

# END USERS ATTITUDE OF GREEN IT READINESS MODEL

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This dissertation is dedicated to my family for their endless support and encouragement.

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## **ABSTRACT**

Green IT is one of the hot issues nowadays because IT can help to solve the environmental problems in our world. This has advocated further research in the area of Green IT Readiness for organizations because without a clear understanding of Green IT Readiness, organizations will get the undesirable results of Green IT implementations. Currently, the existing Green IT Readiness Model and Framework that had been developed were GITAM Model, G-Readiness Model, GITOL Framework, G-Readiness Framework, Nomological Structure of G-Readiness and Extended Molla's Green ICT Readiness. By the way, this research only focuses on the development of a model for the attitude elements which is one of the components in the Green IT Readiness Model. Hence, there is a need to search the person's attitude of Green IT Readiness before implement it in the organizations. This research proposes a model of Green IT Readiness for end users' attitude. This model contains two components, five sub-subcomponents and seventeen items. The objective of this model is to identify the attitude of end users about the Green IT Readiness in university. UTM end users such as students, academic staff and admin staff will be involved in this model validation. The model validation will be conducted by distributing the questionnaire as a survey.

## ABSTRAK

Teknologi Maklumat Hijau adalah salah satu daripada isu panas pada masa kini kerana teknologi maklumat boleh membantu untuk menyelesaikan masalah alam sekitar di dunia kita. Ini menyokong penyelidikan lanjut dalam bidang Penyediaan Teknologi Maklumat Hijau untuk organisasi kerana tanpa kefahaman yang jelas tentang Penyediaan Teknologi Maklumat Hijau, organisasi akan mendapat hasil yang tidak diinginkan daripada pelaksanaan Teknologi Maklumat Hijau. Pada masa kini, telah terdapat beberapa rangka kerja tentang Penyediaan Teknologi Maklumat Hijau yang telah dibina, seperti GITAM Model, G-Readiness Framework, GITOL Model, G-Readiness Model, Nomological Structure of G-Readiness dan Extended Molla's Green ICT Readiness. Walaubagaimanapun, kajian ini hanya akan memberikan tumpuan mengenai pembangunan rangka kerja untuk unsur-unsur sikap pengguna yang merupakan salah satu komponen di dalam rangka kerja tentang Penyediaan Teknologi Maklumat Hijau. Oleh itu, kajian ini mencadangkan satu rangka kerja tentang sikap pengguna terhadap Penyediaan Teknologi Maklumat Hijau sebelum melaksanakan di dalam organisasi. Rangka kerja ini mengandungi dua komponen, lima sub-komponen dan tujuh belas perkara. Matlamat model ini adalah untuk mengenal pasti sikap pengguna mengenai Penyediaan Teknologi Maklumat Hijau di universiti. Pengguna UTM seperti pelajar, kakitangan akademik dan kakitangan admin akan terlibat dalam pengesahan model ini. Pengesahan model akan dijalankan dengan mengedarkan soal selidik sebagai satu kaji selidik.

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## **CHAPTER 1**

### **INTRODUCTION**

#### **1.1 Introduction**

Nowadays, our current global environment undergoes changes and give negative impacts to the world which calls this phenomena as Greenhouse Effects. The greenhouse effect occurred because of the global warming. The gas emissions such as CO<sub>2</sub> induced a high consequence in global warming (Wolf and Beck, 2009). This gas increases the temperature in atmosphere gradually every year, which impact our earth's climate patterns and gives adverse consequence to people, oceans and ecosystems.

The advancement of IT usage, such as create changes in business flow, which mean from traditional business into e-business and traditional economy into the e - economy. Enterprises, governments and societies ought IT to improve their standard of living and helps their work become easier. However, most people do not realize that IT is one of the reasons that give the negative impacts to our environment (Murugesan, 2008). The unplanned of IT manufacturing, the uncontrolled of IT electricity consumption and the unsupervised of IT disposal will disturb our environmental sustainability.

In contrast, even though IT give problems for our earth, but it also can be as a problem solver to help our earth from hazard. The combination terms between ITs and the environment to produce a new solution in assisting our world to decrease the environmental problems. The new role of IT now focused on how the usage of ITs can be sustainable and enable a business sustainability strategy (Molla, 2009). Researcher identified this situation with the term “Green IT”.

As a basic, Green IT is one of the best initiatives which are effectively giving the very minimal impact to our environment. One of the reasons is Green IT can reduce the greenhouse gas emissions (GHG) and total carbon footprint. The aim of Green IT is generally to achieve the energy efficiency, emission reduction, pollution prevention and environmental footprint (Molla, Vanessa and Siddhi, 2009). Energy efficiency can be affected by reducing the electrical energy power consumption of IT equipment such as utilize a computer or laptop during non peak hour, which indirectly help the IT’s greenhouse gas emissions reduction. By managing the disposal of IT equipment such as empty ink printer cartridges, old computer or computer battery properly can help the pollution prevention and environmental footprint. The method of 3R’s (Reuse, Refurbish and Recycle) can be applied in this situation (Murugesan, 2012). The context of greenness covers the IT lifecycle product which is from sourcing, operations, services and end of IT life management (disposal). Every part of IT lifecycle need to be concerned to achieve the Green IT objective efficiently.

For this research, researcher focused on the Green IT Readiness which discussing the capability of preparedness within the individuals, systems, or organizations in facing a situation and carry out the plan into actions for the IT technical infrastructure, IT human infrastructure and IT management infrastructure. Hence, researcher will only focus in attitude element which is one of the components in Green IT Readiness Model proposed by Molla.

## 1.1 Problems Background And Motivation

As we know, over the years, information technology (IT) plays an important role in improving our productivity of work, economy and social life. With the help of technology, including internet, sophisticated mobile phone, telecommunication and sophisticated information system applications causing people unable lives without IT in their everyday work. Nevertheless, in the current century of highest technologies most people did not think about the environment anymore. Most people did not realize that IT has been contributing to environmental problems such as the high total amounts of electrical energy consumption of IT equipment day by day contribute the IT's greenhouse gas (GHG) emissions (Wabwoba et al., 2012). The growing accumulation of GHGs causes changes in our world and indirectly cause the global warming phenomena. This phenomena contribute the changes in global climate patterns, such as storm, drought, flood, and other weather related disasters which are more frequent in some countries.

As a result, in order to overcome this phenomena, the governments, enterprises and community play roles in combating global warming and building a sustainable environment with a greater awareness and a growing commitment to address environmental problems. IT can act as the main change drivers and innovative ways for us to be part of the solution for environmental sustainability to become greener or we can call this process as Green IT. Malaysia has shown some effort of Green IT initiatives. Agencies likes Ministry of Energy Green Technology and Water Malaysia (MEGTW), Green Technology Corporation, MAMPU, PIKOM, MDeC, and Hi-Tech Padu are among the government and private agencies that have shown some commitment towards a sustainable environment through sustainable ICT adoption (Eladwiah, 2011).

Presently, UTM has launched the Green Campus program as a sustainable initiatives in becoming the part of the national environmental initiative and support the GHG target reduction 40% by 2020 (Tenth Malaysian Plan). Nevertheless, UTM focus on green transportation concept, green environment and green friendly infrastructure and building. But, the concept does not comprise deeply on Green IT. Thus, this research is important to help UTM practicing Green IT in daily activity.

Before, Green IT Readiness Model and Framework have been developed such as GITAM Model, G-Readiness Model, GITOL Framework, G-Readiness Framework, Nomological Structure of G-Readiness and Extended Molla's Green ICT Readiness. These models and framework contain different purpose, but have the same aim. Based on these models, Molla founded that the Green IT Readiness needs five elements (attitude, policy, government, technology and practice) as an assessment of an organization's to accept the Green IT implementation. However, without a clear understanding on Green IT Readiness, organizations will get the adverse results of Green IT implementation because of an ad-hoc approach. Therefore, this research is important for evaluating the UTM community understandability on the importance of Green IT Readiness.

Based on the above reasons, in this research, researcher intends to make the End Users Attitude of Green IT Readiness Model for evaluating the UTM end users attitude about Green IT issue. Therefore, the components of attitude and the items for each component will be analyzed in order to develop the model.

## **1.2 Research Questions**

This research is conducted as an attempt to find the answers to some problems, relating to:

- How to develop the End Users Attitude of Green IT Readiness Model in UTM?
  - a. What are the components of attitude?
  - b. What are the items for each component of attitude?
- What is the current situation of the end users' attitude of Green IT Readiness in UTM for applying the Green IT?



### **1.3 Research Objectives**

The aim of this research is to find out the current situation of the end users' attitude of the Green IT Readiness in UTM for applying Green IT. To achieve that research aim, the following objectives are set:-

- i. To determine the components that need to be considered in the end users' attitude of Green IT Readiness.
- ii. To identify the items of each component that need to be considered in an end users' attitude of Green IT Readiness
- iii. To recommend the best practice for the components in an end users' attitude of Green IT Readiness that university can follow.

### **1.4 Scope of the study**

To achieve that objective, the following scopes are set:-

- End Users (Student, Academic Staff, Admin Staff) as a respondent to a survey about Green IT Readiness.
- UTM Skudai as a location for representing university scope
- Analyze existing Green IT Readiness Model to find the attitude components and items

### **1.5 Significance of the study**

The findings of this study are important to help UTM to find out the importance of environmental issues and using Green IT for solving. Moreover, this study is important because it can help university by providing a clear understanding about Green IT Readiness and aware about how important is it to be the environmentally responsible person. Indirectly, this study can give positive impacts to UTM and our world.

### **1.6 Chapter Summary**

This chapter has described the research introduction; research problems background and motivation, research questions research aim and objectives, scope of the study and significance of the study. The expectation is that, by conducting the project successfully, the objectives of the project can be achieved.

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