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## Cloud accounting adoption in SMEs: An overview

Abram Yuda Sibuea<sup>1</sup>, Marnanda B Sinaga<sup>2</sup>, Iskandar Muda<sup>3</sup>

<sup>1, 2, 3</sup> Universitas Sumatera Utara, Medan, Indonesia

Corresponding Author: Abram Yuda Sibuea

### Abstract

Cloud technology is one important development in information technology that has a big impact on financial reporting for both businesses and individuals. It is considered to be a necessary tool for organization and will improve the quality of financial information and the business strategy. Accounting has improved significantly with the usage of cloud technology. Cloud accounting is one of the sophisticated technologies which can play an important role

in small and medium sized enterprises. It will help small and medium business to provide quality financial report and settle on better and fast choice in decision making. The purpose of this paper is to contribute to a growing body of research on cloud technology in accounting, by studying the small to medium-sized enterprises (SMEs) adoption process, how it will affect them and what preparation the need before adopt the technology.

**Keywords:** cloud accounting, cloud computing, cloud accounting adoption in SMEs

### 1. Introduction

Cloud technology can give improvement in business competitiveness, and has provided some advantages for small and medium sized enterprises, enabling them to compete with large firms. Some of the promised benefits from cloud computing can be very appealing for Small and Medium Enterprises (SMEs), which need to maximise the return on their investment and still remain competitive in an ever-demanding business environment. If SMEs have access to scalable technologies they could potentially deliver products and services that in the past only large enterprises could deliver, flattening the competitive arena.

The change from traditional accounting to cloud solution cannot change the role of the accounting information systems as a base for providing the financial information for decision-making to internal and external users. However the integration of accounting information systems into cloud systems introduces many advantages and opportunities especially for SMEs beside disadvantages and challenges that come with it. Before SMEs adopt cloud accounting, it is important to understand the factors in adoption decisions and the work required for the adaptation. This paper proposes to explain the factors that influences cloud accounting adoption by SMEs. In addition, this paper examines how and why SMEs should adopt cloud computing.

### 2. Literature review

Before proceeding with the literature review and the discussion about cloud accounting adoption, it is important to define what cloud computing and cloud accounting are. Cloud computing services have been defined in many different ways, typically focusing on technical and service characteristics. Cloud system or cloud computing is the on demand delivery of computing services that do not need the active management by the users of the service (Sobhan, 2020). It offers services consisting of hardware and software using the internet. In cloud system, services like data and software can be accessed from anywhere and anytime using the internet or other networking devices via the service provider of the cloud application.

The development of cloud computing has led to the invention of cloud accounting. Cloud computing acts as the basis of cloud accounting. It is also known as 'online accounting'. It includes all the functionalities and services provided by accounting software installed on the computer of the client but it runs on the servers of the Common Service Provider (CSP) (Sobhan, 2019) [11].

Khanom (2017) [5] has explained the theoretical side of cloud accounting in her paper. She has discussed different aspects of cloud accounting like the models used in cloud accounting, its pros and cons, suitability of cloud accounting etc. According to this study, cloud accounting is more suitable for businesses that are small and cannot ensure security of the data.

Another study conducted by Rao *et al.* (2018) [8] has analyzed the impact of cloud accounting from the accounting professional's perspective. A survey was conducted in India and it was found that although most of the participants of the survey heard of cloud accounting, most of them did not apply the system in their business.

### 3. Method

The descriptive approach was adopted in this study through the collection of previous literature on cloud accounting and their adoption on SME. This study will provide a theoretical overview of cloud accounting adoption for SME. The aim of the paper is to bring together the several facets regarding cloud accounting that could enable the readers to understand the importance of cloud accounting in a business context and to show a comparative view with the conventional accounting. A number of published articles has also been examined to get a view of the researchers in this area. It is a review of cloud computing and cloud accounting adoption in SMEs published in academic journals in the period of 2013 to 2020.

### 4. Discussion

#### 4.1 The importance of cloud technology in accounting

Traditional accounting software is generally purchased as a product and installed on each user's computer but cloud accounting provided as a service and not as a product. By accessing the accounting data via the internet, companies are purchasing the use of accounting software from a specialized service provider and not the software itself (with the required license or even the necessary infrastructure). Cloud accounting solutions are transforming the way that accounting applications are used and they are modernizing the entire business environment. (Dimitriu, 2015) [3].

With the technological advancement, the field of accounting is being improved and updated gradually (Sobhan, 2019) [11]. One of the newest paradigm of accounting is the cloud accounting system. In this system, clients can utilize the software and networking platform provided by a third party vendor for the accounting purpose. Cloud accounting services can be private, public, community or hybrid depending on the need of the client. There are three basic models of cloud accounting namely IaaS (Infrastructure as-a-Service), PaaS (Platform as-a-Service) and SaaS (Software as-a-Service). Although IaaS and PaaS provides more flexibility, SaaS is a cheaper option among these models. Cloud accounting has several benefits over traditional accounting system. It is much cheaper, can be easily accessed, increased data security and is very flexibility. However it also has some drawbacks like requirement of constant internet access, risk of losing data and problem of vendor lock-in.

The adoption of cloud technology in accounting system will increase the quality of financial reporting with high cost efficiency and other scalable options available, as user demand (Andronie, and Ionescu, 2019) [12]. Cloud computing in accounting could ensure unlimited storage of information, data backup and database restore, also creating new applications that allow users online access for better analysis of transactions, business and financial reporting. In this research we identified many managers and specialists interested in cloud computing in accounting and their intention to adopt cloud technology in financial services. It is generally accepted that cloud technology could provide unlimited resource and storage virtualization, simultaneously with efficiency of resource sharing.

Al-zoubi (2017) [6] examined on the Effect of Cloud Computing on Elements of Accounting Information System,

The examination recognizes the effect of Cloud Computing on the Elements of the Accounting Information System spoke to by: Establishment "Bookkeeping Entity.", Financial Operations, Documents, Accounting Books, Financial Reporting, Users, Procedures, Software, and Physical Devices. The examination gathered past writing on distributed computing and data innovation and studies their effect on bookkeeping data frameworks. The examination discovered that Cloud Computing lead to reducing the size of the venture as far as the structure and the workplaces since they permit property anyplace without the executives responsibility to a particular area.

#### 4.2 Advantages/Benefits

Prior researched have found that cloud accounting service model have significant effects on achieving cost efficiency and better payoffs and return on investments in information technologies and systems (Skafi, Yunis, and Zekri, 2020) [14]. Another benefit for adopting in cloud accounting is a cost efficiency service that allows effectiveness in business activities. As for SMEs budgeting, it helps in lowering capital expenses of buying new hardware and software and by providing the efficient amount of electricity, bandwidth, operations and storage when it is needed. Cloud computing does not require IT staff to spend time on routine daily work, instead companies will focus on improving services and applications to reach business goals. The main goal for SMEs in particular investing in cloud computing mainly is to achieve these strategic objectives of efficiency and better performance.

Other important benefit of cloud accounting is unlimited storage of information, data backup and database restore, also creating new applications that allow users online access for better analysis of transactions, business dan financial reporting.

Cloud accounting has taken the accounting profession into a whole new dimension. Clients can be benefited in many ways by using the cloud accounting system. Sobhan (2019) [11], has classified major benefits of cloud accounting as follow:

##### a. Lower Cost

In a cloud accounting system, a client firm does not need to invest in capital expenditures such as installment of IT equipment or software licenses, no need to recruit new staffs for maintaining and monitoring the IT equipment and software. Another reason why cloud accounting is cheaper than traditional accounting is that the client can use the 'pay per use' service and not need to pay any fee in excess of the usage amount. This benefit is particularly important for the new SMEs model where being cost effective is very important.

##### b. Easy access to all information

Accessibility is another benefit from implementing of cloud accounting like data of transactions or financial reporting. Unlike traditional accounting, the user does not have to rely on financial statements or on spot checking of company records in order to have updated information of her business. The user can easily collect and monitor the financial information sitting at home with the help of a mobile or a computer. Besides cloud accounting provides users with a

24/7 access to the services provided by the server of the vendor.

### c. Increased Security

The main concern that might raise of cloud accounting is that to ensure better security of the financial data of a company. Data stored at the client's company is always at a risk of being attacked by different viruses or stolen by employees having low morale. But cloud accounting provides better security by including multiple layers of protections like passwords and other security checks for getting access to the data.

### d. Large Storage and Automatic Backups

In a large organization with huge amounts of daily transactions, it is very difficult to store and maintain all the data. Besides, there is always a risk of losing the important data due to employee error or accident. But cloud accounting offers a huge amount of storage capacity to store all the data of the client firm. Besides, its auto backup feature makes it more reliable and a safe source for storing data.

### e. Flexibility

Another important benefit of cloud accounting is its flexibility. It is compatible to different types of web browsing software and operating systems. Besides, the IaaS and PaaS enable the client to customize the software based on their needs. Hopefully it will be very popular in the business sector.

## 4.3 Disadvantages/Risks

Despite the fact that cloud accounting has many advantages in the field of accounting, implementing it also have disadvantages or risks to mitigate, such as cybersecurity, hacking, privacy risks, lack of technical knowledge, limited interoperability, limited data portability, lack of trust due to loss of control and ignorance.

The risk that caused failure of many organizations in applying cloud computing is a failure in cloud migration projects (Musiienko, 2017) <sup>[7]</sup>. Migrating enterprise systems and data to the cloud system has already been proved to be an unsettled course for several businesses, which makes it prudent to examine the factors that enable the success of adopting digital technologies in SMEs.

Studies show that the setting up of Small and Medium Enterprises (SMEs) have expanded enormously during the most recent decade in developing countries, owing to the important role SMEs are playing in providing job opportunities and contributing in the development of an economy. In spite of that, when it comes to digital transition, SMEs are left behind. Although digitalization provides SMEs with new opportunities to enter the global market, evidence shows that SMEs are still behind big companies when it comes to digital transition or technology adoption.

Other aspects that conducted by prior research have investigated is the relationship between trust in cloud computing services and data privacy (Gangwar, Date, and Ramaswamy, 2015). The reputation and privacy policies of cloud service providers has been found to influence the trust consumers have in the services of these providers. Reports from academic research and industry show that SMEs have not benefited as they should from the advantages of cloud computing technology.

Researchers highlighted the technical factors that influence cloud computing adoption. Examples of these factors are

relative advantage, ambiguity, compatibility, difficulty, and trialability. Avram (2013) <sup>[1]</sup> mentioned technological factors such as security and privacy to be crucial in the adoption decision. He emphasized that companies face several different requirements in their efforts to proper handle individuals' data to ensure data privacy, and it has not yet been determined.

Besides the risk of cloud computing, SMEs need to take into account some major obstacles before implementing it. They are given below (Sobhan, 2019) <sup>[11]</sup>:

### a. Constant Internet Access

Cloud accounting requires a constant internet access for operation. It may not be possible for all the time. Sometimes, the internet may not be available due to maintenance by the ISP, restriction from government, network problem etc. Besides, cloud accounting may not be the best option in areas with high internet costs.

### b. Risk of Losing Data

Although cloud accounting provides better security than traditional accounting, there is still a possibility of security breach. Nowadays, with the development of technologies, the hackers are also becoming more advanced and have sophisticated tools for hacking. Besides there always remains a risk of service disruptions that can make the confidential data of a company viral.

### c. Vendor Lock-in

Another drawback of cloud accounting is the vendor lock-in. It is very difficult for a client to move from one vendor to another as this system has not completely evolved yet. Besides, different vendors provide different platforms that makes it tougher for a client to migrate.

## 4.4 Cloud Adoption

Although, cloud computing is compelling to customers, it is still considered as an emerging technology among the SMEs due to some challenges (Khan, and Yasiri, 2015) <sup>[2]</sup>. There are a number of barriers hindering cloud computing adoption among SMEs. Lack of internal staff expertise hindering cloud computing in transforming SMEs, concern over data and its safety, prohibits classified data to be placed on shared or outsourced infrastructure, perplexed over regulatory and service terms in cloud contracts are some challenges that can be identified. All the challenges are directly related to a bigger problem; which is the lack of framework for SMEs that directs the process of migration to clouds. Eventually, a framework for SMEs could offer an answer to such problems in a structured manner to expedite the cloud adoption among SMEs.

Khan, and Yasiri, (2015) <sup>[2]</sup> found a conceptual framework for SMEs that could offer an answer to such problems in a structured manner to expedite the cloud adoption among SMEs. Their research provides the design and explanation of the components of cloud framework. The framework in their research is the stepwise guide for the SMEs to follow their journey on cloud adoption. This framework is divided in three stage migration process; cloud preparation stage, cloud requirement stage and cloud migration.

1. Cloud Requirement Stage elaborates regarding cloud computing services and deployment models that may be required by SMEs.
2. Cloud Preparation Stage focuses onto the preparation

part of the enterprises, as it will help them to understand the current situation of their business processes and guide them to progress in cloud adoption. Feasibility study, risk assessment, stake holder needs identification are parts of this stage.

3. Cloud Migration Stage describes about the migration of SME to cloud computing and going live process. Cloud service provider and cloud contract, migration testing and deployment, and monitoring and maintenance are some phases of this stage.

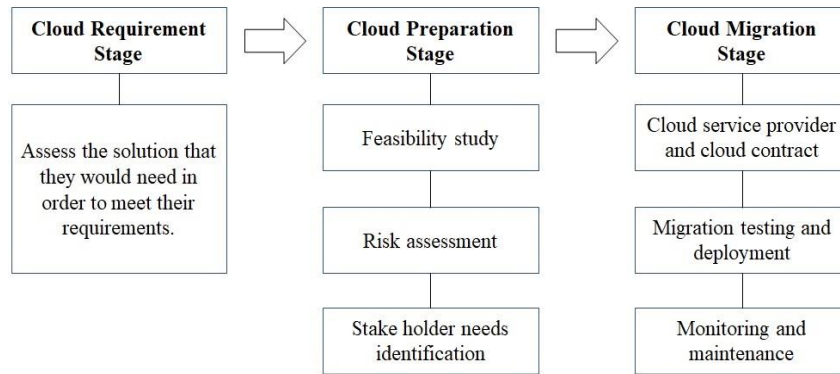


Fig 1: Cloud Computing Adoption Stage in SMEs

(Adapted from “Framework For Cloud Computing Adoption: A Roadmap For SMEs To Cloud Migration by Nabeel Khan and Adil Al-Yasiri, 2015) [2]

On the other hands cloud accounting as part of cloud technology can have an immediate impact on the way organization work through smarter processes and powerful insights to guide your decisions. Five ways to use accounting technology to get financial house in order for small business (McLiver, 2020) [15]

1. Move your business on to the cloud. Investigate the cloud accounting solutions available that have great solutions for small businesses and Ask your accountant which packages they use and recommend.
2. Use cloud-based apps to start saving time and money. Investigate the accounting tools to see which ones have the functionality to solve the challenges you’ve identified, efficient and can save time
3. Draw on your accountant’s experience to reap the benefits faster. Use your accountant’s knowledge of the market to guide you through the options. Learn from others that have gone before you, to give your business a smoother start.
4. Develop better data habits. Work with your accountant or adviser to improve your data practices. Encourage your teams to use these systems to collaborate
5. Use insights tools to turn data into actionable guidance.

Consider using a tool which translates your business data into meaningful, real-time insights and connect it to your online accounting software.

Sobhan (2019) [11] summarized four critical factors that are needed to be considered for the adoption of cloud accounting system from his research in Bangladesh. The factors are listed below

1. External Factors plays an important role by influencing the decision about the adoption of cloud accounting in a business. These factors include pressure from competitors, pressure from society, pressure or support from government, and support from vendors.
2. Organizational Factors may vary from one organization to another based on their characteristics. Some of these factors include governance and policy, knowledge awareness and support from top management.
3. Technological Factors deals with the physical appearance of cloud accounting technology. These includes cost effectiveness, reliability, security and complexity.
4. Environmental Factor is an important factor in adopting cloud accounting. The awareness of decision maker regarding sustainability of the environment is part of this factor.

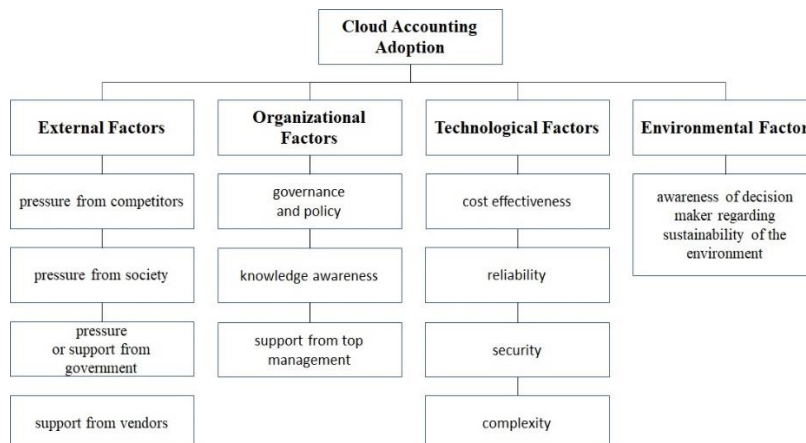


Fig 2: Factors considered for the adoption of cloud accounting

(Adopted from The Concept of Cloud Accounting and its Adoption in Bangladesh by Raihan Sobhan, 2019) <sup>[11]</sup>

After reviewing the theoretical literature that talked about cloud computing, and cloud accounting systems, firms hopefully can decide recommended infrastructure, software, personnel, procedures and data based on that review that suit for them. Every firms hold unique characteristics and need to assess the implementation of cloud accounting system based on their business nature.

## 5. Conclusion

The usage of cloud computing is in SMEs require services more in the area of offering infrastructure and software as a service. A number of issues were discussed above, which have a great impact on cloud adoption among small and medium size enterprises. The study and analysis of these issues have led to proposition of framework for cloud computing adoption, which give the understanding and a roadmap to SMEs on how to approach cloud vendors or specifically how to adopt cloud computing and minimize potential barriers. The cloud adoption stage, identified in this paper will certainly be helpful to guide SMEs to make a choice for cloud application to support their business. Such framework will ease up cloud migration by assessing organization's readiness for the cloud through parameters like governance, risks involved, standards, data classification and responsibilities. Also, it will enable organizations to identify stakeholder needs, select right CSP and sign a favourable cloud contract, which will help SMEs in a smooth transition to cloud.

Cloud accounting has been believed to be valuable to both little and medium scale firms. Cloud accounting is a very important tool which aids the credibility of the financial state and also helps in increasing the performance of SMEs (Owolabi and Izang, 2020) <sup>[13]</sup>. With the technological advancement, the field of accounting is being improved and updated gradually (Sobhan, 2019) <sup>[11]</sup>. In this system, clients can utilize the software and networking platform provided by a third-party vendor for the accounting purpose. Cloud accounting has several advantages over traditional accounting system but it also has some risks that need to be considered before adopting it. The adoption of cloud accounting into the company's business without sufficient planning will cause a failure in cloud migration process. Before the adoption SMEs need to assess the implementation of cloud accounting system based on their unique characteristics and business nature.

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