RURAL BANKING BASED CLOUD COMPUTUING ANALYSIS

[1]KORRA SRINIVAS, [2]DR. JOSEPH PRAKASH MOSIGANTI

[1]Assistant Professor Shri Venkateshwara University, Gajraula, U.P

[2]Professor & Principal, CSE Department MCET, Hyderabad

ABSTRACT

According to the United Nations, almost 50 percent of world population and more than 70 percent of that of developing countries are living in rural areas. Majority of this population live in poverty especially in North and sub Saharan Africa. Rural population face unique problems compared to their urban counterparts in terms of access to technologies, infrastructure, markets and social services. Experts have identified ICT as the tool for overcoming the inefficiencies in traditional methods for the empowerment of rural masses. In this paper, we study how cloud computing can be used to meet the ICT requirements for rural development in terms of opportunities and challenges of implementing and using the new technology.

1 INTRODUCTION

Cloud computing is internet-based computing, where shared servers provide computing power, storage,development platforms or software to computers and other devices on demand. This frequently takes the form ofcloud services, such as 'Infrastructure as a Service' (IaaS), 'Platform as a Service (PaaS)' or 'Software as aService' (SaaS). Users can access web-based tools or applications through a web browser or via a cloud-basedresource like storage or computer power as if they were installed locally, eliminating the need to install and runthe application on the customer's own computers and simplifying maintenance and support. There are severalpossible deployment models for clouds, the most important being public, private and hybrid.[1]

Cloudcomputing is the fastest growing field that provides many different services, which are provided on demand ofthe client over the web. Cloud computing is based on the model of pay-as-you-go.This gives the user cost reduction, fast and easy way to deploy the applications. Cloud computing usage in theInformation Support Systems will facilitate businesses to run smoothly and efficiently. A number of virtual machines and applications can be managed very easily using a cloud. With the use of cloud in businesses willnot only save the cost of staff required to maintain servers, but will also require lesser servers and with that lesspower consumption. [2]

The most important sector which requires a lot of information, data and computing power is healthcaresystem. Doctors require medical history of the patients in critical times and within no time. But we see thatdifferent departments of a healthcare system has have different information of the patients medical history, withrequire time to get assembled. Doctors have to start the treatment without the complete information of patient'smedical history, which sometimes, is life threatening for the patient. Technologies could be used in healthcaresector to provide better

healthcare facilities and reduce the operations costs. In our country we see that there isscarcity of doctors, nurses and pharmacy. But still there is rapid growth in healthcare services, while diseasesare becoming more complex. More and more new and efficient diagnostic techniques and new way oftreatments are being developed and used in healthcare sector so as to provide the patients with best possibletreatment and in their budget. Many healthcare organizations are providing different kind of services to cater tohighly diversified economic population which in turn has resulted in competition in the market. So theorganizations which do not perform well are out of business. [3][4]

As healthcare providers need cost effective automating processes which gives more profits, cloud computingwill provide perfect platform in the healthcare information technology space. Many hospitals may shareinfrastructure with large number of systems linked together. By this pooling the hospitals automatically reducethe cost and increase utilization. The resources are delivered only when they are required. This also means real-timeavailability of patient information for doctors, nursing staff and other support services personnel from anyinternet enabled device [5].

The recent capture of a group of 50 defrauders using fake invoices to claim medical reimbursement in China's Guangxi Zhuang Autonomous Region revealed loopholes in the country's New Rural Cooperative Medical Scheme (NRCMS). According to Xinhua, China's state media, the scheme has enabled 98 percent of therural population to receive 60 to 100 percent of medical coverage after submitting an annual fee of 60 yuan (about 10 U.S. dollars). Despite of its benefits, the program has been criticized for lacking a national information sharing network to prevent misappropriation of rural residents' funds, guarantee the safety of sensitive medical data, as well as facilitate migrant workers to receive reimbursement in cities where they currently reside. Facing poverty and the many structural deficiencies, rural communities are facing immense challenges as they overcome their disadvantages to diffuse cloud technology in the medical insurance system.

2. LITERATURE REVIEW

This paper also describe some approaches of E-learning service. Like E-learning program based on computer, computer based training and effective approach is computer supported collaborative learning approach CSCL focuses on behaviour of student in classroom, sharing of information R.kamala, E.ramganesh, (2013) In this paper describe effective to contribute of cloud computing in education in various method. Cloud computing offer more beneficial and reliable services to user like high returns on investment, reduces maintenance cost, flexible infrastructure etc. this paper also describe many application that regard to improve educational environment. Amazon cloud service are the most extensive cloud service to provide resizable compute capacity. Microsoft educational cloud computing are of about power of choice . A hybrid model of resources it also provide ability to use same Microsoft technology in the educational institution. Microsoft@edu it is popular browser to support tools for student as well as researcher. Another popular application of cloud is GAE (Google Application for Education)it is more popular for sharing educational idea for staff, teacher, student it available on free of cost. This paper also describe IBM cloud services it offers design to help education system and also provide services to faculty, student, researcher at school, collages and university. Salesforce is another pioneer

application of cloud . it is trusted leader in cloud and CRM it provide big discount on educational product R.kamala and E.Raganesh(2013) This paper describe knowledge about specific learning disabilities among teacher, educator in puduchery. In classroom teaching there are all student intelligence quality are not same and also many learning disability problem are faced by student. This paper indicate proper method to reducing and knowing learning disability . investigators developed a closed ended questionnaire which consist of 35 item four dimension were taken namely dyslexia, dysgraphia, dyscalcula and behavaral problem of specific learning disabled student. Vaishnavi.J.Deshmukh et.al.(2013): In this paper describe. the architecture or cloud computing .this paper describe method to improve current education system or traditional education system an adaptive e-learning system designed. in this paper adopt B/A/S Model namely Browser/Agent/Server Model. Adaptive E-learning System structure are build to solving the problem of integration , interexchange and demonstration of multimedia this paper also discuss business and dataflow of adoptability test in adoptability Elearning system to compare the traditional computing and cloud computing. this paper bind the traditional learning to modern cloud based learning. Cloud based E-learning can not completely replace the teacher. it is only updating for technology. modified system architecture can combine cloud environment and institution. This paper also explain the benefits of proposed cloud architecture like, powerful computing storage capacity , high avability , high security, virtualization. Madhumathi.c and Gopinath ganpathy(2013): Cloud based learning provide new pathway from traditional learning to solve existing learning disabilities in rural education. This paper describe characteristics of cloud computing like any time, any where and any device. this paper also introduce ho cloud computing environment is useful for universities, colleges and academic environment of school. This paper also introduce a academic framework that addresses the services and deployment of cloud and each layer of this framework specifies component needed to academic cloud. Kamal Dhull(2013): Development of country is depends on education system of that country. Education contributes to poverty reduction and increase economical growth. This paper describe eLC model it offer software development platform for E-learning task management. eLC is based on model view controller design pattern paradigm. This paper introduce a new shared pool environment for university, colleges, and school. Subodh Kumar(2013) This paper describe behaviour disorder of children and also focus on learning disabilities. This paper conclude that while planning intervention program for children with behaviour disorder one has to take care of their learning disabilities .this paper can give new broad way of thinking about effective education which incorporate strategies for learning disabilities and behaviour disorder intervention. M.Sanir Abou EI-Seoud et.al.(2013): This paper describe effective web based education in Egypt through cloud and there positive effect on higher education. Cloud based E-learning solved the problem of transportation, high prices of traditional educational books, over crowded classroom and providing educational resources over internet in low cost. This paper also analyse growth of internet user and there purpose . individual user 46.03 % people uses internet for educational aspect in Egypt. the yearly growth rate of internet user in February 2012 is 29.37%, January 2013 is 32.49% and in February 2013 is 32.67 the annual

growth rate of internet user is 11.24% cloud based E-learning enhance traditional E-learning system activities for improving learning system. Larib nasir et.al.(2013): In this paper author just want to checkout the writing skill of sample student. Then his question arising there how we can improve the writing skill of some sample student. The intervention prove to bring out significant improvement is the enhancing the writing skill of the sample student.

3. PROBLEM DEFINITION

3.1 INTRODUCTION

Cloud computing is used by IT Services companies for the delivery of computing requirements as a service to a heterogeneous community of end-recipients. The vision of computing utilities based on a service provisioning model anticipated the massive transformation of the entire computing industry in the 21st century whereby computing services will be readily available on demand, like other utility services available in today's society. Similarly, users need to pay providers only when they access the computing services. In addition, consumers no longer need to invest heavily or encounter difficulties in building and maintaining complex IT infrastructure.

In such a model, users access services based on their requirements without regard to where the services are hosted. This model has been referred to as utility computing, or as Cloud computing. The latter term denotes the infrastructure as a "Cloud" from which businesses and users can access applications as services from anywhere in the world on demand. Hence, Cloud computing can be classified as a new paradigm for the dynamic provisioning of computing services supported by state-of-the-art data centers that usually employ Virtual Machine (VM) technologies for consolidation and environment isolation purposes .

Cloud computing delivers infrastructure, platform, and software (applications) as services, which are made available to consumers as subscription-based services under the pay-as-you-go model. In industry these services are referred to as

- Infrastructure as a Service (IaaS)
- Platform as a Service (PaaS), and
- Software as a Service (SaaS)

Clouds aim to drive the design of the next generation data centers by architecting them as networks of virtual services (hardware, database, user-interface, application logic) so that users can access and deploy applications from anywhere in the world on demand at competitive costs depending on their QoS (Quality of Service) requirements .

Clouds are virtualized datacenters and applications offered as services on a subscription basis. They require high energy usage for its operation. Today, a typical datacenter with 1000 racks need 10 Megawatt of power to operate, which results in higher operational cost. Thus, for a datacenter, the energy cost is a significant component of its operating and up-front costs. According to a report published by the European Union, a decrease in emission volume of 15%–30% is required before year 2020 to keep the global temperature increase below 2 C. Thus, energy consumption and carbon emission by Cloud infrastructures has become a key environmental concern

3.2 Green Computing

Green computing is the eco-friendly use of computers and related resources. Such practices include the implementation of energy-efficient central processing units, servers, peripherals as well as reduced resource consumption and proper disposal of electronic waste.Green computing is a study and practice of designing , manufacturing,

using, and disposing of computers, servers, and associated subsystems—such as monitors, printers, storage devices, and networking and communications systems—efficiently and effectively with minimal or no impact on the environment." The goals of green computing are similar to green chemistry; reduce the use of hazardous materials, maximize energy efficiency during the product's lifetime, and promote the recyclability or biodegradability of defunct products and factory waste. Research continues into key areas such as making the use of computers as energy-efficient as possible, and designing algorithms and systems for efficiency-related computer technologies.

There are several approaches to green computing namely

- Algorithmic efficiency
- Resource allocation
- Virtualization
- Power management

3.2.1 Need of green computing in clouds

Modern data centers, operating under the Cloud computing model are hosting a variety of applications ranging from those that run for a few seconds to those that run for longer periods of time on shared hardware platforms. The need to manage multiple applications in a data center creates the challenge of on-demand resource provisioning and allocation in response to time-varying workloads. Normally, data center resources are statically allocated to applications, based on peak load characteristics, in order to maintain isolation and provide performance guarantees. Recently, high performance has been the sole concern in data center deployments and this demand has been fulfilled without paying much attention to energy consumption. The average data center consumes as much energy as 25,000 households. As energy costs are increasing while availability dwindles, there is a need to shift focus from optimizing data center resource management for pure performance to optimizing for energy efficiency while maintaining high service level performance. According to certain reports, the total estimated energy bill for data centers in 2010 is $11.5 billion and energy costs in a typical data center double every five years.

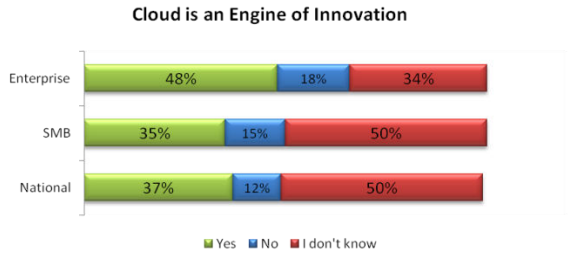
Data centers are not only expensive to maintain, but also unfriendly to the environment. Data centers now drive more in carbon emissions than both Argentina and the Netherlands. High energy costs and huge carbon footprints are incurred due to massive amounts of electricity needed to power and cool numerous servers hosted in these data centers. Cloud service providers need to adopt measures to ensure that their profit margin is not dramatically reduced due to high energy costs. For instance, Google, Microsoft, and Yahoo are building large data centers in barren desert land surrounding the Columbia River, USA to exploit cheap and reliable hydroelectric power.

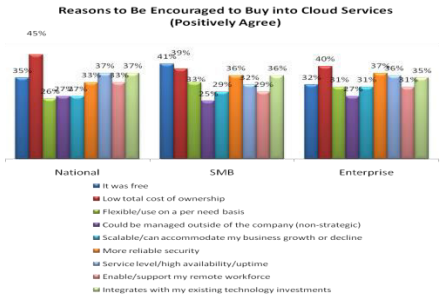
Lowering the energy usage of data centers is a challenging and complex issue because computing applications and data are growing so quickly that increasingly larger servers and disks are needed to process them fast enough within the required time period. Green Cloud computing is envisioned to achieve not only efficient processing and utilization of computing infrastructure, but also minimize energy consumption. This is essential for ensuring that the future growth of Cloud computing is sustainable. Otherwise, Cloud computing with increasingly pervasive front-end client

devices interacting with back-end data centers will cause an enormous escalation of energy usage.

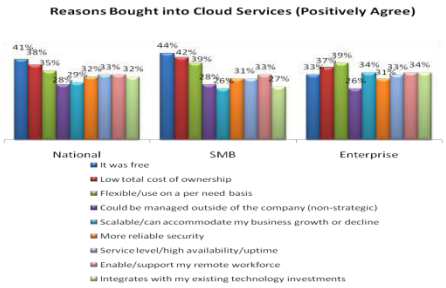
4. RESULTS AND DISCUSSION

Slightly more than one-third of SMB ITDMs believe cloud is an engine of innovation, but that percentage is far fewer than that of the Enterprise, with nearly half agreeing.While low cost of total ownership motivates the ITDMs nationally, SMBs appear a reason to buy intocloud services is because it's free. Enterprise companies show more concern for total cost of ownership.

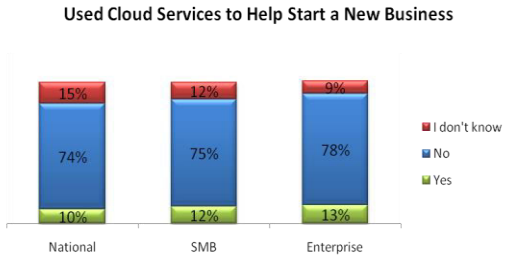




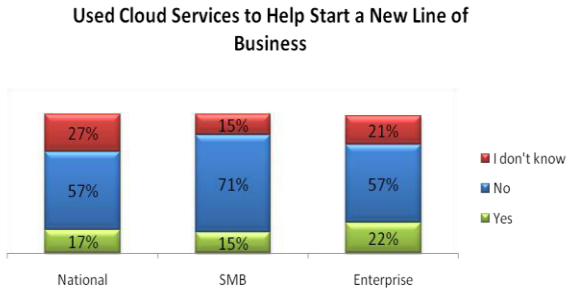
For those SMBs that already bought into cloud more than two-fifths (44%) say they did so because it was free. Total cost of ownership (42%) is also mentioned as a reason to buy cloud services.Flexibility and usage on a per need basis is cited by SMBs and Enterprises in equal percentages, however, this reason is selected most often by ITDMs at Enterprise businesses.

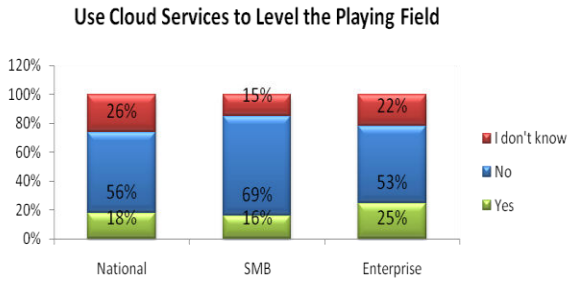


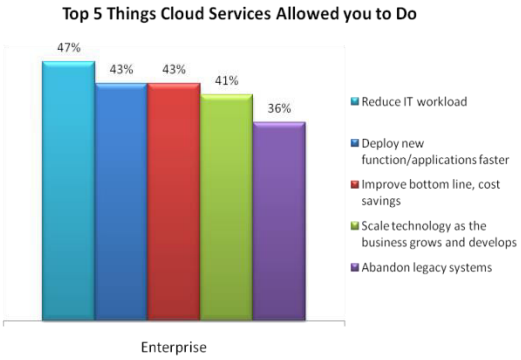
Regardless of size of company, only around 10% of ITDMs say they've used cloud services to help start anew business. A high percentage (approximately three-quarters) of respondents have not.

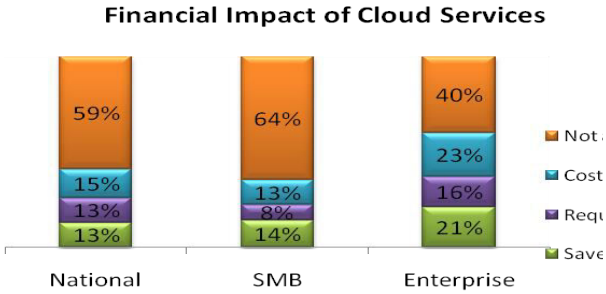


On average, the majority of respondents have not realized the potential of starting a new line ofbusiness using cloud services as only 15% of SMBs and 22% of Enterprise businesses have done so.Approximately the same percent claim to have used cloud services to level the playing field.Of those implementing cloud services, ITDMs at SMBs claim their company has saved money versusrequiring more budget.



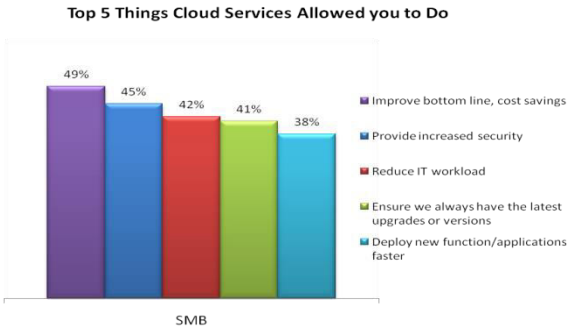






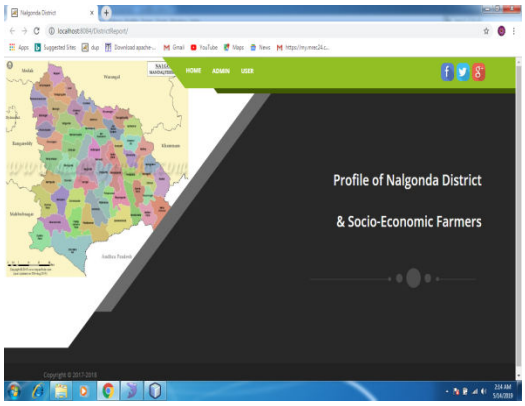
Cloud Services will Impact Hiring Practices

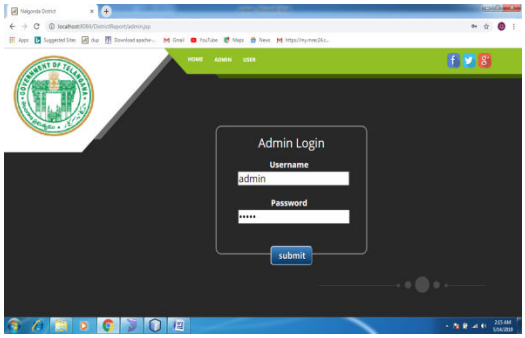
While both company-size segments agree that the IT workload was reduced, the bottom line saved and faster deployments were achieved, SMB ITDMs say cloud services provided increased security (45%) and ensure the latest versions of technology (41%). Enterprise ITDMs were able to abandon legacy systems (41%) and scale technology with the business (36%).

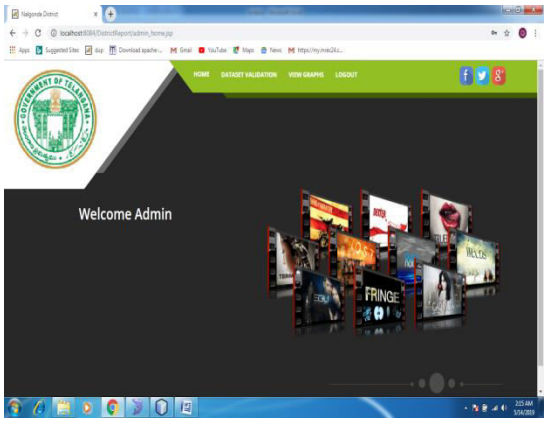


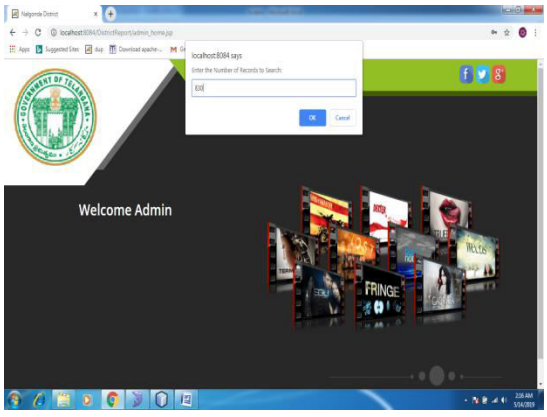
Cloud computing provides elastic, scalable, on-demand services through CSPs to consumer over the Internet. The cloud provides applications online that can be directly utilized by users, including platform and infrastructure for delivering services. There are clouds that can serve an organization, a dedicated group or a combination of groups. E-governance aims at delivering effective and efficient services through government to business, citizen and other government agencies. The cloud provides the enabling environment and infrastructure to handle the enormity of E-governance activities. E-governance can leverage on the cloud to offer services using the different cloud services types, in particular the SaaS. Several countries are using the concept of E-governance and some have adopted cloud computing in government. The cloud will continue to be relevant to individuals, businesses and government. Further work can be done in terms of Therefore, the paper recommends that various agencies of local, state and the federal government leverage on the advantages of cloud computing to improve service delivery and enhance the performance of government.

5. RESULTS









CONCLUSION AND FUTURE WORK

Cloud computing is a technology of rapid development, however security problems have become obstacles to make the cloud computing more popular which must be solves. This paper proposed a security model and framework for secure cloud computing environment that identifies security requirements, attacks, threats, concerns associated to deployment of the clouds. At the same time cloud computing technology is not just a technical problem, it is also involves standardization, supervising mode, laws and regulations, and many other aspects, cloud computing is accompanied by development opportunities and challenges, along with the security problem be solved step by step, cloud computing will grow, the application will also become more and more wide.

Future research should be directed towards the management of risks associated with cloud computing. Developing risk assessment helps organizations make an informed decision to whether cloud computing is currently suitable to meet their business goals with an acceptable level of risks. Research should be persued finding methods for qualitative and quantitative risk analysis in cloud computing. These methods should enable organizations to balance the identified security risks against the expected benefits from cloud utilization.

REFERENCES:

[1] Advancing healthcare delivery with cloud computing, European Coordination Committee of the Radiological, Electro medical and Healthcare IT Industry, http://www.cocir.org/site/fileadmin/4.4__eHealth/eHealth_Toolkit_INT_2012_chap2.pdf

[2] Rabi Prasad Padhy, ManasRanjanPatra and Suresh Chandra Satapathy, Design and Implementation of a

Cloud based Rural Healthcare Information System Model, UNIASCIT, Vol 2 (1), 2012, 149-157

[3] Eman Abu Khousa, Nader Mohamed and Jameela Al-Jaroodi, e-Health Cloud: Opportunities and Challenges, Future Internet 2012, 4, 621-645; doi: 10.3390/fi4030621

[4] Oana-SorinaLupse, Mihaela Marcella Vida, LăcrămioaraStoicu-Tivadar, Cloud Computing and Interoperability in Healthcare Information Systems, INTELLI 2012: The First International Conference on Intelligent Systems and Applications

[5] Praveen Srivastava, Rajiv Yadav and PritiRazdan, Cloud Computing in Indian Healthcare Sector, http://www.cdacnoida.in/ascnt2011/Health%5C1.

Cloud%20computing%20in%20Indian%20healthcare%20 sector.pdf

[6]Dr. Vinod L Desai, Prof. (Dr.) Nilesh K., ModiProf. (Dr.) V R Rathod, Analytical study for applicability of
Cloud Computing in Indian Environment, Int. J. of Data Modeling and Knowledge Management, Vol. 1,No. 2, December 2011

[7]Malav Kapadia, Cloud Adoption in Indian Healthcare, http://ehealth.eletsonline.com/2012/04/cloud adoption-in-indian-healthcare

[8]P. Mell and T. Grance, "The NIST Definition of Cloud Computing," NIST Special Publication 800-145,September 2011

[9]Dr. VasudevaVarma," Cloud Computing for E-Governance", A white paper IIIT, Hyderabad Jan 1,2010 ,p. 109