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STUDY OF GREEN IT: GREEN COMPUTING AND ENERGY EFFICIENCY

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ABSTRACT

Green IT is a term used to describe an innovative way on how technology and ecology converge together .It focuses on ways in reducing overall environmental impacts. During recent years, attention in 'IT' has moved research into energy-saving techniques. One of the basic aim of Green IT is saving energy or reduction of carbon footprints. This research provides study on Green IT trends, challenges and future trends of Green IT. Around the world recent studies have shown the sustainable IT services require the integration of green computing practices such as recycling, electronic waste removal, power consumption and a optimization of IT infrastructure to get together sustainability requirement and with growing body of evidence demonstrating the potential return on investment.

KEYWORDS: Green computing, e-waste recycling, energy consumption, ROI.

INTRODUCTION

The objective of study was to ascertain the awareness and spread of Green IT. The Green computing is the study and of using computing resource efficiently. Green computing covers a vast range of methods,from energy saving techniques to study of materials used in our lives .Its main purpose is to find and promote new ways of reducing pollution, discovering alternative technologies and creating more recyclable products. Most of the responses came from segments like IT/data centers, bpo, logistics .The green movement has been expanding rapidly in the world. Green is slowly and steadily becoming the symbolic colour of eco-consciousness in India. The growing consumer awareness about the origin of products and the concern over impending global environmental crisis there are increasing the opportunities to marketers to convince consumers. Firms have increasingly introduced GPIs (Green Product Innovations) into their product developments over recent decades. However by research conducted on awareness of Green Marketing and its influence on buying behavior of consumers with special reference to Madhya Pradesh, India Studies on the consumption of environmentally sustainable products have demonstrated that perceived product performance is a significant barrier to their selection. For example, Ottman (1998) shows that some consumers do not buy "green" products because of their perceived inferiority, citing a study of observable and product-specific information (e.g. use of biodegradable and recycling behaviour) by Roper Starch Worldwide (RSW). Alston and Prince Roberts (1999) found, in their research on environmental strategy and new product development, that there was a willingness to pay slightly more for environmental improvement. When PC visionaries Bill Gates and Steve Jobs set out to put a computer on every desktop back in the 1980s, no one could have imagined the millions of computers that drive billions of business, consumer and personal internet transactions across a global network each day. With an average desktop computer and monitor consuming between 60 and 300 watts of electricity, it is not surprising that energy consumption and cost reduction programs represent a major area of focus and opportunity within Green IT.Thought leadership on how to approach the energy efficiency problem is now coming from both private companies and government entities, as well as from core IT product and services companies such as Google, Intel, Dell, Microsoft, HP, Sun and many others. Power usage and associated cost reduction programs are also a major area of focus for CGI's Green IT service development efforts due to the strong ROI potential this area represents for their clients For that several techniques and methods are provided by leading journals.

LITERATURE AND REVIEW

The idea of green IT has been around a good time, the Government themselves play a role in it. For example the Environmental Protection Agency (EPA) launched "The energy star" program in 90s to promote energy efficient methods. Climate Savers Computing Initiative Started by Google and Intel in 2007, the Climate Savers Computing Initiative is a non-profit group of eco-conscious consumers, businesses and conservation organizations. Goal was to promote development, deployment and adoption of smart technologies that can both improve the efficiency of a computer's power delivery and reduce the energy consumed when the computer is in an active state. EPEAT is a system to help purchasers in the public and private sectors evaluate, compare and select desktop computers, notebooks and monitors based on their environmental attributes. EPEAT also provides a clear and consistent set of performance criteria for the design of products, and provides an opportunity for manufacturers to secure market recognition for efforts to reduce the environmental impact of its products .Survey of Green within computing by Vishnu Kumar concludes that EPA today still plays an active role by providing not only energy effective Methods but also cost effective methods for consumers.

METHODOLOGY

A structured questionnaire was used to gather information. The questionnaire was hosted on a website and the survey conducted over the internet. While tabulating the results of study, it has been assumed that organization means responding participants. (Below excel sheet table)

DISCUSSION AND RESULTS

[1] On awareness of green products and eco-friendly products: There is statistically no significant difference between the mean of Male and Female perceptions.
[2] The environmental care factor: There is statistically significant difference between the mean of Male and Female.
[3] In the era of advancement is there a need of green IT: There is statistically no significant difference between the mean of Male and Female perceptions.
[4] Which operating system is most green: There is statistically no significant difference between the mean of Male and Female perceptions.
[5] Disposing of old computers and electronic gadgets: There is statistically no significant difference between the mean of Male and Female perceptions.
[6] Telecommunicating is a way company can make their offices greener: There is statistically no significant difference between the mean of Male and Female perceptions.
[7] Screensavers can make your computers last longer: There is statistically no significant difference between the mean of Male and Female perceptions.
[8] Products with energy star logo: There is statistically no significant difference between the mean of Male and Female perceptions.
[9] Awareness on generation of co2 per year by pcs: There is statistically no significant difference between the mean of Male and Female perceptions.
[10] Manufacturers taking initiatives to reduce e-waste: There is statistically no significant difference between the mean of Male and Female perceptions.

CONCLUSION

The efforts of participants for their responses are highly appreciated.It is established that people take pride in their organization work on Green IT.The need of awareness came out boldly.A lot of improvement in claiming (communicating) the good work (Green IT actions taken) was also sited.By going "green"in technology we help promote on eco-friendly and cleaner environment along with conserving energy reducing cost.

FUTURE STUDY

There is need of long future longitudinal studies in Green IT.IT organizations are looking at Green IT programs to achieve objectives that includes improving energy efficiency and power management practices.

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APPENDIX:

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
VAR00001	Equal variances assumed	8.213	.005	-1.464	93	.147	-.13556	.09261	-.31946	.04835
	Equal variances not assumed			-1.453	87.531	.150	-.13556	.09333	-.32103	.04992
VAR00002	Equal variances assumed	10.017	.002	-1.509	93	.135	-.04444	.02946	-.10294	.01405
	Equal variances not assumed			-1.431	44.000	.160	-.04444	.03107	-.10706	.01817
VAR00003	Equal variances assumed	.086	.771	.442	93	.659	.09111	.20595	-.31786	.50008
	Equal variances not assumed			.442	91.853	.659	.09111	.20601	-.31804	.50027

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VAR00004	Equal variances assumed	2.330	.130	-1.250	93	.214	-.18444	.14752	-.47738	.10849
	Equal variances not assumed			-1.220	71.179	.226	-.18444	.15116	-.48584	.11695
VAR00005	Equal variances assumed	.484	.488	-.016	93	.987	-.00222	.13469	-.26969	.26524
	Equal variances not assumed			-.016	89.770	.987	-.00222	.13529	-.27101	.26656
VAR00006	Equal variances assumed	.626	.431	.770	93	.443	.15556	.20204	-.24565	.55677
	Equal variances not assumed			.772	92.789	.442	.15556	.20141	-.24441	.55552
VAR00007	Equal variances assumed	1.669	.200	.855	93	.395	.28889	.33800	-.38232	.96010
	Equal variances not assumed			.857	92.629	.394	.28889	.33723	-.38081	.95859
VAR00008	Equal variances assumed	.008	.929	.736	93	.463	.11333	.15392	-.19231	.41898
	Equal variances not assumed			.730	87.034	.467	.11333	.15520	-.19515	.42182
VAR00009	Equal variances assumed	.299	.586	-.330	93	.742	-.09111	.27570	-.63860	.45638
	Equal variances not assumed			-.330	91.948	.742	-.09111	.27571	-.63869	.45647
VAR00010	Equal variances assumed	.042	.838	-.015	93	.988	-.00222	.14507	-.29031	.28587

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	Equal variances not assumed			-.015	92.789	.988	-.00222	.14462	-.28942	.28498