



ISSUES AND FRAMEWORK OF E-COMMERCE AND CLOUD COMPUTING MODELS

K.Narmatha1, V.P.Muthukumar2,

1M.Phil Full time Research Scholar, PG & Research Department of Computer Science1

2Head of the Department, PG & Research Department of Computer Applications2

Vivekanandha College of Arts & Sciences for Women (Autonomous)

Tiruchengode, Namakkal-637 205,

Tamilnadu,India.

narmadharajkt@gmail.com1,

rajiperiasamy@gmail.com2

ABSTRACT- Cloud computing is a hot technology now, is a new business model. The popularity and the application areas of the cloud computing has significantly increased since it was proposed by Google in 2007. Cloud computing includes set of resources and services to be shared among users via Internet. The use of cloud computing to businesses in many industries, especially e-commerce has brought new opportunities. For doing business in this communication era, web is the best medium. For business owners and consumers, online businesses broke down the barrier of time and space compared to the physical shop or office. Cloud computing can provide good economic efficiency for the application of business enterprise E-commerce.

KEYWORDS-Cloud Computing, E-Commerce, Models, Framework, Issues.

1. INTRODUCTION

E-commerce came into existence since late 1970s. It was supposed to provide how the business transactions are made electronically through EDI (Electronic Data Interchange). ETF (Exchange-Traded Fund) cloud computing and e-commerce are both widely used because of their cost effectiveness. Enterprises' developing e-commerce needs to invest resources in hardware, software system established by the person with a certain expertise to run and maintain.

The development of Ecommerce makes more new competitions among the enterprises. It will supply the products and service to consumers through the Internet. This called E-commerce. It bring the huge profit to enterprises, however, the Ecommerce cost is huge. Integration of cloud computing and E-commerce has a significant effect on organizations in all aspects. In other words, cloud computing is a transformed way for business enterprises by which they may create their

infrastructures and applications. E-commerce is a popular and growing Web application which enables customers to achieve a variety of purposes and services. Electronic commerce lets companies integrate internal and external business processes through information and communication technologies. Companies conduct these business processes over intranets, extranets, and the Internet.

E-commerce lets businesses reduce costs, attain greater market reach, and develop closer partner relationships. Numerous e-commerce companies have created very profitable businesses since pioneering e-commerce traders (such as Amazon.com) emerged. However, using the Internet as the underlying backbone network has led to new risks and concerns. Cloud computing creates an extraordinary chance for business enterprises to be able to concentrate more on their abilities by using it.

2. CLOUD COMPUTING

Cloud computing is an information technology service model so that computing services (hardware, software) are given on-demand to the customers. Of course, these services are located over the network and independent of the place and devices.

The concept of cloud computing is Appeared not long ago, while a number of IT companies and related researchers get into this field of research and exploration, and obtain preliminary results.

Cloud computing includes deploying groups of multiple remote servers and software

networks that permit different kinds of data sources which can be uploaded for real time processing for the generation of results without the need to store (processed) data on the cloud.

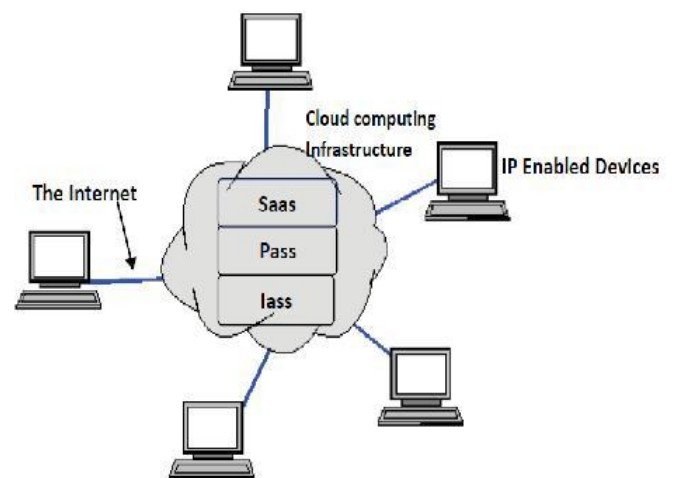


Figure1: cloud computing infrastructure

2.1 cloud technology service models

There are three basic categories of cloud service models are used. They are as follows

1. Software-as-a-Service (SaaS)
2. Platform-as-a-Service (PaaS)
3. Infrastructure-as-a-Service (IaaS)

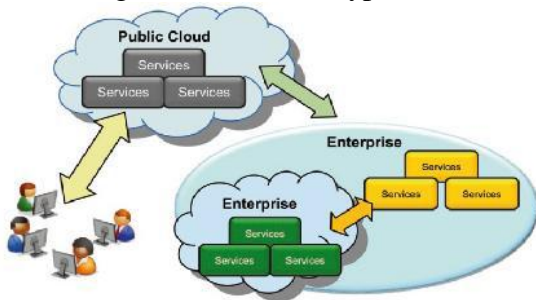
2.2 Expansion Models and Cloud Deployment

At the present, four types of cloud computing services are available as following:

1. Private

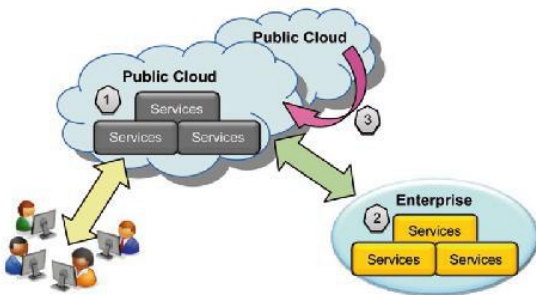
A private cloud or internal cloud is a type of cloud computing in which the provided services are able to be given to a few people. The delivered services provide the features of the cloud model for

the people into an enterprise safely behind the firewall. Figure2 shows this type of cloud.



2. Public

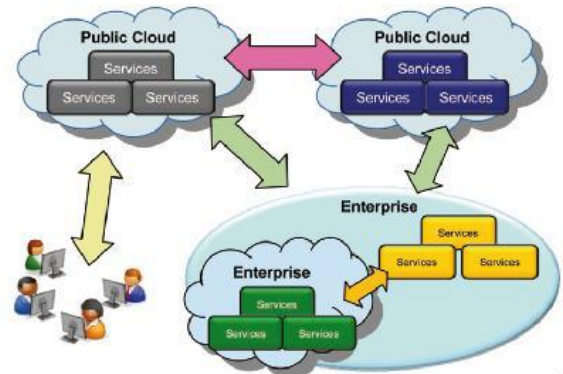
In public cloud, the enterprises providing the cloud services make their resources such as applications, processing resources and storage available to the public to be used. Utilization of these resources to a low amount may be free or pay per use. This type of cloud is shown in figure3



3. Hybrid

A hybrid of at least one private cloud and at least one public cloud. The environment of hybrid cloud is such that some of the resources are managed and maintained by organization itself and on the other hand, some of the resources are placed on the public cloud in order to benefit from the unique characteristics of the public cloud Figure 4

shows this kind of



cloud.

2.3 Major Issues

Cloud Computing is still in its very initial stages and safety is one of its main issues. The amalgamation of cloud computing and E-commerce has still not reached advanced stage and still needs testing. At present these are the many problems that are to be resolved.

- 1) Security issues of cloud platform
- 2) Challenges
- 3) Cloud data security
- 4) Privacy
- 5) Reliability
- 6) Laws and Norms
- 7) Recovery

2.4 Features of cloud computing

- Centralized infrastructure in certain location with lower costs.
- Improve efficiency of unutilized system for maximum utilization
- Reliability is improved as multiple redundant sites are used which makes well designed cloud computing

- Apps can be easily purchased and billed by consumption
- Easy access over the Internet by any device
- Easy maintenance because they do not need to be installed on each users' computer
- Security could improve due to centralization of data. Though security is often as good as or better than traditional system, but there is chance of loss of control over certain sensitive data. However complexity of security increases when data is vastly distributed and greater number of devices and multi-tenant systems are being shared by unrelated users. Private cloud installation can retain control over the infrastructure and avoid losing control of information security.

3. CLOUD COMPUTING AND ELECTRONIC COMMERCE (E COMMERCE)

Cloud Computing and E-commerce are now two important part in our daily uses. Due to cost beneficial both are famous. Cloud computing service saves enterprise's the cost of Information Technology infrastructure, on the other hand E-commerce provides traders to do business without renting or buying a business entity shop. Cloud gives positive opportunities for e-commerce, but before uses it, organization should have a trade-off between costs. Many researcher illustrate that cloud computing and E-commerce the most attractive industries. That has been developed at fastly in recent years, with the Economic, Political, Technological and Sociological factors have had a positive impact on its development. E-commerce

and cloud computing is described as follow by several researchers:

- The quick growth of the global economy increase the developing of online web based transactions.
- Online shopping is becoming a new trend as it is more convenient comparing to traditional way of shopping.
- The security of data and information technologies are improved rapidly.
- Because of this, the level of education and IT skills of customers have been improved.
- The developing of telecommunications techniques accelerates the implement of e-commerce Industry across all over the world.
- Cloud Computing give chances for small-scale and middle-scale business companies to move to the Internet technology with less effort.

3.1 E-commerce and its models

Electronic commerce is one of the main criteria of revolution of Information Technology and communication in the field of economy. The Current edge for business today is Electronic Commerce, it refer to electronic transaction such as buying, selling, information flow and fund transfer over the internet. E-commerce broadly encompasses all business activities taking place over internet. E-commerce has the following Models:

- Business-to-Business (B2B): the transaction between business enterprises.
- Consumer-to-Business (C2B): These mean the customers selling products and services to the Business Enterprises.

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- Business-to-Consumer (B2C): this means the transaction among Business Enterprises and customers.
- Consumer-to-Consumer (C2C): this means the business transaction among users or consumers.

3.2 A framework for electronic commerce based on cloud computing

Cloud computing subverts the traditional network architecture model, which enables the users to make use of the network resources freely and cost-effectively, as well as to get rid of the effect caused by a single computer equipment failure, such as, unavailable devices, the loss of data and so on. With cloud computing, the majority of users need not to buy their own hardware and software, even need not to know who is providing the service, as long as you focus on the resources or services that you really need. If the cloud-based e-commerce service called e-commerce cloud, based on the basic application form, we can describe the overall picture of infrastructure of the e-commerce cloud, as shown in Figure 5.

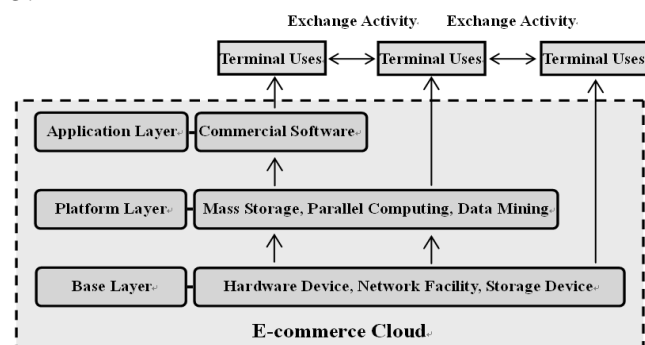


Figure 5. A Framework for E-commerce Cloud

4. E-COMMERCE APPLICATION MODEL BASED ON CLOUD COMPUTING

A. The integration of cloud computing and e-commerce

In the progress of E-commerce development, the relating factors it needs are changing into its constraints because of the limitation of enterprise size, economic strength, and technical force, which is mainly showed in following aspects:

- Talent and technology. Some technical problems such as mass data storage, data mining, information security etc., become a tough test, especially for small and medium-sized e-commercial businesses. They usually cannot expand further business by reason of lacking professional technical talents and power.
- Cost of construction and operation. E-commerce activity requires a large number of computer hardware and software resources. With business expansion and growth in the amount of data, the demands to resources will surge, and cost will increased naturally.

B. E-commerce application model based on cloud computing

- Operation and management based on cloud computing. E-commerce business can process data flexibly during its operation and management. So long as the demand of calculation and storage is knowable, cloud computing can be applied to realize the automation of the solutions in application,

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without considering the position of equipment Resources.

- Brand-new building program of e-commerce Software system. Through cloud platform, enterprises use e-commerce software system as required at any time and pay in accordance with Service time and the scale of resource occupation, all of which save expenses.
- To realize the cloud marketing. Based on a powerful background data, intelligent analysis and optimal proposal of marketing should be offered to realize the cloud marketing. To minimize the operation cost, enterprises only need to focus on the core sector.

4.1 Benefits of Cloud Computing for E-commerce

The cloud computing and e-commerce highly benefit from the Internet. Cloud computing allows consumers and clients to use services, computational resources and storage in a transparent way. E-commerce on the other hand, allows consumers to buy services or products from just about anywhere in the globe and anytime. The cloud computing for e-commerce has several benefits The cost can be calculated based on the need of each company. According to Amazon, cloud computing helps businesses to significantly reduce the costs on several places such as hardware procurement, security, privacy, energy, and maintenance.

Trust and Security of cloud computing

The security of data stored in the cloud is an important concern by everyone The concept of

trust is not easy to define; however, many cloud computing users agree that transparency is important when it comes to trust issues in cloud computing. The businesses must clearly see that the service providers indeed adhere to security standards and best practices. Storing data in the cloud for e-commerce applications is generally considered the best choice.

Investments tailored to the needs of e-commerce

It appears that the cloud computing allows e-commerce companies to save costs up to 80% which is a significant amount. Given this savings, there is a continuous need to maintain and even enhance IT infrastructure for the future development of e-commerce industry. The scalability and flexibility are two important benefits of cloud computing as applied to e-commerce.

Cloud computing scalability

One of the most essential benefits of cloud computing is its ability to scale based on the demand of the cloud clients or businesses. Many of the operations such as activation of the server, increasing the computation power, to reallocating the loads due to changing demands on the cloud can take place relatively quickly (in the order of minutes). These operations basically define the scalability of the cloud and the flexibility to allocate more resources when requested and disposing of them when they are no longer needed by the cloud users.



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Mobility

Global expansion

Cost of construction and operation

Quality of e-commerce

5. CONCLUSION

The term cloud computing is no longer a buzz word, but indicates how corporate information and ecommerce applications are stored online, can be accessed and shared. Cloud computing offers many benefits to the ecommerce market. The speed of building ecommerce websites, the cost savings of infrastructure and the reliability of a stable Platforms are just a few examples of the benefits of a cloud service. On the other hand, these e-commerce models are still in the early stages of exploration and applications. The cloud computing technologies become more sophisticated and the applications of cloud computing become increasingly widespread, e-commerce will certainly accompany in a new era of cloud computing. Some of these issues including platform security, technical standards and the other issues related to the services haven't been solved yet and require the future studies and research.

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