MICHELLE VOON XIN YING BTMI 2016 UTeM

EFFECTIVENESS OF CLOUD COMPUTING IN UTeM CITY CAMPUS

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‘I/We, hereby declared that I/We had read through this thesis and in my/our opinion that this thesis is adequate in terms of scope and quality which fulfill the requirements for the award of Bachelor of Technology Management (Technology Innovation)

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DECLARATION

"I admit that this report is the result of my own and quotes that for everything I have explained the sources."

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DEDICATION

This report is dedicated to my beloved parents, friends and supervisor who have provided encouragement and guidance all the way during the completion of the report.

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ABSTRACT

Cloud computing is becoming an adoptable technology and have a significant impact on the educational environment in the future. It also allows the student makes learning and adapting to these new technologies easier and convenience to support their study. However, educational institutions are interested in using cloud computing capabilities, but they do not know where to expect changes when choosing for the cloud computing concept. Therefore, the purpose of this is to investigate the awareness level of FPTT's students toward cloud computing, to identify the effectiveness of cloud computing toward the FPTT's students and to identify the dominant effectiveness of cloud computing in FPTT's students. There are several effectiveness of cloud computing such as cost effective, flexibility learning and security. The data were collected using questionnaire from 150 respondents in UTeM City Campus, Malacca. The results have been analyzed using Pearson's Correlation to study the effectiveness of cloud computing toward the FPTT's students. The result shows that the flexibility learning has the most significant toward FPTT's students. Therefore, we can conclude that cost effective and security is not a major effectiveness toward FPTT's students.

ABSTRAK

Cloud computing adalah menjadi teknologi dilaraskan dan mempunyai kesan yang besar ke atas persekitaran pendidikan pada masa hadapan. Ia juga membolehkan pelajar menjadikan pembelajaran dan menyesuaikan diri dengan teknologi baru ini lebih mudah dan mudah untuk menyokong kajian mereka. Walau bagaimanapun, institusi pendidikan berminat untuk menggunakan keupayaan cloud computing, tetapi mereka tidak tahu di mana untuk mengharapkan perubahan apabila memilih untuk konsep cloud computing. Oleh itu, tujuan ini adalah untuk menyiasat tahap kesedaran pelajar FPTT ke arah cloud computing, untuk mengenal pasti keberkesanan cloud computing ke arah pelajar FPTT dan mengenalpasti keberkesanan dominan cloud computing ke arah pelajar FPTT ini. Terdapat beberapa keberkesanan cloud computing seperti kos efektif, pembelajaran fleksibiliti dan keselamatan. Data yang dikumpul dengan menggunakan soal selidik daripada 150 responden di UTeM City Kampus, Melaka. Keputusan telah dianalisis menggunakan kaedah korelasi Pearson untuk mengkaji keberkesanan cloud computing ke arah pelajar FPTT ini. Hasil kajian menunjukkan bahawa pembelajaran fleksibiliti mempunyai yang paling penting ke arah pelajar FPTT ini. Oleh itu, kita boleh menyimpulkan kos yang berkesan dan keselamatan bukan keberkesanan utama ke arah pelajar FPTT ini.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBRAVIATIONS

%	-	Percentage
BPOS	-	Business Productivity Online Standard Suite
BTEC	-	Bachelor of Technopreneurship
BTMI	-	Bachelor of Technology Management (Technology Innovation)
BTMM	-	Bachelor of Technology Management (High Technology Marketing)
FPTT	-	Faculty of Technology Management and Technopreneurship
GAE	-	Google App Education
IaaS	-	Infrastructure as a Service
IM	-	Instant Messaging
IT	-	Information Technology
PaaS	-	Platform as a Service
PSM	-	Projek Sarjana Muda
SaaS	-	Software as a Service
SPSS	-	Statistical Package for Social Science
UTeM	-	Universiti Teknikal Malaysia Melaka

LIST OF APPENDICES

CHAPTER 1

INTRODUCTION

1.1 Introduction

Cloud Computing has become more convenience and more efficiency in educational institution. Blooms taxonomy of teaching can now is made easy with support of cloud computing where you get everything and now the teaching methodologies like chalk - blackboard, physical interaction took a new transition to online and is growing fast than ever.

According to National Institute of Standards and Technology NIST (2011), Cloud Computing is a model for enabling widespread, convenient, on-demand network access to a shared pool of deploy the computing resource such as networks, servers, storage, applications, and service. It can be rapidly provisioned and released with minimal management effort or service provider interaction.

Cloud computing is integrates teaching and research resources distributed over the multi locations by utilized existing conditions as much as possible to meet the demand of Faculty of Technology Management and Technopreneurship (FPTT) students. The cloud computing with a wide spread such as area network, generally the intent from which remote computing resources are shared. The benefit of the cloud computing in Universiti Teknikal Malaysia Melaka (UTeM) institution is reduces the costs, flexibility, personalized learning, provides scalability, private and security and improves efficiency (K. Srinivasa, & Ratna, 2013). The cloud computing users can access database resources via the internet from anywhere, anytime and anyplace, for as long as they need. They store it all on the ‘cloud’ of the

Web, or a shared data center and without any worrying about maintenance or management of actual resource.

Meanwhile, in terms of service model, NIST distinguishes cloud into three categories, namely as Software as a Service (SaaS), Platform as a Service (PaaS), and Infrastructure as a Service (IaaS). SaaS is the capability provided to the consumer in this highest level is to use the provider's applications running on a cloud infrastructure. The applications are accessible from various client devices through a thin client interface such as a Web-browser. Web-based e-mail, SalesForoe.com, Google Docs, Google Mail are examples for SaaS. In addition, PaaS is the capability provided to the consumer in this intermediate level is to deploy onto the cloud infrastructure consumer-created or acquired application developed using programming languages and tools supported by the provider. Google App Engine is the example for Platform as a Service. IaaS is the capacity provided to the consumer is to provision processing, storage, networks, and other fundamental computing resources where the consumer is able to deploy and run arbitrary software, which can include operating systems and application. Amazon EC2 is an example for IaaS. Thus, the three service model to make the education institution more effective and efficiency (Mell & Grance, 2009).

The cloud computing has increased the elasticity of the resources without paying the premium for large scale. It means the instructor and learner with the largest volume tasks can achieve the desired results quickly without any investment (Armbrust, M. Fox, 2009). With low financial budget and limited available resources, the educational sector can become level one beneficiary of cloud computing.

1.2 Problem Statement

Nowadays, the Cloud Computing carries important in educational institutes for higher studies. Cloud Computing is defined as a type of computing that relies on sharing computing resource rather than having local servers or personal devices to handle applications. With the cloud computing, the teaching methods are changed. It becomes more flexibility learning, cost effective and security.

The process of purchasing, maintaining, and monitoring Computing assets requires a large investment of financial and manpower resources for any educational institution. An option which centralizes computing assets and can lower the costs and manpower requirements for the organizations is the use of centralized computing assets provided as cloud computing. Currently, many educational institutions are interested in using cloud computing capabilities, but they do not know where to expect changes when choosing for the cloud computing concept (Jeffrey, 2010).

According to F.F. Moghaddam (2013), one of the most vital hurdles in cloud adoption in Malaysia is the lack of competent cloud engineers, knowledgeable cloud lawmakers, and service consumers. Reportedly, 20 percent of Malaysian users haven't heard of cloud computing. Means, they are lack of awareness and the effectiveness when using cloud computing.

Furthermore, the most important factor that faces adoption cloud computing not in educational institutional only but in all industries. The management of educational institutions still worries about their data confidentiality and privacy. They are still do not trust provider's claims about security issues (Shamsul, 2013).

UTeM was adopt cloud computing to enhance the availability of business applications, storage, easy access to compute and networking resources with the minimizing cost. UTeM also want to make the infrastructure resources available for research projects more quickly, more effective and more efficiently. UTeM Official Learning Management System (uLearn), Gateway to UTeM open educational resource (OCW), UTeM Massive Open Online Course (MOOC), Malaysia-Massive Open Online Course (MALAYSIA MOOC), Learning Contents Management System

(LCMS) and UTeM Web Conferencing System (BBB) are examples that UTeM used the cloud computing to enhance the educational institution performance. Therefore, the researcher executes this research due to study the awareness level of FPTT's students toward Cloud Computing and identifies the effectiveness of Cloud Computing in the FPTT's students.

1.3 Research Question

The research questions, which served as a guide to the research, are:

i. What is the awareness level of FPTT's students toward Cloud Computing?
ii. What is the effectiveness of Cloud Computing toward the FPTT's students?
iii. What is the dominant effectiveness of Cloud Computing in FPTT's students?

1.4 Research Objective

i. To investigation the awareness level of FPTT's students toward Cloud Computing.
ii. To identify the cost effective of Cloud Computing toward the FPTT's students.
iii. To identify the effectiveness of flexibility learning in Cloud Computing toward the FPTT's students.
iv. To identify the effectiveness of security in Cloud Computing toward the FPTT's students.
v. To identify the dominant effectiveness of Cloud Computing in FPTT's students.

1.5 Scope

This study focuses on the effectiveness of Cloud Computing toward FPTT's students only, but not in others educational institution. In this research is to study the effectiveness of flexibility learning, cost effective and security of Cloud Computing toward the FPTT's students. Other aspect such as effectiveness of the Cloud Computing in IT industry, business, and medical industry and so on will not be covered in this research.

1.6 Limitation

In this research paper, there are several limitation has been identified. Firstly, this research is focused on the FPTT areas with specific location; choose for examining the effectiveness of Cloud Computing toward FPTT's students. The limitation would be the lack of cost or budget and duration of the time to conduct this research. Second, the researcher assuming the respondents answers with logical and honestly that variety of category respondent will be taken to ensure this research becomes more precise and reliable. Thus, the questionnaire will be applied as a research strategy in this case.

1.7 Hypothesis

Consistent with the objectives that had been constructed, there are two possible hypothesis developed for testing. The hypothesis is mark as H0 represent hypothesis 0 and H1 represent hypothesis 1. The following alternative hypothesis will be tested for the purpose of the study:

H0: There is no cost effective in Cloud Computing toward the FPTT's students.
H1: There is cost effective in Cloud Computing toward the FPTT's students.
H0: There is no effectiveness of flexibility learning in Cloud Computing toward the FPTT's students.
H1: There is effectiveness of flexibility learning in Cloud Computing toward the FPTT's students.
H0: There is no effectiveness of security in Cloud Computing toward the FPTT's students.
H1: There is effectiveness of security in Cloud Computing toward the FPTT's students.

1.8 Importance of the Study

The main focused on examining the effectiveness of Cloud Computing toward FPTT's students. In this research, the important is to found out the knowledge and understanding by FPTT's students towards the effectiveness of cloud computing. In addition, it can serve as a guideline to the authorities of Cloud Computing is important situated in Malaysia for the purpose of finding out the most appropriate way to continuously enhance and improve their management function. Besides, this research also needs to identify the effectiveness of cost effective, flexibility learning and security of Cloud Computing toward the FPTT's students. From this research, will knowing the problem and realize that FPTT's students expect which is provided from them, so, it is important to improve the Cloud Computing in future education sector.

1.9 Summary

Cloud Computing is a relatively new concept in the education institution. Cloud Computing is a basically is a single system that is on the Web that can be store and run the applications. It's will help the learner to reduce the hardware input and with a flexible network teaching platform. Internet is the resource where we can convert Cloud Computing; it can transfer the advanced software, hardware, educational resource and service to the learner in even the most poverty and remote areas, it still can gain the benefits through the Cloud Computing. Besides that, the Cloud computing without the need for advanced IT expertise and reduces the currently strained education system budgets (K. Youry, 2010). In this chapter, introduction about the chapter is highlighted the effectiveness of Cloud Computing toward the FPTT's students, as it may help to achieve better Cloud Computing in the educational sector.