

Cloud Computing Out-Turn on E-Commerce

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Abstract—*Electronic Commerce plays an important role in the today's environment. Goods and services are being provided using computer networks through hardware and software programs. It is very easy to say that E-Commerce an effective technology instead of that it requires costly hardware and software for implementation. Also the electronic data is increasing day by day so the requirement of resources is also increasing for the application which is creating issues in efficient utilization of IT resources. Though cloud computing benefits the building and implementing of E-commerce technical architecture, the problems of system security and stability with it will be a non-neglectable problem In this paper we are providing a model for E-Commerce using Cloud Computing that will influence e-commerce in different ways and will also solves the data security electronic commerce related issues in cloud computing.*

Keywords: *E-Commerce, Cloud Computing, Business model, Service model*

1. INTRODUCTION

Electronic Commerce abbreviated as E-Commerce is online commerce that's provides business using computer networks such as internet. E-Commerce includes nearly everything you can imagine in the real world viz. retail shopping, banking, bookings, billings etc. E-Commerce is the combination of two layers one of the technical architecture made up of hardware and software. Second one layer is the business transactions based on technical architecture. Today E-Commerce has three main business models. B2C (Business to Consumer model)in this model online vendors sell products directly to consumers. B2B (Business to Business model)in which companies make transactions with other companies. C2C (Consumer to Consumer model)which provides ways for consumers to conduct transactions with each other.

Cloud Computing is the fusion of Distributed Computing, Parallel Computing, Grid Computing and virtualization technologies. We can say "Cloud Computing is sharing of resources to achieve coherence and cost advantages similar to a utility over a network."Cloud Computing is "About providing secure, fast, and handy data storage and network services based on open standards and services which are provided via internet", Models of cloud computing such as IAAS (Infrastructure as a service) is the most basic cloud service model. Under this physical or more often virtual machines and other resources are provided. PAAS (Platform as a service) model provide a computing platform typically including Operating system, Database, Web Servers, Programming language execution environment. SAAS (Software as a service) model provide access to the users to application software and databases. In this model Cloud providers manage the whole platform and also the infrastructure that run the applications. Cloud computing a new computing model is going to make a significant impact on E-Commerce technical architecture. In this paper we are discussing how cloud computing will help in E-commerce.

2. RELATED WORK

Laud on et al. [1] gives the technical architecture which is based on E-Commerce technical architecture and E-commerce business nodes are realized that can be used for marketing strategies. In adding the security and constancy of technical architecture are the proposition of online products and service alteration. Cloud computing assists E-commerce enterprise to rent rather than purchase hardware and software which helps them to decline the cost of the system building. By asset of cloud computing platform an E-Commerce enterprise can select and rent the IT products and services based on its demands specifically the charging mode of "Pay-as-Services" is very bendable. EC2 (Elastic compute

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cloud) a cloud system offered by Amazon is a good example.

Wang Danping et al. [2] gives Cloud computing solves the delinquent of resource utilization efficiency for an E-commerce. It is needed to invest on the software and hardware to sustain the operation. Company's growth with the investment will be increased however the utilization efficiency of the invested organization is low due to up and downs in the business with period. Cloud computing enables the business to assimilate the idle IT resources on the far end problem and rent them to the customers. This mode will reduce the operation cost of an E-Commerce company and priorities resources allocation. However cloud computing reimbursements the building and implementing of E-commerce technical architecture, the problems of system security will be a non-neglect able problem. When all the IT resources such as hardware, software, data and network applications are stored on the cloud platform as services, users will unavoidably concern approximately the security and stability of the platform. Once the cloud platform is attacked, the important data of E-commerce transactions will be lost. Customer privacy became an obstacle for the cloud applications of E-commerce. Robert L et al. [3] the average consumption proficiency is no more than 10%, which causes the IT resources wastage. Akhil and Kanika [5] provides security paradigms for cloud computing. They exploring the security issues of cloud computing, how the data is stored and where the data stored physically. Liang, Xilong and Zhenzhen [6] describe the general purpose computing. They describe the general scheme of the cloud layer, server layer and how these layer works. Zhi, Changqin and Yan [7] gives a cost based scheduling paradigm in cloud computing. They provide the cloud storage on demand and accessing the virtual environment of cloud computing. The cost scheduling based on java cloud ware that is private cloud platform.

3. PROBLEM DEFINITION

Roy Sanghita and Sinha Indrajit[4] gives, Safety is one of the major security crisis to the users of cloud computing. Though cloud service providers demand that they provide the most reliable and secure data storage center still they failed to give many answers to the users, such as – its location, staff situation, mode of operation etc. It is very difficult for a cloud

service provider to provide the level of isolation and specified dedicated environment to a single customer. Each outsourcing service providers provide service of computing or data storage for the previous service providers by an invisible way. In order to know the shortfalls of cloud computing as well as users' security expectations in cloud computing, International Data Corporation (IDC) group (www.idc.com) conducted a survey in August 2008 and 2009 where users were asked to rate their issues and challenges experienced with cloud computing. Result showed that the privacy and security of user data is the biggest problem. So, in order to protect user data each cloud computing providers are emphasizing on the use of encryption technology (such as SSL). In this way data protection can be assured but networking path, data processing and storage protection problem cannot be resolved.

4. CLOUD COMPUTING ARCHITECTURE

Cloud computing are service oriented architectures, they available in high capacity networks. In the simple way we define the cloud computing means storing and accessing the data from the internet instead of the hard disk / hard drive. Clouds can be classified as private, public and hybrid. Cloud computing not accessing the data from the local drive it does not mean storing the data on the hard drive. The data is physically stored in the internet and very easy and fast access of the data.

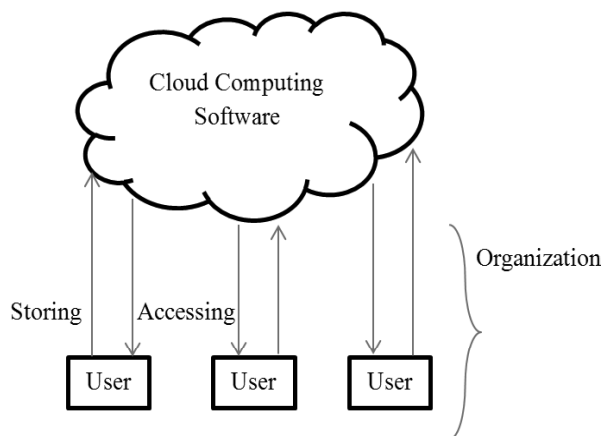


Figure 1: Block Diagram of Cloud Computing

Figure 1 shows the available information in the cloud. The uplink arrow shows the data storing on the cloud. The incoming arrow shows the data access from the cloud by the organizations. Multiple users can simultaneously store and accessing the data from

the cloud software. Accessing and storing the data is an easy process and whenever requirement is made.

5. TECHNIQUES TO SOLVE ISSUES OF E-COMMERCE DATA SECURITY IN CLOUD COMPUTING

By bearing in mind the above issues we can say that the data security problem can be resolved with the following methods. First one Data must be in Encrypting files in which the data we are storing must be in encrypted form. Data can be decrypted with the help of password only. With the help of this process the data can be protected even if it uploaded on other data center. Second technique is that Encrypting e-mails programs like Hush mail can be used to improve security and user privacy. These programs automatically entertain emails which are received as well as sent. Third one Use reputed service with choosing a high reputation service provider is also necessary as they will never do the things like sharing your private

data with marketers or disclosure of secret data. Fourth one is to Reading only confidentiality statement so, it is very important to read protective statement before storing data in cloud environment. We know in every network cookies and bugs exist and these can share data on other network so it is very important to decide that what data will be stored on which type of cloud. If data is so important that no one can be trusted to manage it then, in that case enterprise can make his own private cloud for storing and managing this type of data. Finally User filters according to their data activities. There are some companies which offer a system for monitoring user data like Vent, Web Sense etc. The enterprise has to take decision that what data has to be uploaded on cloud and what not. If the system provided finds any sensitive data is being tried to be accessed on the cloud it will give an alarm and block it.

Figure 2 shows E-commerce cloud model. This model gives a throw description on how to use cloud computing for e-commerce to make it cost effective

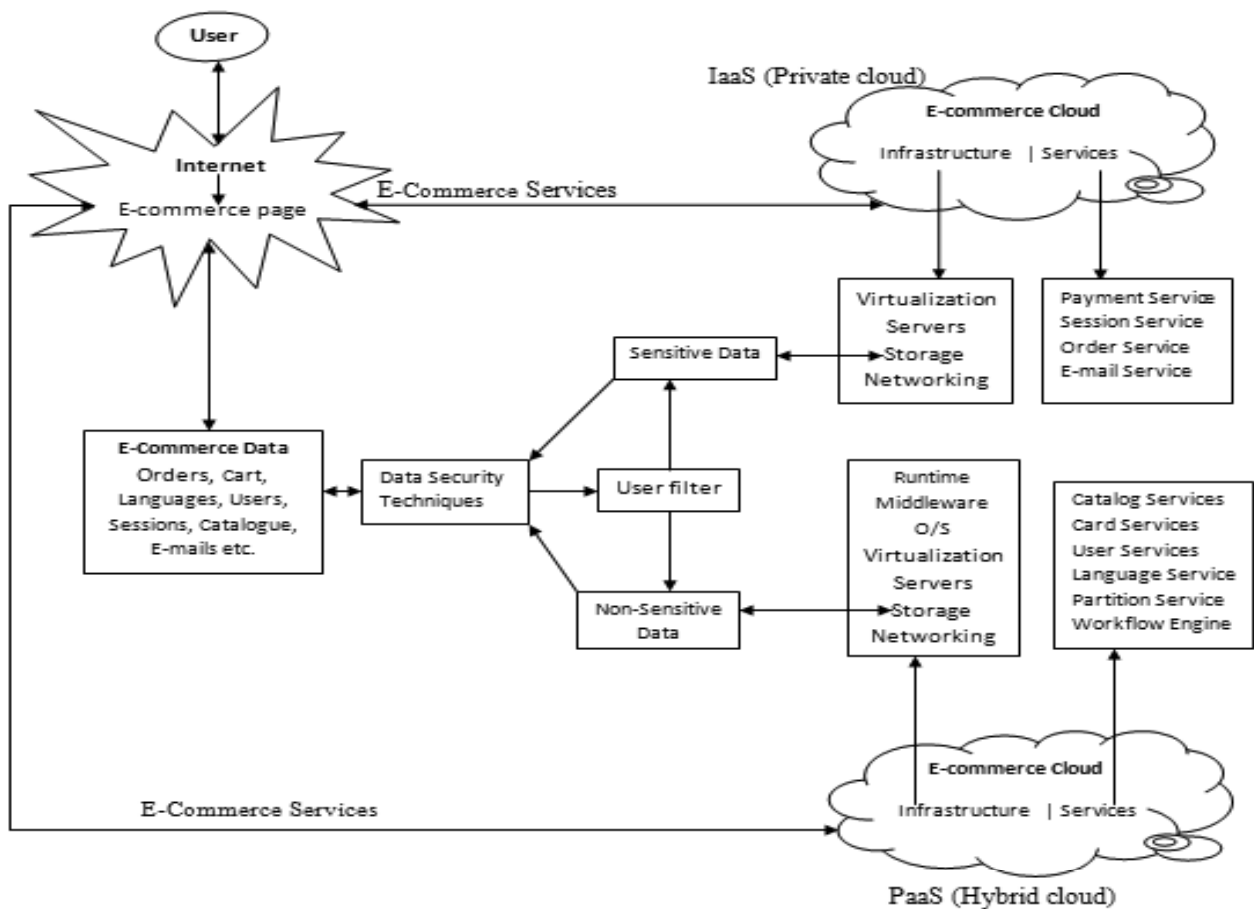


Figure 2 : E-commerce Cloud Computing Model

and how IT resource utilization efficiency can be increased. Also this model helps in resolving the data security and privacy problem.

E-commerce services will be provided to the user with the help of two service models of cloud computing viz. PaaS model hybrid cloud and IaaS model Private cloud. The infrastructure viz. O/S, middleware, Virtualization, Runtime, Servers, Database etc. will be provided through PaaS hybrid cloud. Internet will work as connector in between user and e-commerce cloud. Before storing data, data security techniques like Encrypting files, Encrypting e-mails, Reading privacy statement etc will be applied on data to ensure the data security. With keeping in mind the problem of data privacy our next step will be to filter data through user filter so that sensitive data or say private data like e-mails, session details, orders etc can be stored as per the privacy level. This is where IaaS private cloud performs major role; the sensitive data will be stored on IaaS private cloud because a private cloud provides a greater level of security than a public or hybrid cloud. Non-sensitive data like Languages, Catalogue, and Cart etc. will be stored on PaaS hybrid cloud. E-commerce services like Catalogue service, User services, Language services, Workflow engine, etc. will be provided through PaaS Hybrid cloud to keep it simple not complex. Services like Payment services, E-mail services, Sessions etc. will be provided through IaaS private cloud due to security and privacy purposes. In this way the e-commerce can be cost-effective, IT resource utilization efficiency can be increased without losing data security and privacy with keeping it simple to use technology.

6. CONCLUSION & FUTURE WORK

We conclude that this paper gives cloud computing consequences on electronic commerce. Cloud computing is the useful technique for the IT organization because storage infrastructure is available on the demand whenever they required by the cloud computing software. Cloud computing based on the virtual environment it will be available for the users on ease at any time with low cost. The futuristic issue of the cloud computing is that how clouds can be used for the organization. Cloud computing is still a research topic in the commercial organizations.

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