GREEN ICT PRACTICES FOR ACHIEVING COST EFFECTIVENESS OF ELECTRICITY USAGE OF ICT IN SRI LANKAN APPAREL INDUSTRY

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Thesis submitted in partial fulfillment of the requirements for the degree of Master of Business Administration in Information Technology

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DECLARATION

I declare that this is my own work and this dissertation does not incorporate without acknowledgement any material previously submitted for a Degree or Diploma in any University or institute of higher learning and to the best of my knowledge and belief it does not contain any material previously published or written by another person except where acknowledgement is made in the next.

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D M T Amarasinghe Date

The above candidate has carried out research for the Master's dissertation under my supervision.

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ABSTRACT

It is well known that the protection of the environment not only paves the way for a healthier life but also is required for the sustainability of our resources. Green concept has been identified as a perfect method to apply in all aspects of sustainability. Green Information Technology has occupied a leading role of Green concepts. Green ICT concept involves in reusing, reducing and recycling resources of ICT.

The objectives of this research are to identify Green ICT practices that significantly reduce electricity consumption for ICT in Apparel Industry operating in export processing sector in Sri Lanka, to describe the barriers for implementing those practices and to determine how the apparel industry can overcome those barriers. The findings of this study can be utilized for the benefit of the organizations in apparel industry and other types of organizations which are interested to implement Green ICT practices successfully. There are certain organizations in apparel industry which are already successful in implementing Green ICT practices while others are yet to implement.

Our results show that reducing datacenter power utility is the most significant practice for reducing electricity consumption of ICT while reducing electricity utilization for all equipment and printers' power utility are also important contributory factors. Further, lack of awareness of Green ICT among the staff has been identified as the main barrier for implementing those practices. However, conducting awareness program and doing cost benefit analysis can overcome the barriers for implementing Green ICT practices.

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LIST OF ABBREVIATIONS

Abbreviation	Description
AEEMA	Australian Electrical and Electronic Manufacturers' Association
AELA	Australian Environmental Labeling Association
AVE	Average Variance Extracted
CBSL	Central Bank of Sri Lanka
CD	Compact Disc
CEPIS	Council of European Public Professional Informatics Societies
CIO	Chief Information Officer
CR	Composite Reliability
CSI	Corporate Sustainability Index
DC	Datacenter
GAP	Global Action Plan
GM	General Manager
IT	Information Technology
ICT	Information and Communication Technology
ICTA	Information and Communication Technology Agency
IMS	Intelligent Manufacturing Systems
MWh	Megawatt Hour
PC	Personal Computer
PUCSL	Public Utilities Commission of Sri Lanka
PUE	Power Usage Effectiveness

RMIT	Royal Melbourne Institute of Technology
TRB	Technology Business Research
TWh	Terawatt Hour
UK	United Kingdom
USA	United States of America