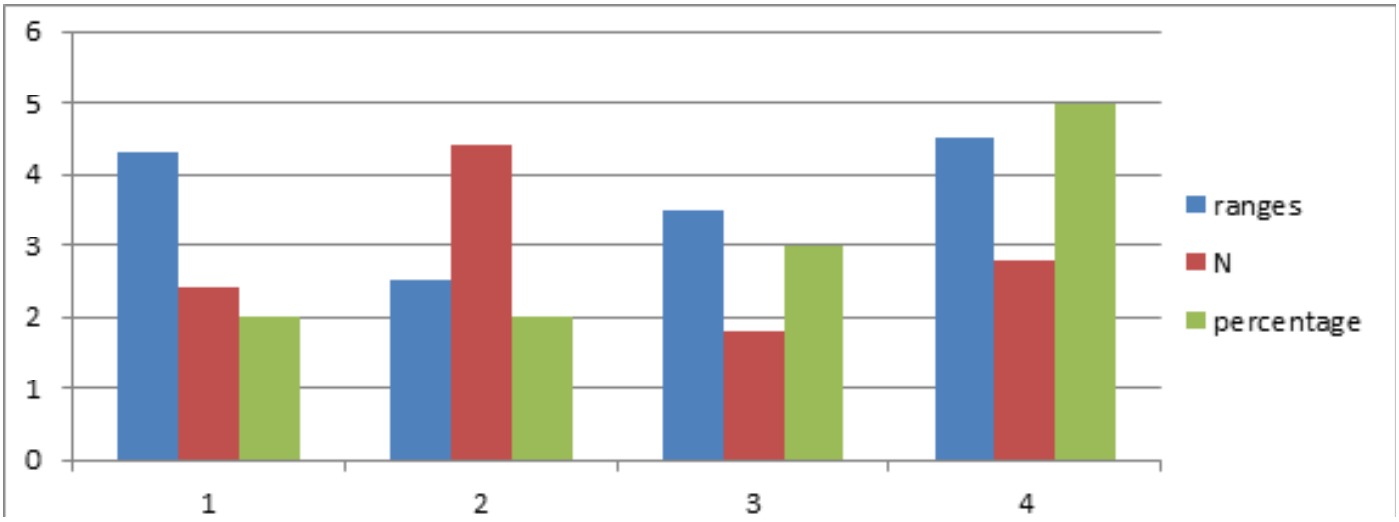
T-2: Number of Instructions Given to the New Trainee on Everyday Basis

Sr No.	Particulars (in years)	Percentage
01	5-15	60
02	16-25	20
03	26-35	00
04	More than 35	20

Analysis: As shown in T-1, almost 50% of the companies have been following this practices for more than 6 years. For 4-6 years of theses practices only 20% of the companies constituted the part of the whole and for 1-3 years only 30% of the companies made a part of the whole.

Fig-1: Number of Instructions Given to the New Trainee on Everyday Basis

Analysis: *As can be seen from T-1 and Fig-1, 60% of the instructions are given by 5-15 pages on an average. 16-25 pages of instruction form 20% of the instructions. More than 35 pages form 20% of the offline instructions. This means very less number of pages is being used on an everyday basis. Hence this graph supports the first objective of our study.*



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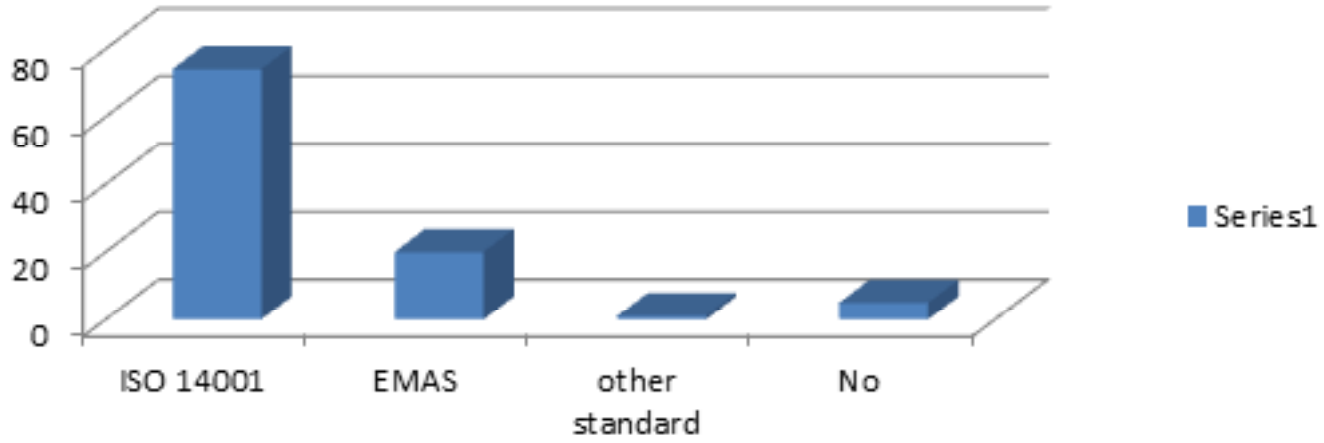
T-3: Environmental Management System

Sr No.	*Particulars*	*Percentage*
01	*Yes* *a. ISO 14001* *b. EMAS* *c. Other Standard*	 *74* *20* *1*
02	*No*	*05*

Fig-2: Environmental Management System



Analysis: *The above data fulfils the first objective of the research study which was* ***"To study the green practices being followed by the IT companies".*** *As it can be seen from T-3 and Fig-2, most of the companies (74%) have ISO 14001 as the environmental management system as shown in the graph. Only 20% of the companies follow EMAS as their environmental management system.*

As found out by Mr. Anil Jaswal , the increasing awareness about the green practices and the introduction of Carbon Reduction Committee in the UK and similar such initiatives around the world have led to the rapid growth of green computing as a mandatory requirement for regulatory compliance. The above table shows the various standards being implemented by the Indian companies as the regulated compliance that the companies are required to the government.

T-4: Thoughts about the Implementation of Green Practices in Different Companies

Sr No.	*Particulars*	*Percentage*
01	*It is long-term beneficial for sustainable development*	*84*
02	*It has short term environmental benefits*	*13*
03	*It is difficult to set out because of some reasons*	*02*
04	*It is a waste of resources*	*0*

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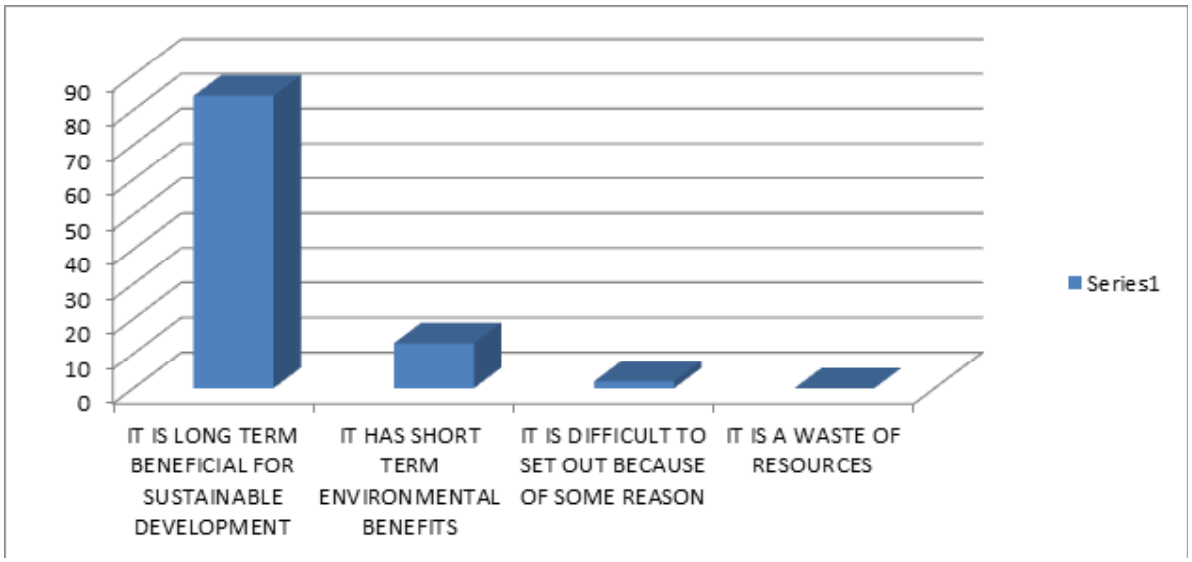
Fig-3: Employees' thoughts about implementation of green practices



Analysis: *The above data fulfills the first objective of the research study which was "To study the green practices being followed by the IT companies" .As it can be seen from the above pie chart and table, most of the respondents consider the green practices to be long term beneficial for a sustainable development. 84 percent felt that it is beneficial in long-term for sustainable development, 13 percent felt that it has short term environmental benefits, 2 percent felt that it is difficult to set out because of some reasons and nobody felt it to be a waste of resources.*

As found out by Anil Jaswal, following the green practices will not only serve the purpose of attaining higher energy efficiency but will also inculcate a sense of optimizing and thereby developing applications contributing towards the green movement. The same sentiments are being echoed by the employees across IT organizations that the green practices are beneficial for a sustainable development to take place over a long period of time.

T-5: Suggestion Regarding the Implementation of the Green Practices

Sr No.	*Particulars (Options)*	*Percentage*
01	*More companies should come up with such practices*	*25*
02	*It's a very good initiative to build a better environment*	*37*
03	*Printing Less Paper, Go Digital with your documents, Turn off everything before leaving for the day, explore water reusable practices are few suggestions that will definitely help.*	*16*
04	*More Eco-friendly practices to be adopted as part of the sustainable development.*	*10*
03	*They should focus on creating and encouraging individuals for following the practices.*	*12*

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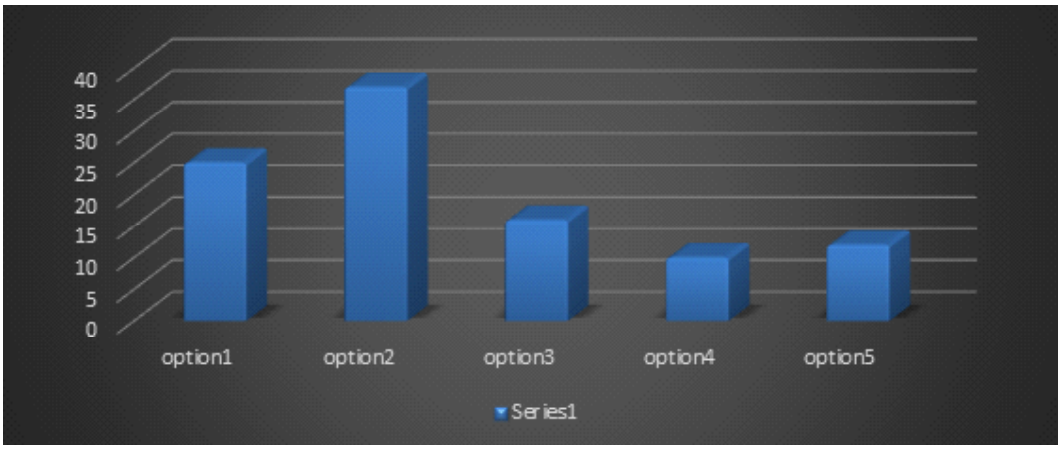
Fig-4: Employees' suggestions about implementation of green practices

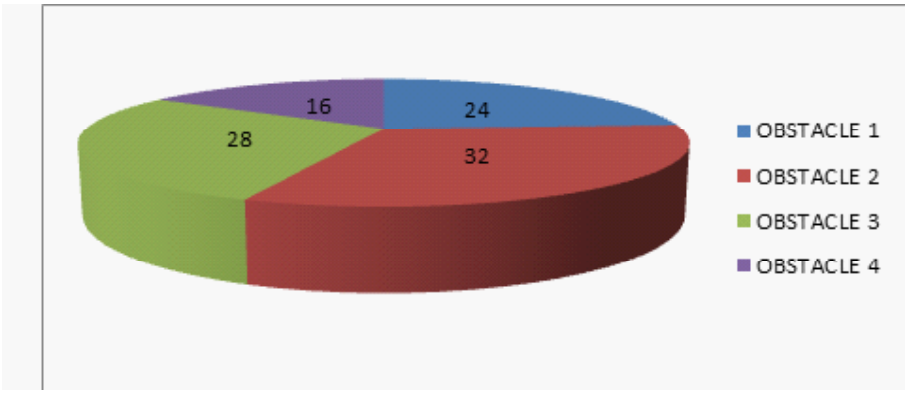


Analysis: *As can be seen from T-5 and Fig-4, most of the respondents feel that going digital with the documents, reducing electricity wastage and adopting more eco-friendly practices are some of the suggestions that should be followed for implementing the green practices. We felt 25 percent more companies should come up with such practices.*

T-6: Biggest Obstacles towards Environmental Initiatives among Companies

Sr No.	*Particulars (Options)*	*Percentage*
01	*Less interest shown by employees*	*24*
02	*Lack of Management and Employee commitment*	*32*
03	*Ignorance of the employees and wastage of natural resources by people*	*28*
04	*Financial constraints and Inappropriate approach to implementation*	*16*

Fig-5: Biggest Obstacles towards Environmental Initiatives among Companies



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Analysis: *The above data fulfils the second objective of the research study which was "To study the problems faced during the implementation of these practices" .As it can be seen from T-6 and Fig-5, most respondents said that financial constraints, inappropriate approach to implementation, lack of management and ignorance and employee commitment are the biggest obstacles.*

T-7: Colleagues' and Subordinates' Response towards the Company's Effort

Sr No.	Particulars (Options)	Percentage
01	Poor	24
02	Average	35
03	Good	33
04	Very Good	05
05	Excellent	03

Analysis: *The table T-7 shows that most of the employees have rated their colleagues and subordinates to have responded in a good manner to the company's efforts for sustainability and some of them who feel more responsible towards the environment extensively involve in these activities also.*

Discussion :

*The first objective of the study was "**To study the green practices being followed by the IT companies".** The study found out that most of the IT companies are following various environment management standards like ISO 14001 and EMAS as a regulatory compliance. The companies are also creating awareness among its employees and encouraging them to follow green practices at work and at home also. Also, they are adopting various strategies to reduce the IT related carbon emissions and do their bit for the environment.*

The second objective of the study was **"To study the problems faced during the implementation of these practices".** *The study also tried to look into the problems being faced by the IT companies that they faced during the implementation of these practices for the first time. Lack of awareness among employees and their ignorance, lack of commitment on the part of management and employees and sometimes financial constraints are some of the difficulties faced by the companies which lead to either the companies not following these practices properly or not focusing properly on their implementation of the green practices.*

The hypothesis of the study was "IT Companies in India are extensively following Green Practices and making efforts towards sustainability". The study was started based on this hypothesis and after doing a thorough analysis of the data and the available statistics, we deduced that the IT companies are now focusing on a sustainable work environment and are continuously making the green practices and efforts towards sustainability a mandate. Not only this, the companies are now also creating more and more awareness among their employees regarding these practices and are organizing various workshops and green walks to encourage them to imbibe these practices in their work routine.

The Green IT concept is steadily becoming one of the most talked about agenda in the Indian It

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companies. The companies are coming up with various initiatives and techniques that will help them to reduce their carbon footprint, IT related emissions and energy consumption. The companies are trying to take a holistic approach towards the issue and do their bit in saving the environment. Also, they are creating awareness among their employees and the public in general by organizing various road shows and programs so as to bring more and more people together to work for the sustainable environment.

Recommendations

- *There can be a green team in the IT companies which will coordinate with the various team working across the organization to work together to focus more on the green practices.*
- *The companies should more and more focus on sustainable software development and use of open source methodologies that are more efficient than the traditional development methods.*
- *Avoiding waste of any kind, be it in the form of paper or in the form of computers and computer parts will help the companies develop an energy efficient attitude.*
- *The companies can also keep rewards for the teams and verticals across organizations which have implemented and inculcated the green practices in their work routine to encourage more and more participation from the employees.*

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