

## AN EXPERIMENTAL APPROACH TO BUILD CONSUMER TRUST USING CLOUD TRUST LABEL

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### Abstract

The lack of complete transparency in cloud related products has created a great sense of confusion and inefficiency among the consumers to choose the right product and make their buying decisions. As a result of this phenomenon the purchase or adoption of cloud computing has become even more difficult. This process of cloud trust labelling will provide relevant information to buyer to make the right decision/Choice thereby the decision making is made easier. This paper completely investigates the result of Cloud Trust labels and the consumer's perception towards it to complete this research, a sample of 227 was used, all of business decision makers served as a sample. The data was collected before the exposure of cloud trust based label and after the exposure of the business trust label. And analysing the perceptions of each one before and after exposure and to examine and know the changes in perception too. The cloud trust labels that have Positive information contained has positive Perceptions and attitude. Correspondingly, negative perceptions had come when the Cloud Trust labels have negative information in them.

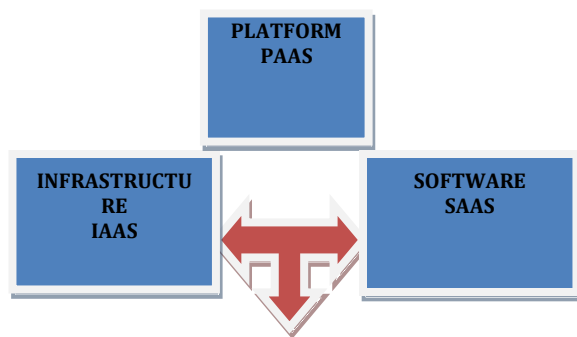
**Keywords:** Cloud Computing, Trust, Cloud Trust Label.

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### INTRODUCTION

In this recent era of development and enhancement of technology there is a lot of interest growing in cloud computing services and investment in them.

The 3 levels of cloud computing services:



Now – a – days there is an abrupt growth in cloud services, Cloud computing is expected to affect 50% of the information Technology outsourcing deals. As an inevitable part of business, Cloud trust ability is so much important because the online environment can have uncertainty, risks faced and thus making cloud trusting as a vital one. Trustworthiness measured using traditional methods deal with only high level of information only which is problematic in the domain of cloud. It is difficult for every buyer to understand this and that is the reason for the emergence of alternative trust building mechanism which includes development of frameworks and models identifying the trustworthiness of the cloud providers.

User's data security is been given a lot of importance in current research work. Correspondingly, the aspect which is given less importance is customer's trust while using internet marketplace or online shopping. Currently the work focuses on the trust cloud based service provider's issues. The emotions of users are

discussed in the scope of the problem and suggestions on whether trust issues can be solved are examined in the study.

### LITERATURE REVIEW

Cloud computing and its technologies are the current topic for increased trend in research.

The trust in products of cloud and its related technologies reflects willingness in vulnerability depending on a particular technology to do our tasks. In this case the term willingness refers to the trustworthiness of the product. Trustworthiness is actually a mixture of perceptions that includes benevolence, integrity and ability.

Ray Wang et al. recommend an approach 'bill of rights' [13]. Here the client and vendor relationship with respect to cloud computing is signified here. Here, a unique blend of trust and communication must be present between both of them to deploy the cloud correctly.

A very important aspect of creating a good partnership is by making and upholding trust.

At the start, a degree of transparency must be present among the cloud vendors.

Many vendors are skeptical to disclose some informations or data in the beginning, but seeing the consequences and benefits of business, understand that transparency is the best approach.

Drawbacks and expense benefit analysis might be adequate to remove the distrust but this cannot actually create a trust. The knowledge based stronger than the other calculative alternative and this creates a strong base which will help take risk and also enriches the bonding between the consumer and the CSP. Whatever current method is used is not successful in predicting the cloud trust ability.

The communication, procurement and transactional activities actually develop the trust in cloud computing as per Garrison and colleagues.

Risk due to basic operations is present inherently when cloud platform is considered which is well understood by most of the clients. Vendors can give a basic outline of the predictable and potential risks and the ways to manage them.

Generally, services provided by cloud vendors are shown in the form of the service level agreements SLAs. They consist of functional and non-functional facets of the services provided. Various providers giving identical services have SLAs which are not sufficient from the customer's trust point of view. As a result, they face the issue of selecting a trustworthy cloud provider based on SLA.

**THE IMPACT OF CLOUD COMPUTING BASED ON TRUST MECHANISMS**

Trust Mechanisms	Example
Website design	The design, colours and aesthetics impact the perceptions of trustworthiness of online vendors.
Feedback Reputation systems	Comprehensive score reflecting an overall opinion or an aggregate of scores on several major aspects of performance.
Third Party Assurances	Third party attestation, certification and/or assurances seals e.g. ISO/IEC 27001.
Cloud transparency mechanism	<ul style="list-style-type: none"> <li>Publicly accessible self-assessment of security controls e.g. Cloud Security Alliance (CSA) Security, Trust &amp; Assurance Registry (STAR).</li> <li>On-demand access to information on "elements of transparency" e.g. CSA CloudTrust Protocol.</li> </ul>
SLA-verification based trust	Quality of service monitoring based on pre-defined SLA service levels.

**PROPOSED MODEL**

To build cloud trust ability it is necessary that all the information must be made transparent and give enough information on the very same so that the buyer can get a good idea on that and break any existing stereotypes and actually give sense and meaning to their decisions. The proposed label actually contains Eighty one components in them including the cloud service providers which can give cloud transparency. This paper deals how the labels can impact on the perceptions of the consumers. A new method for implementation is necessary to boost the reliability and trust of customers for Cloud providers. This paper summarizes how trust label can be used to improve the trustworthiness of Cloud services and help them inculcate trust to the customers.

**STUDY DESIGN**

To examine the effect of CTL on consumer's idea of trust two labels are used one positive and another negative. The participants were picked and given any one of the conditions and the survey was done. They were presented with the fictional or non existing description of a company called 'Cloud Solutions' and a cloud based CRM. The information in the labels is actually decided Via Delphi Method. We assume:

- H1a - The CTL will have its effect on the customer's perception.
- H1b- The CTL will impact consumer trust in the services rendered by the cloud service such that the exposure will label to positive information will definitely increase the trust.
- H2a - The CTL will affect the customer's trust when it is exposed to positive information's there is a positive perception and when exposed to negative ones , there is an decrease in the positive perception.
- H2b - The CTL will so much impact the customer idea of trusting the Clouds Service providers so that they will be have trust when positive label is given and similarly when negative labels are given, trust will reduce.

The participants assigned with positive conditions gave their results to be positive and in order they have developed a positive perception and the participants assigned to negative conditions have developed a negative perception.

**DISCUSSION**

This paper mainly aims to know how the trust label can bring about a perception in a buyer or a customer. Here, potential customers are given reliable services and security information by Cloud Trust labels which in turn affect the decision making. The result emphasises that cloud computing trust level labels can be a significant aspect for communicating trust to customers. As hypothesises the label with positives has positive perception from the buyer and the label with negatives has negative perception from the buyers.

**LIMITATIONS**

The current research has been done using the analytical design, this method was actually accurate for the verification of the study. However these experimental designs presented has lack in the original aspects of field study and this has been done in an on the total effect of the label on the trust related consumer ideas. In normal environment setting, Cloud trust labels are populated with the positive and the negative information rather than the simple positive and negative conditions presented here.

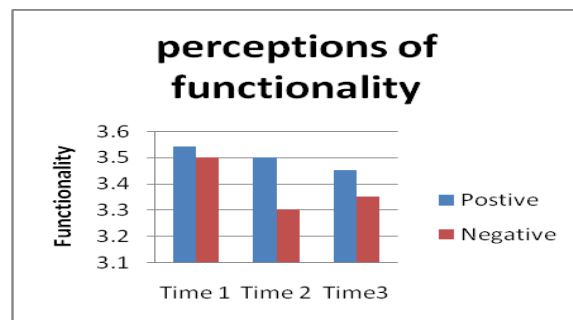


Figure 1

Figure 1 and Table 1 which show that view of usefulness decline after some time for both conditions while view of support and unwavering quality increment for the positive name condition and diminishing for the negative name condition.

Table 1: Impression of usefulness

	Time 1	Time 2	Time3
Postive	3.54	3.5	3.45
Negative	3.5	3.3	3.35

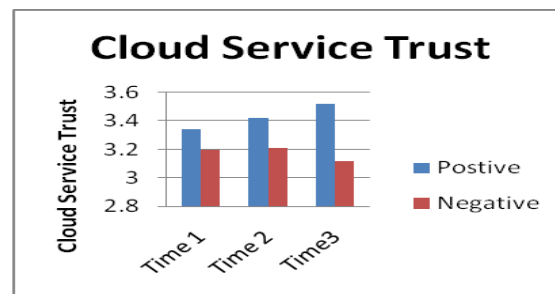


Figure 2: Cloud Service expectation

Figure 2 outlines the expansion over time for members presented to the positive name and a decline after some time for members presented to the negative mark. in real time demonstrate were no huge contrasts between the positive and negative conditions at time 1 which compares with Time2 and Time3.

	Time 1	Time 2	Time3
Postive	3.34	3.42	3.52
Negative	3.2	3.21	3.12

Figure 2: Cloud Service expectation

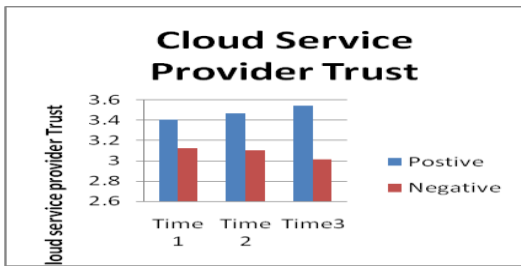


Figure 3: Cloud Service contributor conviction

	Time 1	Time 2	Time3
Positive	3.4	3.46	3.54
Negative	3.12	3.1	3.01

Figure 3: Cloud Service contributor conviction

members in the positive condition appeared increments in trust in the Cloud service provider trust after some time while those in the negative condition demonstrated declines in trust on different time interval.

**CONCLUSION**

Cloud computing is actually enabling us to rethink our conceptualization of data and the technology ownerships too. Along with the rights and usages, it is also changing the relationship that we have with our technology and also the technology provider. Trustworthiness is so important and it actually makes great significant decisions and variations as said in our research.

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