ORIGINAL RESEARCH PAPER

Computer Science

A STUDY OF CLOUD COMPUTING APPLICATIONS IN RURAL AREA

KEY WORDS: Cloud Computing, Cloud Computing applications, e-Governance, Rural Development, People.

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ABSTRACT

This Research Study explore and examine a Survey based study on Maximum & Minimum utilization of cloud computing applications in rural area such as businessman, students, teachers , farmers & working professionals. Objectives of this paper are to explore the level of Utilization of cloud computing applications among various fields of people and to examine the utilization of cloud computing application from various fields. This study includes Survey method is adopted for the study of 50 respondents in each area i.e. Businessman, students, teachers, farmers and working professional people like doctors & engineers. In this Survey businessman selected from Khandesh region in Maharashtra India, students and teachers in Schools and Colleges, farmers from Villages and working professional from rural area Cities were selected as sample for the study by purposive sampling technique.Researcher self-made Utilization of cloud computing applications scale is used for the study. The aim of this research paper is to find out which is the maximum & minimum utilization of cloud computing application among rural area of peoples from businessman, students, teachers and farmers and working professionals. It was found out from the study that there is a significant association between utilization of cloud computing application and selected independent variables among all types of people.

1 INTRODUCTION

Societies are now moving towards innovation. They are demanding every basic necessity of life at their door step. Every people wants to available these facilities whenever he or she desired. This desire can be fulfilled if it will be available under one umbrella. Now, information technology is also as necessary as other basic utilities of life. Cost of these utilities is based on their usage. In cloud computing, IT services are available under one umbrella (Buyya, R. &C.S.Yeo, 2008). Cloud computing is one among fastest growing technologies. With low financial budget and limited available resources all fields of people can become the beneficiary of cloud computing.[1]

In general, a **rural area** is a geographic **area** that is located outside cities and has a low population density and small settlements with less internet facility available. The people is staying at in rural area is known as rural area people.

What is Cloud?

The term **Cloud** refers to a **Network** or **Internet.** In other words, we can say that Cloud is something, which is present at remote location. Cloud can provide services over public and private networks, i.e., WAN, LAN or VPN.[2]

What is Cloud Computing?

Cloud computing is a technology that uses the internet and central remote servers to maintain data and applications. Cloud computing allows consumers and businesses to use applications without installation and access their personal files at any computer with internet access. This technology allows for much more efficient computing by centralizing storage,memory, processing and bandwidth.

Cloud Computing refers to **manipulating, configuring,** and **accessing** the hardware and software resources remotely. It offers online data storage, infrastructure, and application. Cloud computing offers **platform independency,** as the software is not required to be installed locally on the PC. Hence, the Cloud Computing is making our business applications **mobile** and **collaborative.** [2].

The cloud symbol is typically used to represent the internet. Cloud computing is now commonly used to describe the delivery of software, infrastructure and storage services over the internet. Users of the cloud can benefit from other organizations delivering services associated with their data, software and other computing needs on their behalf, without the need to own or run the usual physical hardware (such as servers) and software (such as email) themselves.

Cloud computing is the next stage in the evolution of the internet, it provides the means through which everything from computing power to computing infrastructure, applications and business processes can be delivered to you as a service wherever and whenever you need them. Cloud computing solutions can simplify the way in which your business operates, particularly in terms of hardware needs. Through a cloud solution you are able to connect and access the same information – but now you can connect from anywhere and enjoy a more streamlined technology installation

Cloud Computing Application in Indian context

Today most of the studies in cloud computing is related to commercial benefits but this idea can also be successfully applied to non-profit organizations and to the social benefit. In the developing countries like India Cloud computing can bring about a revolution in the field of low cost computing with greater efficiency, availability and reliability. Recently in these countries e-governance has started to flourish. Experts envisioned that utility based computing has a great future in e-governance. Cloud computing can also be applied to the development of rural life in India by building information hubs to help the concerned people with greater access to required information and enable them to share their experiences to build new knowledge bases.

E-Governance is an interface between Government and public or this can be an interface between two governments or between government and business organizations.

Rural Development

In the context of rural development cloud computing can also be used to success for its centralized storage and computing facility and utility based pay model. As per [4] 72.2% of total Indian population resides in rural areas. According to the survey conducted by "Hole in the Wall project" [5] computer literacy among boys and girls of age group 8-14 in rural area varies across the regions of India. It is 40-50% in most of the regions. So the computer literacy is not a concern in rural India and also in [5] it shown that learning rate is pretty high for computer literacy. Agriculture is India's biggest employment source, accounting for 52% employment in India [4]. And agricultural sector contributes to 20% of country's total GDP. So it is very important to make a serious attempt to develop rural India. Rural development can be in the form of education, agriculture, health, culture or in any other fields. Now a day's most of the villages have some access to electricity and cellular phone. So there is technical feasibility of establishing computer systems. But the mentality of the people haven't been changed that much and that's why the spread of personal computer is not that much significant in the villages. We think this growth rate can be enhanced if the computing system is really cheap, easy to operate with minimum level of knowledge,

without up front Commitment and more essentially if the system is helpful to enhance their life style.

The main aim of the research is to make the people in rural areas to have access to recent technology and with the help of the computing system enhance their standard of living and also this would lead to a greater good of developing the nation.

Cloud Computing Applications

Applications using cloud computing are gaining popularity day by day for their high availability, reliability and utility service model. Today many cloud providers are in the IT market. Of those Google App-Engine, Windows Azure and Amazon EC2, S3 are prominent ones for their popularity and technical perspective.

Cloud Computing has its applications in almost all the fields such as business, entertainment, data storage, social networking, management, entertainment, education, art and global positioning system**,** etc.

Business Applications

Cloud computing has made businesses more collaborative and easy by incorporating various apps such as **MailChimp, Chatter, Google Apps for business,** and **Quickbooks.**

1. **MailChimp:** It offers an **e-mail publishing plat-form.** It is widely employed by the businesses to design and send their e-mail campaigns.
2. **Chatter: Chatter app** helps the employee to share important information about organizationin real time. One can get the instant feed regarding any issue.
3. **Google Apps for Busi-ness:Google** offers **creating text documents, spreadsheets, presentations,** etc., on **Google Docs** which allows the business users to share them in col-laborating manner.
4. **Quickbooks:** It offers **online accounting solu-tions** for a business. It helps in **monitoring cash flow, creating VAT returns** and **creating business reports.**

Data Storage and Backup :Box.com, Mozy, Joukuu are the applications offering data storage and backup services in cloud.

1. **Box.com:- Box.com** offers drag and drop service for files. The users need to drop the files into Box and access from anywhere.
2. **Mozy:-Mozy** offers online backup service for files to prevent data loss.
3. **Joukuu :-Joukuu** is a web-based interface. It al-lows to display a single list of contents for files stored in **Google Docs, Box.net and Dropbox.**

Management Applications

There are apps available for management task such as **time tracking, organizing notes.** Applications performing such tasks are discussed below:

1 Toggl:-It helps in tracking time period assigned to a particular project.
2. Evernote:-It organizes the sticky notes and even can read the text from images which helps the user to locate the notes easily.
3. Outright :-It is an accounting app. It helps to track income, expenses, profits and losses in real time.

Social Applications

There are several social networking services provid-ing websites such as Facebook, Twitter, etc.

1. Facebook ;-It **offers** social networking service. One can share photos, videos, files, status and much more.

2. Twitter: It **helps** to interact with the public direct-ly. One can follow any celebrity, organization and any person, who is on twitter and can have latest updates regarding the same.

Entertainment Applications

1. Audio box.fm :-It offers streaming service. The music files are stored online and can be played from cloud using the own media player of the service.

Art Applications

Moo:-It offers art services such as designing and printing **business cards, postcards and mini cards.**

Objectives:

To find out whether which types of Cloud compu-ting application are utilized among rural area Khandesh region respondents -

1) Businessman from Khandesh , Maharashtra
2) Students in UG/PG Colleges from Khandesh, Maharashtra
3) Teachers in UG/PG Colleges from Khandesh, Maharashtra
4) Farmers from khandesh region, Maharashtra
5) Working professional from Khandesh area Cities & Villages

Sample: This survey conducted from khandesh re-gion and This Study Selected a purposive Sample of Total 250 respondents is divided into following dif-ferent working area.

1) Businessman from Khandesh – sample of 50 respondents.
2) UG and Post Graduate Students from Khandesh, Maharashtra– sample of 50 re-spondents.
3) Teachers in Schools & Colleges from Khandesh, Maharashtra - sample of 50 re-spondents.
4) Farmers Staying at Rural area /Villages in Maharashtra– sample of 50 respondents.
5) Working Professional (Doctors and Engi-neers) – sample of 50 respondents.

Tool: Familiar and utilization of Cloud Computing Applications Scale Constructed and Standardized by Mr. Chandrakant Gujar , khandesh ,Maharashtra,India.

Table 1: Utilization of type of Cloud Computing Applications

Name of Cloud Computing Applications	Utilization in Number out of 50 Sample People in rural area respondents					Total Per Utilizations of Cloud Computing apps
	Busines-sman	UG/PG Students	UG/PG Teachers	Farmers	Professionals – Doctors & Engineers	
Whatsapp	48	47	48	45	48	94.00%
Skype	43	40	42	23	36	73.60%
Likedin	38	36	34	20	32	64.00%
Email	48	48	49	37	43	90.00%
Quick books	40	34	43	13	42	68.80%
i-Tunes	10	12	16	10	16	25.60%
Twitter	48	44	40	36	44	84.80%
Facebook	40	42	42	37	39	80.00%
Google apps	42	33	38	30	43	74.40%
Google docs	42	40	40	16	36	69.60%
Ms office 365	43	42	40	38	43	82.40%
Chatter	42	40	46	30	44	80.80%

DESCRIPTION:

Table 1 shows that out of 250 respondents 236 of them familiar in Whatsapp, 184 of them of familiar in skype, 160 of them familiar in likedin, 225 of them familiar in e-mail, 172 of them familiar in QuickBook, 64 of them familiar in i-Tunes, 212 of them familiar in twitter, 200 of them familiar in fa-cebook, 186 of them familiar in google apps, 174 of them familiar in google docs, 206 of them familiar in ms office 365 and 202 of them familiar in chatter.

CONCLUSION:

1. This study found that out of 250 respondents familiar and Utilization of Whatsapps - 94.00%, Skype -73.60%, Likedin - 64.00%, E-mail -90.00% , Quick books -68.80%, i-Tunes-25.60%, Twitter-84.80% Facebook – 84.80%, Google apps-74.40%, Google docs-69.80% , Ms office 365 -82.40% and chatter – 80.80%.
2. This Survey Show that Whatsapp is Maxi-mum Utilization of cloud Computing applica-tion while i-tunes is Minimum Utilization of Cloud Computing application towards dif-ferent area of peoples in rural area from khandesh, Maharashtra, India.

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