



CLLOUD COMPUTING USAGE AND SATISFACTION: A STUDY WITH SPECIAL REFERENCE TO MSMES OF MAHARASHTRA

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Abstract

The popularity of Cloud Computing services in the business organisations is increasing rapidly since last decade. The usage of Cloud computing services is affecting the productivity, operations and other core activities of the businesses. Hence the question that whether the customers using Cloud services are satisfied becomes important to answer to enhance its use and thus lead to the success of the business. This paper focuses on various factors affecting the customer satisfaction, usage pattern of Cloud computing in the MSM organisations.

Keywords: MSME, Cloud Computing Services.

1.1 Introduction

In modern times the Cloud computing usage is gaining popularity in business organisations as they face stiffer competition and needs to upgrade with latest technology. Technological upgradation is not a choice in modern times rather it is necessity (FICCI CMSME). In most cases, the organisations are switching from traditional IT setups to Cloud platform. The advantages it offers are scalability, flexibility, resources on demand and many more. In traditional method of computing, computers are connected together to form a network and resources are shared for their optimum utilisation. Therefore most of the organisations maintain their own resources to satisfy the needs of their clients. The set up and installation, maintenance overhead of the software rests on the client themselves. In this set up most often the computing resources lie underutilised.

Cloud computing is a network based service that renders computing resources on- demand basis that can be procured and released as required. The definition given by Armburst says that, "Cloud computing refers to both the applications delivered as services over the internet and the hardware and systems software in the data centres that provide those services".

It is different from the conventional IT setup in a way that the responsibility of purchase and maintenance of hardware and software is of Cloud service provider whereas the clients are access Cloud services and pay only for the resource used on rent basis.

MSMEs form the backbone of an economy in which they exists. Though having size constraint they contribute to the economy by employing large number of people thus generating employment. They contribute in terms of employment, export and entrepreneurship promotion to the economy. According to the MSME Annual Report 2012-13, the MSMEs not only play crucial role in providing large employment opportunities at comparatively lower capital cost than large industries but also help in



industrialization of rural & backward areas, thereby, reducing regional imbalances, assuring more equitable distribution of national income and wealth.

With the increasing use of Cloud computing in the industries, it thus becomes essential to analyse the Cloud usage pattern amongst the MSMEs. The parameters to access the usage are duration of Cloud usage, investment in Cloud computing intended by the organisations for the coming years.

1.2 Objectives

- a) To understand the role of Cloud computing in general and in the MSMEs in specific.
- b) To determine the usage of Cloud computing in the MSMEs
- c) To understand the extent of satisfaction among MSMEs regarding usage of Cloud Computing.
- d) To suggest measures for promoting Cloud computing usage in the organisations.

1.3 Research Methodology

The present study deals with the MSMEs of Maharashtra region. The study is based on primary data via structured questionnaire that consisted of close ended questions. The questionnaire was distributed to the potential respondents that currently use Cloud computing services in their organisations. The questionnaire (Google form) link was sent through email and social media. The questionnaire was divided into 3 sections. Section A aimed to collect the demographic details of the respondent and his/her organisation and other particulars like job role and experience. Section B aimed to collect details on Cloud usage in the respondent organisation. Section C aimed to collect the opinion of the respondents for various aspects of Cloud computing services.

A couple of questions were included to know usage and satisfaction level of Cloud computing services in their organisations. Important to mention here is that the respondent were assurance of their information to be kept confidential. Data was collected from 72 organisations that use Cloud services for their business purpose with multistage purposive sampling based on convenience to certain extent.

1.4 Review of Literature

- The authors **Peter Balco, Jehuda Law, Martina Drahosova**(1) in their paper “Cloud market analysis from customer perspective” analyses the Cloud computing services in different regions based on some particular parameters. The survey aimed to discover the emerging trends in the use of Cloud models, most desired Cloud services in the respective regions.
- The research of **Imran khan**(2) highlights that the business could become more competitive globally with efficient utilization of information and communication technologies (ICT). According to the researcher the sooner SME adopts Cloud computing the better it can compete in the global market.
- According to **James Fieger**(3) the security and the authentication schemes offered by Cloud services are very attractive and reliable and smaller organizations can start up with the Cloud more easily and reliantly.
- **Pedro R. Palos, Sanchez, Francisco J, Arenas Marquez**(4) finds the determinants of adoption of Cloud Computing services by different sized companies in Spain and observes that Cloud



computing is better than the previous Information technology. The research also infers that increase in awareness about Cloud computing technology will enable the SMEs to use Cloud services and gain advantage.

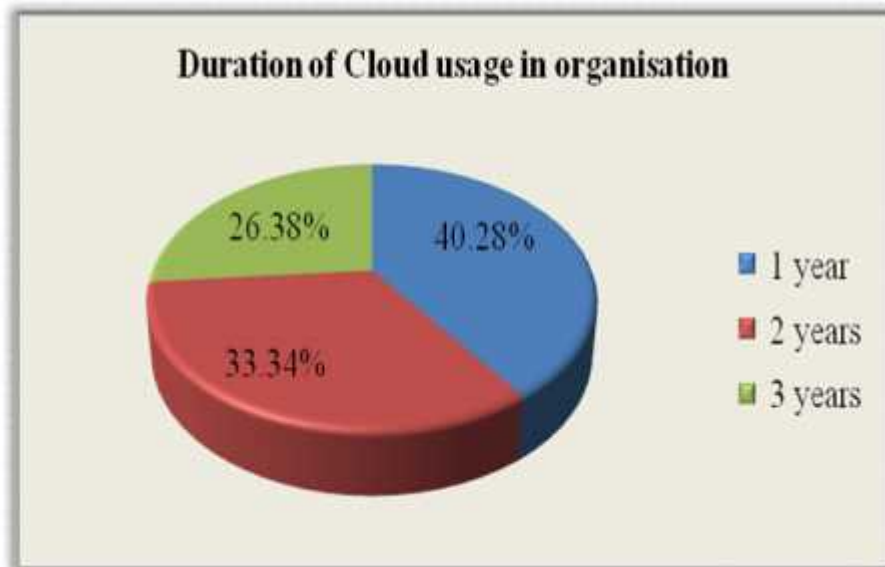
- The research done by **HamedRezaei, BehdadKarimi** (5) mainly focused on the quality of service the Knowledge management system offers with the use of a Cloud server

1.5 Data Analysis and Interpretations:

In order to determine the response for satisfaction and usage of Cloud computing services the MSMEs of Maharashtra were surveyed. After data collection, responses were analysed and graphed followed by their interpretations.

1.5.1 Duration of Cloud usage in the organisation

Graph 1



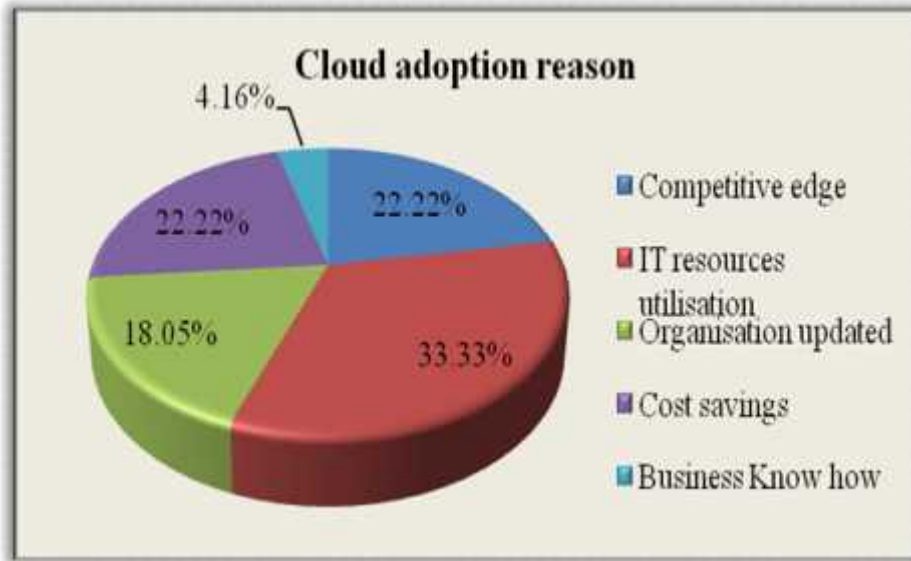
Source: Primary Data

Graph 1 reflects the period since the Cloud service was being used in sample organisations for business purposes. 41% of sample organisations are using Cloud Computing services since 1 year, while 33% are using it since 2 years and about 26% of the total organisations are using it since 3 years. This indicates that Cloud based systems are popularly being used across MSME enterprises of Maharashtra since past one year.



1.5.2 Cloud Adoption reason in the Organisation

Graph 2

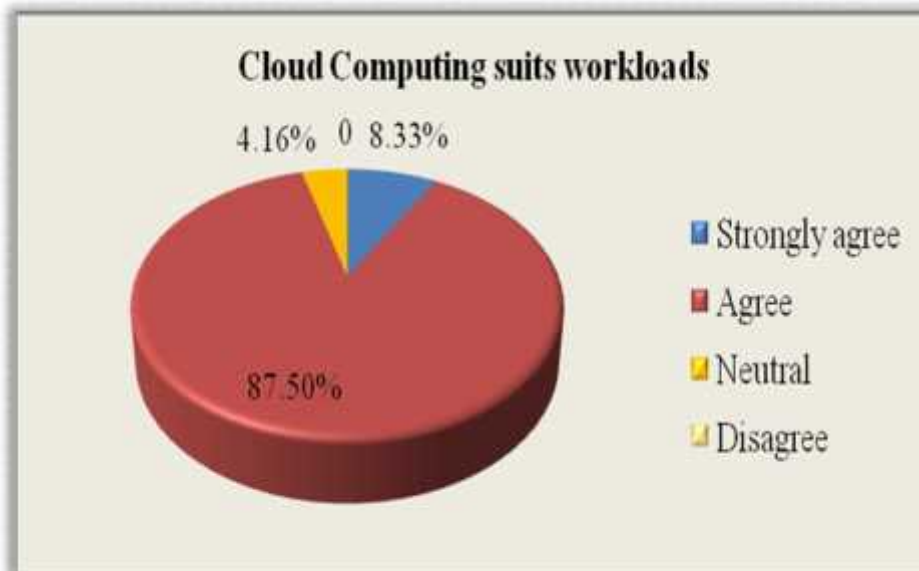


Source: Primary Data

Graph 2 illustrates the reasons that lead adoption of Cloud Computing service in the MSMEs of Maharashtra. 1/3rd of the total sample organisation adopt Cloud Computing services to utilise their resources to the optimum level. A quarter adopted it to achieve cost saving and competitive edge while 19% adopted it to keep their organisation updated with the latest technology. Overall the IT resources utilisation is the prevalent reason for Cloud model adoption.

1.5.3 Opinion for whether Cloud computing suits the Business Workloads of the Organisation

Graph 3



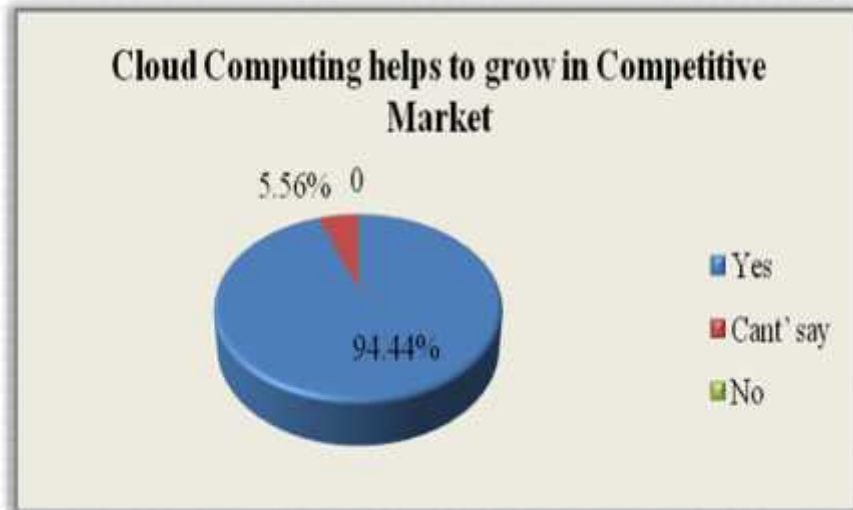
Source: Primary data



Graph 3 presents the analysis of whether Cloud suits the business workload in the sample organisations. Nearly 90% of total sample organisations agreed that Cloud Computing services suits their business workloads. 8% are in strong favour of workload suitability. Only 4% are neutral to workload suitability

1.5.4 Opinion of whether Cloud computing helps to grow in Competitive Market

Graph 4

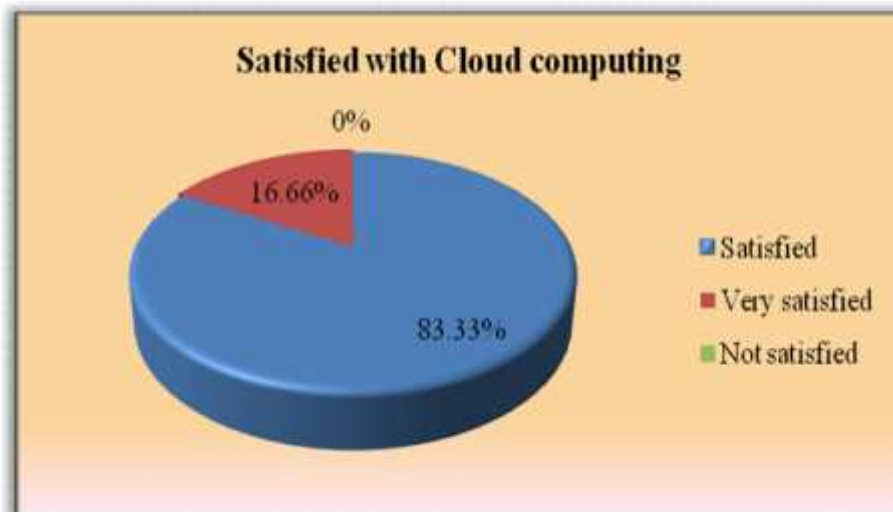


Source: Primary data

Graph 4 shows the opinion of whether Cloud computing helps to grow in Competitive Market. Almost all the respondents replied in affirmation i.e nearly 95% agree with the fact that Cloud computing helps to grow in competitive market. Remaining 5% respondents could not frame a response and replied in can't say category.

1.5.5, Opinion of whether the Organisation is Satisfied with Cloud computing services

Graph 5



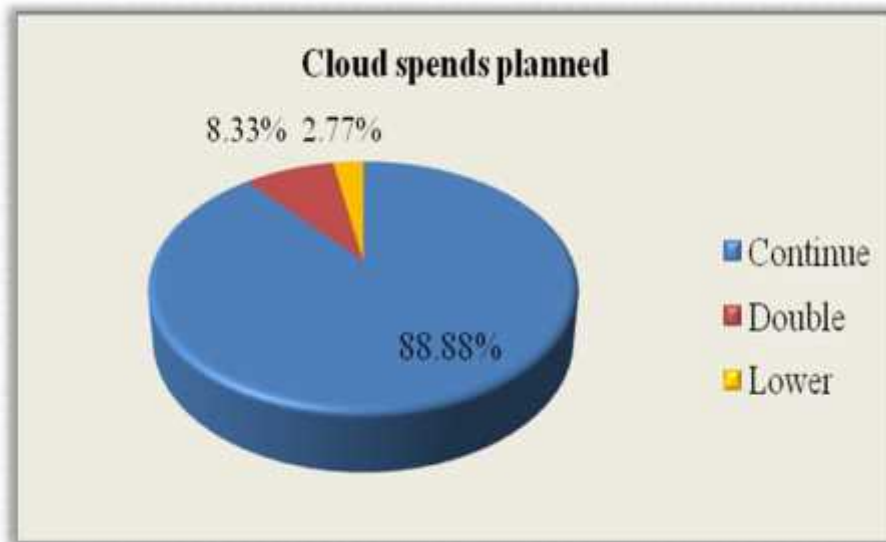
Source: Primary data



Graph 5 indicates that more than 83% of the total respondents are satisfied with Cloud Computing services. Moreover, more than 16% respondents were very satisfied with Cloud computing services.

1.5.6 Details of investment planned in Cloud for coming years

Graph- 6



Source: Primary data

Graph 6 reflects the business planning to spend in Cloud technology for the coming years. Nearly 90% organisations would like to continue with the same budget on Cloud. 8% are planning to increase the investment in cloud. Conversely, 2% did plan to lower the Cloud spends.

The above graphs demonstrate the usage patterns of Cloud computing in MSMEs of Maharashtra region. In a nutshell, the MSMEs find feasible to use Cloud computing services for their business purposes. And being satisfied in using Cloud computing in their organisations, MSMEs are planning to continue with the same IT budget in Cloud services.

1.6 Measures to promote Cloud computing usage in the organisations

- It has been observed that MSMEs stay backwards as they are hesitant in using and updating advanced technologies. Government can propose and implement subsidy schemes for Micro, Small and Medium enterprises that make use of Cloud computing for their business applications
- Usage of Cloud computing services depends upon the awareness of decision maker and thus awareness and knowledge intensive programs can be organized by the Government for the holistic development of the MSME sector.
- Governments on a yearly basis should assess the IT set up of the enterprises and motivate the Organisations to make use of Cloud technology for their IT needs.



- As the popularity and demand for Cloud services is going on increasing, the Governments of various developed and developing countries are promoting and encouraging the use and adoption of Cloud. Therefore the Indian Government should also encourage the use of Cloud technology in MSMEs for its development.
- As the use of Cloud computing is growing on a good pace in the Indian market, creating qualifications based on the analysis of Cloud computing requirement in the market could be beneficial in order to leverage the technology.

1.7 Conclusion

The features Cloud technology offers are specifically suitable for the small organisation. As MSMEs are a crucial element of an economy, due care should be taken to establish technological soundness in these enterprises. It is important to understand the technological adoption in various businesses to focus on the industry that has not yet endorsed the Cloud technology.

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