

A TRUST MODEL FOR BUSINESS TO CUSTOMER CLOUD E-COMMERCE

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To my beloved Mother and Father

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ABSTRACT

Cloud Computing is a relatively new computing approach which promises enhanced scalability, flexibility and cost-efficiency. In practice, however, there are many uncertainties about the usage of this way of provisioning IT resources. Concerns about evolving dependencies and security issues have arisen. As online commerce is dependent on reliable, secure online stores, it is vital to take those concerns into account. Users of cloud computing systems always concern about their private data. Securing the cloud is a multidisciplinary challenge, as cloud computing can be thought of as a different way to deliver and use all of the same types of information technology people use today. Thus making user to trust in cloud computing is the great challenge of adopting cloud computing. Nowadays most of Ecommerce web sites intend to use cloud computing facilities to increase their functionality and their customer's attraction. So identifying the factors that influence E-commerce customer's trust on cloudy E-commerce facilities is critical for the new type of businesses.

ABSTRAK

Pengkomputeran awan adalah pendekatan pengkomputeran yang agak baru yang menjanjikan skalabilitas dipertingkatkan, fleksibiliti dan kos kecekapan. Dalam amalan, bagaimanapun, terdapat banyak ketidaktentuan tentang penggunaan cara ini, peruntukan sumber IT. Kebimbangan mengenai kebergantungan berkembang dan isu-isu keselamatan telah timbul. Sebagai talian perdagangan adalah bergantung kepada dipercayai, kedai dalam talian yang selamat, ia adalah penting untuk mengambil mereka kebimbangan kira. Pengguna sistem perkomputeran awan sentiasa kebimbangan mengenai data peribadi mereka. Mendapatkan awan itu adalah satu cabaran yang pelbagai disiplin, pengkomputeran mega boleh dianggap sebagai cara yang berbeza untuk menyampaikan dan menggunakan semua jenis yang sama orang teknologi maklumat menggunakan hari ini. Oleh itu membuat pengguna mempercayai dalam perkomputeran awan adalah cabaran besar menerima pakai perkomputeran awan. Pada masa kini kebanyakan laman web E-dagang berhasrat untuk menggunakan kemudahan perkomputeran awan untuk meningkatkan fungsi mereka dan daya tarikan pelanggan mereka. Jadi, mengenal pasti faktor-faktor yang mempengaruhi kepercayaan pelanggan E-dagang pada kemudahan E-dagang mendung adalah kritikal untuk jenis perniagaan yang baru.

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CHAPTER ONE

PROJECT OVERVIEW

1.1 Introduction

Applications are changing to use cloud computing. The shift from traditional software models to the Internet has started over the last 10 years. Cloud computing refers to software as a service and also hardware and operation systems in online servers that provide those services. (Armbrust, 2010). All internet users have already used cloud computing services without noticing that. Gmail and Google Docs are two prime examples.

Cloud Computing is a relatively new computing approach which promises enhanced scalability, flexibility and cost-efficiency. In practice, however, there are many uncertainties about the usage of this way of provisioning IT resources. Concerns about evolving dependencies and security issues have arisen. As online commerce is dependent on reliable, secure online stores, it is vital to take those concerns into account. The hybrid architecture combines traditional IT service provisioning with the usage of internet-based services. This approach would help to harness the strengths of Cloud Computing, while minimizing the impacts of its potential risks.

Cloud computing has the potential for tremendous benefits, but wide scale adoption has a range of challenges that must be met. Privacy and security are the

most important issues in using cloud computing (Pearson, 2010). Users of cloud computing systems always concern about their private data. Securing the cloud is a multidisciplinary challenge, as cloud computing can be thought of as a different way to deliver and use all of the same types of information technology people use today (Donovan, 2010). Thus making user to trust in cloud computing is the great challenge of adopting cloud computing.

1.2 Problem Background

Trust issues become important when the data centers are decentralized and the resources are distributed beyond the perimeter, which is especially true in the Cloud Computing scenario. Security is a main concern with cloud computing. The question posed by many is, “if their information is being shared by anyone else on the same cloud resource?”(Sumter, 2010). Control and ownership also are big deal (Khaled, 2010). People trust a system less when they don't have much control over their assets. For example, when someone withdraws money from an automatic teller machine (ATM), they trust that the machine will give them the exact amount because it's under their control. When people make a deposit using the same ATM, they usually don't have the same level of trust because they are losing control over their money, they don't know what happens after the ATM consumes it. Similarly, the more control consumers have over the data consigned to a cloud, the more they'll trust the system. There is also a variation of trust, depending on the ownership of data assets. When enterprises consign their data to cloud computing (data representing both their own interests and those of their clients), it creates two folds of a complex trust relationship. First, the enterprise must trust the cloud provider. Second, the enterprise must ascertain that its clients have enough reason to trust the same provider.

The integration of cloud-based services in various domains is already quite common. Payment services and user tracking are widely used in online commerce. Particularly new payment services with their user base help retailers to enter new

markets. Concerns about data privacy and security and the dependency on connectivity are major disadvantages. As the provider is an independent company, issues connected to the legal basis and standardized SLAs could arise. Besides that, a retailer needs to evaluate the economic stability of the supplier.

Security plays a central role in preventing service failures and cultivating trust in cloud computing. In particular, cloud service providers need to secure the virtual environment, which enables them to run services for multiple clients and offer separate services for different clients. In the context of virtualization, the key security issues include identity management, data leakage that may be caused by multiple tenants sharing physical resources, access control, virtual machine (VM) protection, persistent client-data security, and the prevention of cross-VM side channel attacks. The other issue is transparency. The consumer's perception is that a cloud is generally less secure than an in-house system. But better transparency could help address this issue. Data stored in a cloud provider's devices isn't located on a single machine in a single location or country. Rather, the data is stored and processed across the entire virtual layer. There are two issues involved in transparency: one is the physical location of the storage and processing sites, and the other is the security profiles of these sites.

Establishing confidence between the customers' and the Cloud vendors' community is also important. How to support users in selecting trustworthy Cloud providers using trust and reputation concepts? (Mahbub Habib, 2010). Lack of reputation of cloud computing service providers becomes a barrier to users to engage with cloud computing systems. Because the concept of software as a service through cloud computing is new, service providers cannot make the reputation for themselves such as another online service yet.

When it is not clear to individuals why their personal information is requested, or how and by whom it will be processed, this lack of control and lack of visibility of the provider supply chain will lead to suspicion and ultimately distrust. There are also security-related concerns about whether data in the cloud will be

adequately protected. As a result, customers may hold back from using cloud services where personally identifiable information is involved, without an understanding of the obligations involved and the compliance risks faced, and assurance that potential suppliers will address such risks. This is particularly the case where sensitive information is involved (Pearson and Benameur, 2010).but the most important problem is the lack of standard trust model in cloud B2C E-commerce.

1.3 Problem Statement

This research aims at responding to a question on developing the trust model for using cloud computing in E-commerce. Therefore, the problem statement for this research is: “How to develop trust model for B2C cloud E-commerce”

There are 3 sub-questions that are based on the above main question:

1. What is trust in E-commerce?
2. What are trust factors in cloud computing?
3. What are trusts factors in cloud E-commerce services from e-commerce user’s aspect?

1.4 Project Objectives

The objectives of the research are:

1. To investigate current existing risk in cloud E-commerce.
2. To investigate the current trust model in cloud computing and e-commerce.
3. To propose a model from combination of current model for increasing user trust in B2C cloud E-commerce.

4. Testing the proposed model by survey.

1.5 Project Scope

1. Focus on the risk of adopting cloud computing in current company that they used it.
2. To identify trust factor in current company that provide commerce as a service using cloud computing.
3. Focus on developing a model for trust in cloud computing (commerce as a service) for online media and music store industry.

1.6 Importance of the Project

The use of cloud computing and distributed systems is growing so fast. The technology that the organizations used for adopting distributed systems is also improved rapidly. But the lack of clear standard in trust issue of cloud computing is obvious.

The development of new trust model in cloud E-commerce can be useful for both users and cloud service providers to cooperate with each other. It's also help providers to present the newer facilities and services without concerning about the users that they don't trust them.

1.7 Chapter Summary

As for the summary, this chapter provides a brief overview about the cloud computing and its trust issues. The background of the problem was highlighted and has been discussed in this chapter to give a preface of the research as well as to explain the rationale of proposing the research. The research objectives were also listed followed by the scopes of work. The importance of this research has also been explained giving value to the study. By developing this research successfully, the objectives and aims of the project could be achieved.

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