Cloud Accounting: A Theoretical Overview

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Abstract: Accounting, being the language of business, has been serving every trade ever since its beginning. The practice of accounting has been improved significantly by the emergence of accounting software using the cloud technology, which is one of the tremendous IT innovations over the last decade. Today the ever-changing business world is becoming more and more competitive and sophisticated with the advancement of cloud technology. Like other sectors of business, accounting has also embraced cloud computing solutions in order to provide relevant and particular information as well as a real time overview of business for all stakeholders. Although cloud accounting is becoming more and more common day-by-day, many business owners and professionals are not quite sure about what it is, what its benefits are or how it will shape the future accounting. This paper has been made in an attempt to provide a theoretical overview of cloud accounting covering its concept, benefits, shortcomings, comparison with the traditional one and some other important aspects that may shape the accounting profession in the coming years. In this paper the information has been collected and prepared depending on the most recent studies and researches conducted by accounting professionals and expert opinions.

Keywords: accounting, accounting software, cloud, cloud accounting, cloud technology.

I. Introduction

Accounting is an industry that is undergoing so much change, largely sparked by vast advances in technology. The evolution of cloud accounting is changing customer expectations and accountants are rethinking the way they operate to meet the new, often heightened, demands. People are ready to not be tied to the paperwork in their business; they want to focus on the things they are most passionate about. Technology is helping them find a better work/life integration. With cloud computing, businesses can have up to the hour, even minute, financial information that can be fully accessible and managed by their accountant.

One of the biggest technological trends at the moment is the emergence of cloud technology. The cloud is a platform to make data and software accessible online anytime, anywhere, from almost any device having an internet connection. In cloud computing, users access software applications remotely through the internet or other network via a cloud application service provider. Likewise, in cloud accounting, data is sent into “the cloud”, where it is processed and returned to the user. All application functions are performed off-site, not on the users’ desktop, which frees the business from having to install and maintain software on individual desktop computers.

![Cloud Accounting](image)

Figure 1: cloud accounting

Traditional accounting software is generally bought as a product and installed on each user’s desktop while, cloud accounting is provided as a service. When accounting data are accessed by companies via the internet, they are buying the use of accounting software from an expertise service provider, and not the software itself. Thus, Cloud accounting solutions are transforming the way that accounting applications are used and they are modernizing the entire business environment. [1]
This study will provide a theoretical overview of various important issues pertinent to cloud accounting at one place. 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. Furthermore the study will try to explore the possible shortcomings and potential changes of accounting in the forthcoming future. There is not so much paperwork or academic literature available on this topic that could serve as an overview and provide much information. The articles available are specifically technical reports, market analysis and surveys. The study is qualitative in nature and information is gathered from the viewpoint of different business practitioners, especially the accountants. A small number of published articles has also been examined to get a view of the researchers in this area.

II. Concept Of Cloud

There is not an unified definition of cloud computing until now, as it is a metaphor for the internet. In the cloud computing all the resources are arranged together in the cloud storage center, where users can enjoy unlimited resources and computing power as long as they use a terminal to attach the internet. The concept of ‘cloud accounting’ was first put forward by Ping and Xuefeng (2011). Cloud accounting has been defined by them as the utilization of cloud computing in internet to build a virtual accounting information system, i.e.; cloud computing plus accounting equals cloud accounting.[2]

2.1: All cloud services are provided “as a service” and are offered in three forms- SaaS, PaaS and IaaS(Fig.-2)[3].

![Figure 2: presentation of cloud services types](image)

2.1.1: SaaS (Software as-a-Service): The software deployment model, which is the highest form of services that deliver special purpose software to the consumer to use the provider’s applications running on a cloud infrastructure through the internet is referred to as Software as-a-Service. It is sometimes referred to as "on-demand software" and is usually priced on a pay-per-use basis. This eliminates the need to install and run the application on the cloud user’s own computers, which simplifies maintenance and support. SaaS providers generally price applications using a subscription fee. The main drawback of SaaS is that the users’ data are stored on the cloud provider's server.

2.1.2: PaaS (Platform as-a-service): The software deployment model whereby a computing platform is provided as an on-demand service upon which applications can be developed and deployed is referred to as platform as-a-service. It is built on the top of IaaS and joins with software as a service (SaaS) and infrastructure as a service (IaaS), where application developers can develop and run their software solutions on a cloud platform without the cost and complexity of buying and managing the underlying hardware and software layers.

2.1.3: IaaS (Infrastructure as-a-Service): The software deployment model where the basic computing infrastructure of server, software, and network equipment’s are provided as an on-demand service upon which a platform can be developed and execution of applications can be established is referred to as Infrastructure as-a-Service. Its main purpose is to avoid purchasing, housing, and managing the basic hardware and software
infrastructure components, and instead obtain those resources as virtualized objects controllable via a service interface.

2.2: There are four types of deployment models of cloud technology:

2.2.1: Private Cloud: The cloud infrastructure that is managed and operated for one organization only, so that a consistent level of control over security, privacy, and governance can be maintained is called private cloud. It is also known as Internal Cloud or on-premises Cloud. It may be managed by the organization or a third party and may exist on premise or off premise.

2.2.2: Public Cloud: The cloud infrastructure that is made available to the general public or a large industry group and is owned by an organization selling cloud services is called public cloud. It is also known as external cloud or multitenant cloud.

2.2.3: Community Cloud: The infrastructure which is referred to as special-purpose cloud computing environments shared and managed by a number of related organizations participating in a common domain or vertical market is called community cloud. It may be managed by the organizations or a third party and may exist on premise or off premise.

2.2.4: Hybrid Cloud: The cloud infrastructures that is composition of two or more distinct cloud infrastructure (private, community or public) but are bound together by standardized technology that enable data and application portability is called hybrid cloud. It provides benefits of multiple deployment.[3]

III. Reasons For Using Cloud Services

There are a number of reasons that influence a company to use cloud services. These are:

1. Maintaining Focus on the Business: Businesses are realizing that running an IT department is not their core competency, they are better lawyers, doctors or plumbers. Buying cloud services, either in the form of a single application or their entire datacenter is often more cost effective, more reliable and lets them reallocate their limited resources to growing their business.

2. Business Agility: Businesses with significant technology investments can find themselves unable to take advantage of shifts in the market or respond to competitive pressures because the capital, people or time are not available in the measure needed to react. Cloud services remove these barriers, allowing businesses to continually adapt their technology needs to their business without the costs that would normally have to be considered with an onsite datacenter.

3. Reduced Capital Expenditures: Large capital investments can be minimized or eliminated altogether in favor of small monthly payments. Capital can be protected as keeping capital and operational expenses to a minimum can be very important to small and medium businesses alike.

4. Scale: Businesses that have peak seasons or different seasonal staffing demands can benefit from cloud services by letting them temporarily dial up more capacity for the seasonal business peaks, without purchasing the hardware or software that would otherwise go unused during the slower times of the year.

5. Access from Anywhere: Being able to do business without borders is one of the major benefits of cloud services. Access to the applications and data is available to authorized users anywhere there is Internet access.

6. Staffing Efficiency: Cloud services can help maintain an efficient technology staff, outsourcing key technical specializations or technology staff as it makes sense for the business.

IV. Importance Of Cloud Technology In Accounting

Cloud accounting can be advantageous in many ways in today’s business world, which may be summarized as:

4.1 Less costs

One of the first areas where cloud accounting outscores traditional accounting is the cost. With a cloud-based system, businesses do not make a lump-sum purchase of a program, or buy and set up a server to host it. This minimizes IT professional fees and helps to avoid installation fees altogether. As accounting rules and tax regulations change, one won’t have to purchase and install updates. Instead, the monthly or annual subscription cost includes the updating cost, and these are completed by the provider as needed.[4]

4.2 Real-Time Information Updating

One of the common problems with traditional accounting systems involved updating accounting information. When one figure needed to be changed, it meant manually recording the change in each location where the figure appeared, including forms, ledgers, and other documents. With cloud accounting, when new data is entered, it populates each location where it is required. This saves time, money, and potential headaches that could arise if any locations are missed.[4]
4.3 24/7 Accessibility to All Accounting Information
With traditional accounting, access to the business's detailed financial information was limited by when the accounting professional was available, or when one could get to the office to review the paper-based records or even the desktop computer holding the information. Cloud computing outweighs conventional method in this regard. As long as one has internet access, his/her accounting records are as close as the mobile device.[4]

For example, if a business owner who used to constantly traveling on the road, needed to stay in touch with the business, and keep up with the financial records. If the business owner carried a mobile device with him/her, he/she would still be able to access the financial records and transactions whenever. Even if they are not in the office, they are still playing a major role in the workplace, and are essentially taking the business with them.

4.4 Security of Financial Information
Cloud accounting is also important, because it keeps all financial information secured. A person may think- by storing on one desktop, will keep the data safe, but this is likely to cause problems in the long run. Not only might there be someone in the workplace looking to steal the financial information, but also the personal desktop may become susceptible to a virus and there may be no way to recover it. If all the financial records are stored via the Internet, however, there is no matter of loss even if the desktop and hard drive files were deleted. After all, they are still accessible via cloud.[5]

4.5 Team-Wide Availability
Cloud accounting benefits entire business teams because the data is available to all authorized users at all times. It is easily scalable. Adding new users is simple—just by setting up an authorized profile and password. Even better, it makes collaboration easier. There is no more need to gather in one office and take turns to reviewing important documents. All authorized users with access to the internet can see accounting data simultaneously, from wherever they may be.[4]

4.6 Immediate Fixes
During the previous paper-based systems, if there were any problems with the program, users were required to wait patiently for the next version for the bugs to be fixed. Among the benefits of cloud accounting, fixing software issues immediately is among the most important.[4]

4.7 Allows for Better Cost Efficiency in the Workplace
No matter how professional or efficient a business is, there is always room for improvement[5]. Whether seeking ways to better stay in touch with the customers, or trying to keep the business more secure, cloud accounting helps with some of the drawbacks that come with owning a business. For example, many business tools have to be paid for in full. One of the best things about cloud accounting, however, is that one can enjoy the benefit of ‘pay as you go’. A monthly plan can even be set up, and it is a great way to compensate if someone on a tight budget.

4.8 Automatic Data Back Up and Restoration
Another area where cloud accounting trumps traditional accounting is when it comes to automatic data back up and restoration. It was not that long ago that daily, weekly, and/or monthly data backup had to be scheduled into the workweek. And then someone had to manually backup the recent accounting information. Cloud accounting allows automatic data backup, removing the possibility of forgetting to do it, and reducing the opportunity to make human errors. Instead, accounting information is backed up automatically and saved to an offsite location. This helps secure the information in the event of a break-in, fire, or other incident that could put sensitive and important information at risk. And should the business experience one of these incidences, the cloud-based service provider can help to restore the data, getting the business back up and running quickly to minimize the impact and inconvenience to the customers.[4]

V. Drawbacks of cloud technology
Some of the major shortcomings of cloud technology are:
- Cloud technology requires a constant internet connection which may not be possible always.
- It does not work well at low speed.
- Security is another major concern for using cloud because there may be data including confidential files which may become viral due to service disruption.
- As cloud storage become more and more familiar, the data they hold becomes more and more of a target.

When someone turning data over to the cloud, it is entrusted to a group of people who will never be met in.
Some companies – usually of large size with lots of sensitive data such as banks and healthcare institutions - would benefit from keeping their data safe to home.[6]

- By allowing working remotely while travelling, may be a matter of risk however, as unsecured Wi-Fi connections may allow unwanted people to access the data. If someone owns a small company, a larger online service may actually be able to provide with more security than s/he can mange by self.
- Many finance and technology leaders fear moving from an on-premises financial system to something unfamiliar like Cloud ERP, holding concerns over the timing and process of software updates, ownership and location of financial data, backup and recovery, availability, security, and getting used to a new system. This is largely a fallacy. Much of the confusion about the Cloud is spread by legacy software vendors who lack solutions with a true multi-tenant Cloud architecture. Many of the risks of moving to the Cloud put forth by legacy vendors are unjustified.[7]

VI. Category of ACCOUNTANTS in effect of cloud

Cloud accounting gives the accountant instant and mobile access to clients’ financial information. Although it is completely changing the way accountants work, the accounting profession is being polarized in respect of cloud technology [8], which categorize the accountants broadly into one of the following three categories:

Category 1: Some accountants are terrified by the cloud and security concerns and are doing everything to avoid it. They are applying the ‘Ostrich strategy’ of burying their head in the sand, which is not wise.

Category 2: These accountants are accepting that cloud technology is here but they are very concerned about its impact on profitability. These accountants see accounts as a commodity. And if Cloud accounting makes it easier to do the bookkeeping and produce accountants then some clients will start to do the work themselves and others will expect lower prices, resulting in less work and lower profits.

Category 3: The third group is excited about cloud accounting and the opportunities it presents to accountants. They thought cloud can dramatically improve their efficiency and/or profitability. Therefore, they have found a way to adapt to change and are reaping the rewards through greater efficiency and profitability.

VII. Suitability Of Cloud Accounting

Both cloud and traditional accounting software have their own benefits, both of which should be considered when making a purchasing decision. Following businesses will fall into the category where cloud accounting may be suitable to use and bring more advantages to them[9]:

- Companies that have a small budget, since it often costs less over time to invest in cloud accounting software than traditional accounting software.
- Businesses with employees who work remotely, since they may prefer the convenience and accessibility of a cloud solution.
- Small companies who cannot provide themselves with adequate security, since many cloud computing companies can keep their information safer from security threats than they can.
- Businesses that want to avoid any potential physical mishaps with technology at an office that could destroy hard drives and, thus, data (fire, flood, burglary, etc.)

Despite the benefits of cloud accounting, some businesses may still prefer to utilize traditional accounting software. Some situations where traditional software might be beneficial [9] include the following:

- Businesses who want tight control over accounting data and don’t want it accessed anywhere there is a non-secure wireless network or where they cannot directly monitor usage.
- Companies that hold very sensitive financial information (banks, etc.), because they don’t want any third-parties to have access to it, and they can completely control the level of security by keeping it in-house.
- Businesses with an uncertain future, since many cloud accounting software programs require a company to sign a usage contract — which can be problematic for a company that doesn’t know how long it’s going to be around.

VIII. Risks Taken By Modern Accountants

From a recent survey, conducted by CPA Trendlines Research, shows that there are several risky initiatives taken by the modern accountants [10], which is related closely to the cloud operations and are summarized as:

- 22 percent of firms said they delivered client tax returns by email, despite the broadly known risks to client privacy.
- Lesser security breaches have wreaked catastrophic consequences on global corporations. Accountants are fooling themselves if they think they are immune.
10 percent of firms have suffered a network failure or software lock-up that caused “major” downtime in the past year. That is a lot of billable hours at stake, not to mention the potentially catastrophic fallout from missed due dates or surprised clients.

Too many firms don’t back up their email safely. Too many have no policy to purge old files, or, if they have a policy, too many don’t follow it.

Most firms don’t even have a regular upgrade schedule for their most critical servers. Most firms have no professionally designed document management system.

The vast majority of accountants are working while on the go. This isn’t new, of course, but the risks of something going wrong are only escalating. Not enough firms have deployed sound security policies or installed the systems necessary to safeguard client and firm data.

Speaking of mobility, 55 percent of firms indicated they do not support tablet devices. As a result, 55 percent of firms have no way of managing the security of employee tablet use or any hope of developing a technologically progressive strategy for adoption.

The study clearly shows that firms understand the imperatives of improving workflows – for effectiveness, efficiency, speed, and cost. But too few have any real plans in place to move forward.

The vast majority of firms can’t even budget effectively for their technology. A whopping 85 percent fail to break down their tech spend to a per-person metric. Firms certainly calculate per-person metrics for all sorts of other activities, ranging from rent to pencils to health insurance.

About 38 percent of the people in charge of technology strategies regard technology not as a potential competitive differentiator capable of providing competitive advantage, but, sadly, as a mere expense item.

Perhaps the most alarming finding from the study is that too many firms don’t know what they don’t know. And what they think they know is wrong.

Specifically, a third of firms believe they currently use nothing that could be considered a cloud service.

IX. Myths Associated With Cloud Technology

There are some myths regarding cloud technology possessed by the users along with the real scenario which may be summarized as:[11]

9.1 Myth: The cloud is just the latest tech fad.

Reality: The clients probably do not realize this (few do), but technologists have been expanding, enhancing and utilizing cloud computing platforms since the 1990s. That is right. Cloud computing has been around now for more than 25 years. But it is only been in the past decade or so that it is caught a tailwind and has started affecting businesses in huge ways. Most noticeably, cloud computing has all but eliminated the availability of desktop business software. That means software vendors won’t be providing service and support for desktop spreadsheet or word processing apps in a few years. Therefore, this is not a fad.

9.2 Myth: Small businesses don’t do cloud computing.

Reality: The small business clients have been unwittingly in the cloud for longer than some large businesses. Those helpful applications they have been using to run their businesses—Gmail, AdWords, AdSense, LinkedIn, Evernote, Skype and OneDrive—are all examples of cloud services. The fact is that more small businesses are tapping into the cloud to improve their services and operations.

9.3 Myth: Cloud computing is too expensive for my small business.

Reality: Most cloud computing service providers understand that there is no one-size-fits all cloud solution for every business. Some companies now offer a variety of pricing plans to fit the particular needs of small businesses. That aside, any cloud-based service includes all the operational extras. System maintenance, upgrades, backup protocols, additional hardware and bug fixes, as well as IT professionals that support and orchestrate everything are typically part of a full-service package. That means no headaches, hassles, sweat or, more importantly, extra costs on your end.

9.4 Myth: My financial data isn’t secure in the cloud.

Reality: It is understandable that the small business client would be nervous about sharing or maintaining private financial data in the cloud, even many large businesses have the same concerns. But security is crucial to the success of any cloud service provider, and they invest heavily in strong security measures to keep the data safe. Some cloud accounting software companies, for example, have their own “white hat hackers” on staff to constantly poke, prod and penetrate test applications for vulnerabilities. They even employ dedicated teams of security experts who specialize in cloud computing. They have processes to ensure that they comply with international and domestic regulatory and industry standards. And, of course, they provide regular security updates for their software.
9.5 Myth: If I transition to the cloud, I’ll lose control over my data.
Reality: The complete opposite is true. With cloud computing, small business actually have more control over who can access their financial data. For example, if the owner and the small business client decide to collaborate on the books using cloud accounting software, the client sets permissions for who can access those records. They alone grant access to business partners, in-house accountants and administrators. Thus cloud computing gives small businesses more power — by enabling them to collaborate with financial partners anytime, anywhere and from any connected device.

X. Upcoming Changes In Accounting Profession

In an ever-changing digital world, technology has increased the rate of innovation, causing new trends to shape industries more rapidly than ever. One industry that is going through that type of change, is accounting. Cloud accounting and accounting automation are pushing the industry in new and exciting directions. Many accountants and bookkeepers have identified this change and are working hard to reshape their business[12]. A few of these changing trends are for the accounting industry are:

a. Advisors are moving up the value chain
   Advisors adopting the cloud have more control over their time. They have outsourced the work most accountants dread. Instead of spending their time dealing with manual work, like data entry of bills or driving to their clients to pick up documents, they have “hired” software to do this work for them. This has an immediate impact on advisors who have not yet made the jump into the cloud.

b. Outsourced accounting is growing rapidly
   It has always been commonplace for businesses to outsource their accounting. What is new is that businesses from all over the world can outsource their accounting to firms halfway across the world. Office walls and distance no longer hold accountants and bookkeepers back from prospective clients. There’s no longer a need to travel to a client’s business or work from an office. Wall-covering, stuffed filing cabinets can be left in the past. So can the regularly scheduled task of sitting down at a client’s desk to look through piles of paper. That day spent going through a shoebox of receipts doesn’t have to happen.

c. Client relationships are taking centre stage
   With this trend, the major shift is from a transactional style advisor-client relationship, where a significant portion of the interaction was based on what documents were still needed. The trend is moving advisor-client relationships to value-driven interactions. This is a significantly more positive interaction for clients and will drastically change how they perceive their accountants and bookkeepers.

d. Value-based pricing is becoming the norm
   Accounting and bookkeeping businesses are making the move from hourly pricing to fixed, value-based pricing. Charging by the hour made sense when there were hours and hours of time-consuming data entry to do. Software can take that job now. You don’t have to devote the time to that work anymore. Now hourly pricing is not giving accountants the revenue they need or deserve.

e. The millennial generation is on the horizon
   For the most part, advisors have been working with a generation that did not grow up with technology. For the millennial generation, cloud technology is an integral part of their daily life.
   A research by Association of Chartered Certified Accountants (ACCA), titled ‘Drivers of Change and Future Skills’ has explored some important changes which are expected to be encountered by the year 2025[13]. Three of the possible changes are highlighted here:

10.1 Accountants will use increasingly sophisticated and smart technologies to enhance their traditional ways of working, and these technologies might even replace the traditional approach. Smart software systems (including cloud computing) will support the trend toward outsourcing services and greater use of social media via smart technology will improve collaboration, disclosure, engagement with stakeholders and broader communities. Social media (including Facebook, Twitter, and Google search) will reveal more data than any corporate assurance report and stakeholders will use tools to interpret “Big Data”.

10.2 Continued globalization will create more opportunities and challenges for members of the accounting profession. While globalization encourages the free flow of money from one capital market to another, enhanced overseas outsourcing activities and the transfer of technical and professional skills will simultaneously continue to pose threats to resolving local problems (with different cultural, financial, and tax systems). Accounting firms in the US, EU, and Australia are outsourcing services to India and China for the purpose of cost minimization, which will create a shift in employment within the accounting industry in the West. As globalization has already been negatively impacted by Brexit and Trump's presidential victory, accounting professionals are likely to see themselves having a role in this transformation.
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10.3 Increased regulation, and the associated disclosure rules, will have the greatest impact on the profession for years to come. For example, increased regulation is imminent because of massive tax avoidance, transfer pricing, and money laundering as exposed via the Panama Papers. Many professional (tax) accountants will be affected by intergovernmental tax action to limit base erosion and profit-shifting.

XI. Conclusion

Cloud accounting software utilizes the Cloud to store accounting data. It makes financial information accessible to owners and employees anywhere with an Internet connection. Every day, more and more businesses are turning to cloud computing. From connected appliances to Internet-based education programs, people all over the world are utilizing the cloud as a way of connecting with customers and making their own business practices more effective. One business practice than an increasing number of businesses are turning to Internet-based technology for is accounting. Today, small businesses across the globe are taking advantage of the cloud when it comes to managing their finances and fewer and fewer startups now depend on a hard drive to store and access their accounting data.

Cloud Computing could be hugely beneficial to accounting firms that take it up, allowing for the analysis of huge volumes of data immediately and possibly cutting the burden of compiling half yearly or annual reports in the process. The possibilities this technology holds for businesses and accounting firms are endless in an economy that needs better services that take less time and cut costs. With clients able to do their own bookkeeping and tax work, the implementation of cloud computing could serve to elevate the role and services of the accountant to that of a trusted business advisor.

Despite of the fact that cloud accounting will have a significant role to play in the near future around the world, substantial research paper has not been published on this topic that may present an overview of the phenomenon- cloud accounting. In this paper, the author has an intention to serve something in this regard that can help to understand whether to take the advantage of technological advancement of cloud or not, as information has been collected from most recent studies and expert opinions. Furthermore, it will provide a brief overview of the cloud which may be helpful for the potential researchers in this field. However, there may be some shortcomings of the paper due to the unavailability of sufficient literature.

References

Journal Papers: