

AWARENESS AND ADOPTION OF CLOUD BASED ACCOUNTING BY QUALIFIED CHARTERED ACCOUNTANTS IN UDAIPUR DISTRICT OF RAJASTHAN: AN EMPIRICAL STUDY

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ABSTRACT

In the modern era, where business has crossed the international boundaries and accounting has international standards, Technical competency has a very crucial role to play. With its inbuilt facilities and flexibility sky is the limit for cloud computing based accounting. The focus of this research paper is to explore the level of awareness and adoption of cloud based accounting among the chartered accountants of Udaipur and in addition, finds the association between awareness of cloud computing technology with age and gender of the chartered accountants and to increase their awareness level in this regard. For this a structured questionnaire was send to 200 chartered accountants out of which 140 responded and a related analysis was done. Chi square test was used to find the association of age and gender with awareness of cloud based accounting. In the analysis we found that most of them were aware of the concept of cloud accounting and they used the storage as a service. Few also used software as a service. They were interested in the service because it gave them location independence i.e. it gave them access to their data anywhere and anytime. It also saved their cost on hardware and software. It was also found that the young accounting professionals were more aware of the cloud based accounting technology and there was no difference in this aspect when we associated the male CAs with the female CAs. It was also found that all of the 140 respondents were willing to expand their work and use cloud computing services in one or the other way after understanding the multiple benefits explained through our questionnaire.

KEYWORDS: *Cloud Computing, Cloud Based Accounting, Software, Platform & Infrastructure As A Service.*

Introduction

Cloud computing, is now no more a technical jargon. It is now a buzzword, pervasive in diverse segments of the economy and hence finds its relevance among financial and accounting professionals also. Change is inevitable and all the economies in the world have witnessed the rapid advances in science and technology which ultimately has given birth to new business models. Accounting professionals are facing new challenges due to increasing complexities of business environment and cut-throat competitions on global platforms and the rising demands of global accounting standards and practices. The medium and small scale business are further caught in the net due to additional cost of storage, internet bandwidth, specialized IT staff to configure, install and update accounting software (*otillia dimitriu et al*). Digitization of business and rampant use of internet has and is changing the accounting scenario of all business. In addition cloud computing has also proliferated in the accounting section of the business. All these advancements are bound to influence and delineate the future of chartered accountants in India. Following research papers tries to throw light upon the state of art for the cloud computing paradigm among the qualified and practicing chartered accountants in the district of Udaipur. The focus of this paper is three fold. First, the level of awareness and adoption of cloud computing based accounting was explored among the chartered accountants of Udaipur. Secondly, reasons were identified for the adoption/ non adoption of the technology.

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In the third stage an association between awareness of cloud computing technology and age of the chartered accountant and the relation between the awareness of the cloud based accounting and gender of the chartered accountants in the district of Udaipur was found.

Cloud Accounting

In 2008, Buyya et.al. defined cloud computing as 'A type of parallel and distributed system consisting of a collection of interconnected and virtualized computers that are dynamically provisioned and presented as one or more unified computing resources based on service- level agreements'. Cloud computing finds its importance and application in various applications of business and so it has its own worth and application in accounting. Accounting is an integral part of any business model and so the best cloud accounting model can be tailor made which best matches with the requirements of the business organization and adds value to both financial aspects and to the business itself. Cloud accounting thus targets toward reducing the labour of accounting professionals by integrating on line system to the numerous demands and complex activities. In this paper we have tried to explain the concept of cloud accounting through some of its functions (*otilia dimitriu et al*):

- Automatic generation of accounting notes for different transactions and operations.
- Automatic review in order to ensure the correlation between financial and management accounting for the accounts involved.
- Preparation of any required periodical statements or synthetic financial reports and dashboards.
- The possibility to use any alternative financial plans for preparation of accounting reports using different financial reporting standards.

Review of Literature

Ercan, 2010: Cloud computing is an emerging application platform and aims to share data, calculations and services among users. The methods to model it with the challenges like user interface, task distribution and coordination issues are explained and evaluated in their paper.

Mell & Grance, 2011: Defined cloud computing as a model for enabling convenient, on- demand network access to share pool of configurable computing resources that can be rapidly provisioned and released with minimal management effort of service provider interaction. The service model in cloud computing are classified based on the user requirements, namely (1) Infrastructure as a service (IaaS) where users have control over the operating system, storage, network and application (2) Platform as a service (PaaS), where the users have the control over the application but not over the infrastructure (3) Software as a service (SaaS), where users only access services from the service providers and no control over the applications or infrastructure. The types of cloud deployment are also divided into either public cloud (non-exclusive) and private cloud (exclusive). The applications cover a wide range of areas inclusive of word processing, social media, project management, email, web development, data storage, accounting, file hosting and note taking. The advantages of cloud computing include creating economies of scale by waiving the upfront cost for infrastructures acquisition hence leads for cost saving.

Gupta, Sheetharaman, & Rudolph, 2013: Presented five factors influencing the cloud usage by small and medium size enterprises ,whose needs and business requirements are very different from large enterprises. Ease of use and convenience is the biggest favourable factor followed by security and privacy and then comes the cost reduction. SMEs do not consider clouds as reliable and at last SMEs do not want to use clouds for sharing and collaboration and prefer their old convenient methods for sharing and collaborating their stakeholders,

Walterbusch, Martens, & Teuteberg, 2013: Found that decision process in cloud computing are conducted adhoc and lack systematic method. The presented method raises the awareness of indirect and hidden costs in cloud computing. Their purpose was to present a total cost of ownership approach for cloud computing services.

Sookhak, Akhuzada, Gani, Khan, & Anuar, 2014: Proposed effectual remote data auditing techniques based on algebraic signature properties for cloud storage system and also presented a new data structure capable of efficiently supporting dynamic data operations like append, insert, modify and delete. The comparative analysis with the state of the art RDA scheme showed that the proposed scheme was secure and highly efficient in terms of computations and communication overhead on the auditor and server.

Dimitru & Matei, 2014: Highlighted different points of views and definitions assigned to the concept of 'cloud accounting' and also the benefits and possible risks determined by the adoption of these services, particularly in the field of accounting department. They also analyzed the key aspects that should be considered by any company when deciding to choose the right accounting system.

Business Standard Published Aug., 2016: An article "India has huge potential for cloud services: Alibaba" .The article said that Alibaba's (A Chinese IT Giant) entry in India in the cloud computing paradigm will add to the fierce competition between Amozon and Microsoft in India. The same newspaper of July, 2014 wrote in an article by Itika Sharma, "Cloud Computing: sky is the limit for IT firms" that as much as 20-25% of large outsourcing deals in India now involve cloud computing.

Research Gap

After an intense study in the related field of cloud computing it was found that no concrete research work related to cloud based accounting was done in India and particularly in context to chartered accountant. This research gap motivated us to work on our set of objectives.

Research Methodology

Objective of the Study

- To explore the level of awareness and adoption of cloud based accounting among the qualified chartered accountants of Udaipur District.
- To examine the reason for adoption and non adoption of the cloud based accounting.
- To increase the awareness among the chartered accountants of Udaipur district regarding the concept of cloud based accounting.
- To find the relation of Age and gender with awareness of cloud based accounting.

Type of Research: Exploratory & Empirical Research the research is exploratory because the reasons for the adoption and non adoption of cloud based accounting were explored and empirical because a relation between age, gender and adoption of cloud based accounting was found.

Data Collection Method: Data was collected through mailed Questionnaire Method of sampling- Convenient Sampling Sample Size -140 Qualified Chartered Accountants of Udaipur district.

Sampling Frame: Qualified chartered accountants of Udaipur district.

Test- Chi Square test was used to find the association between age, gender and adoption of cloud based accounting.

Hypothesis Framed for the Study

H_{o1} : There is no association between age of CA and awareness of cloud based accounting.

H_{o2} : There is no association between Gender of CA and awareness of cloud based accounting.

Limitation of the Study

We sent Questionnaire to 200 Chartered accountant of Udaipur district. Questionnaire were prepared online by using Google Form which is based on cloud computing. Only 140 out of 200 Chartered accountants responded. Research was restricted to Udaipur district only.

Data Analysis and Interpretation

Table 1: Demographic profile of Respondents

Age	Frequency	Percent	Years of Experience	Frequency	Percent
Below 25	20	14.30%	Less than 5 years	40	28.60%
25-35 Years	100	71.40%	5-10 years	70	50%
Above 35	20	14.30%	More than 10 years	30	21.40%
Total	140	100.00%	Total	140	100.00%
Gender	Frequency	Percent			
Male	70	50%			
Female	70	50%			
Total	140	100.00%			

Source: Own computation

Interpretation

Around 71.40 % of the respondents were 25-35 years of age. Out of total 140 respondents 50% were male and 50 % were female. Most of them were having 5to 10 years of experience.

Table 2: Reasons for not Using Cloud based Accounting (n=40)

	Frequency	Percentage
I have never thought about Using/Not using Cloud Accounting	20	50%
Because I don't know exactly about what I can do with 'Cloud computing'	10	25%
Because when the confidential data is disclosed and published, on internet can be accessed easier by hackers	20	50%

fear of increasing cost	20	50%
I am not willing to change	10	25%
Cloud computing is not so popular and I am not sure about its future that can be success or failure	10	25%
I may be bound by the cloud providers lock in period	0	
No access to high speed internet to be able to use cloud computing	10	25%
Lack of ability to customize	10	25%

Source: Own computation

Interpretation

Out of 140 respondents 40 respondents were not using Cloud based Accounting. These 40 respondents includes the 20 respondents who were not aware of the technology and 20 respondents who were aware but for certain reasons were currently not availing the use of the available technology of cloud computing. Of these 40 respondents, 50 % respondents said that. They had never thought of using cloud computing based accounting or 2) feared that once their confidential data is disclosed and published on internet it could be accessed easily by the hackers. 25% of these respondents (who are not using cloud based accounting) said that they were not using it because 1) They were not willing to switch over from their traditional way 2) They felt that cloud computing was not so popular and so they are not sure about its future. 3) Some felt that since they didn't had access to high speed internet to support cloud based accounting, it was wise not to use it at all. 4) Few others did not support the concept owing to lack of customization.

Table 3: Reasons for Using Cloud Based Accounting (n=100)

	Frequency	Percentage
Instant scalability	30	30%
Location Independent	100	100%
Cost saving on hardware	40	40%
Cost saving on software	40	40%
Cost saving on IT staff	30	30%
Ability to address numerous and complex demands	20	20%
Reduced labour required by the IT staff	0	0
No upfront investment	50	50%
Automation of work	50	50%
Facilitates the generation of accounting reports and documents whenever they are necessary	40	40%

Source: Own computation

Interpretation

Out of the 140 respondents we found 100 respondents were aware and are using cloud computing. Of these 100 respondents all of them i.e. 100% of them used cloud based accounting because of Location Independence which gave the users the ease to access data anywhere and anytime and the facility to connect to the cloud easily over the internet. 50 % of these respondents said that they used this technical facility because of 1) automation of work like automatic generation of accounting notes for different transactions and operations and because. 2) No upfront investment is required. Some chartered accountant felt that cloud based accounting helps to reduce cost. Not a single CA opined on the fact that it helps to reduce labour required by the IT staff.

Table 4: Types of Cloud Computing Services Used by CA

	Frequency	Percentage
Infrastructure as a service	70	70%
Platform as a service	0	0%
Software as a service	50	50%

Source: Own computation

Interpretation

Out of the 100 respondents who used cloud based accounting most of them (70%) were using infrastructure as a service (IaaS). Of these 70 respondents, it was found that all of them were using the storage service of the service providers. We found that none of them, as expected used platform as a service. Further it was found that 50 % of the respondents used software as a service.

Table 5: Plans for Using Cloud Based Accounting in Future

	Frequency	percent
Yes	84	60%
No	0	0
May be	56	40%
Total	140	100%

Source: Own Computation

Interpretation

60 % of the respondents said that after going through our questionnaire they would adopt the cloud based accounting. 40 % said they are not sure of using cloud based accounting in their working. It was interesting to know that all of them had future plans to use cloud based accounting in future.

Hypothesis Testing

Hull Hypothesis: There is no association between age of CA and awareness of cloud based accounting.

Table 6: Association between age of CA and Awareness of Cloud Based Accounting

Age Awareness of Cloud based accounting	Below 25	25-35	Above 35	Total
Yes	20	90	10	120
No	0	10	10	20
	20	100	20	140

Calculated value of Chi square is = 39.65, Table Value at 5 % Level of significance and 2 DOF is 5.99

Source: Own Computation

- Decision & Conclusion- Since chi square calculated is greater than table value so we **reject** null hypothesis at 5%LOS and hence conclude that there is association between age of CA and adoption of cloud based accounting.
- With observation we can conclude that the young chartered accountants between the age group 25-35 are more open to embrace technology and use cloud accounting to their benefits.

Hull Hypothesis: There is no association between Gender of CA and awareness of cloud based accounting.

Table 7: Association between Gender of CA and Awareness of Cloud base Accounting

Gender Awareness of Cloud based Accounting	Male	Female	Total
Yes	60	60	120
No	10	10	20
Total	70	70	140

Calculated value of Chi square is = 1.807, Table Value at 5 % Level of significance and 1 DOF is 3.841

Source: Own Computation

- Decision & Conclusion- Since chi square calculated is smaller than table value so we **accept** null hypothesis at 5%LOS and hence conclude that there is no association between Gender of CA and adoption of cloud based accounting. This leads us to the fact that both the males and the females in the business of accounting are equally using the cloud accounting techniques.

Conclusions

The objective of the study was to analyze the level of awareness and importance of cloud based computing among the chartered accountants of the district of Udaipur. we found it appropriate to study the awareness and adoption level of the chartered accountants because they are the prime source of external and even internal advise to various types of organizations with regard to accounting technology. In this regard, we studied the perception of 140 chartered accountants whom we could contact through questionnaire and mail. We found that most of them were aware of the basic concept of cloud computing. A very few number was unaware of the concept. When probed in detail we found that this small number which was not using or was unaware feared the security of their data if at all they used the cloud computing. We also found that most of them feared that use of cloud computing will increase their total cost and so they were not willing to switch over from their traditional method. Few respondents showed the lack of high speed internet facility as a hindrance in using cloud computing.

We also realized that respondents fear that since the concept is at a building stage its future is not certain and so they will enter the arena only when its time proven and tested. The study also revealed few interesting facts. Of the 100 respondents who were aware and used cloud computing, all of them used the facility because it provided them location independence they could access their data anytime from anywhere which also provided them a backup security. Most of them also felt that (unlike those who did not use this technology) use of this technology helped them to save their cost through automation of work, reduced investment in hardware and software. They also realized that use of technology helped them to address numerous tasks and complex demands and this ultimately helped them to serve their clients better.

In order to study the adoption level among these chartered accountants, we tried to find out the type of cloud computing facility they availed. It is interesting to note here that all of them used the IaaS (infrastructure as a service). They all used the storage as a service to enhance their data storage capacity either to save on internal storage capacity or as a backup facility. Only Fifty percent of them used the SaaS (software as a service). This we understand can be because either they are unaware of the service or can be because of the standardization of the software package. In our efforts, we also tried to find the association between the age of the chartered accountants and the use of technology and also the association between the gender of these professionals and use of cloud based accounting techniques. In accordance to our expectations we found that the young professionals were keener to adopt new technology and we were also pleased to find that women in the profession of chartered accountancy were not on a back footing in adopting cloud computing based accounting. We also found in our research that all of the 140 respondents were willing to expand their work and use cloud computing (Ercan, 2010) services in one or the other way after understanding the multiple benefits explained through our questionnaire.

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