# THE ROLE OF CLOUD ACCOUNTING IN ECONOMIC DEVELOPMENT OF EMERGING COUNTRIES

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**Abstract**

*The way we work, learn, communicate, buy, and sell items is changing as a result of digitalization and the inventive use of digital technologies. Cloud computing is an emerging digital technology that is growing rapidly. It is an internet-based computing model which shares computer resources instead of having local servers. Has been reported that usage of cloud computing in the accounting domain reduces IT management overall costs and allows large scale consolidation and optimal use of software and hardware resources. It also has the potential to make large-scale resources available to small business which will not be able to afford these otherwise.*

*The opportunities provided by Cloud Computing to developing countries are: on-demand access to data and computing resources that can enhance productivity and improve service delivery in both private and public sectors of emerging economies.*

**Keywords: a**ccounting software, technology, Cloud Computing, Cloud Accounting

**JEL Classification: M40, M41, M48**

## Introduction

Cloud accounting software is similar to traditional, on-premises, or self-installed accounting software, except that the accounting software is hosted on remote servers, similar to the SaaS (Software as a Service) business model. The data is sent to the "cloud", where it is processed and returned to the user.All application functions are performed off-site, not on the user's desktop. In cloud computing, users access software applications remotely over the Internet or other network through a cloud application service provider. Using cloud accounting software frees the company from installing and maintaining software on individual desktop computers. Cloud accounting solutions also allow employees in other departments, departments or subsidiaries to access the same data and version of the software.

There are some key distinctions between cloud accounting and traditional on-the-spot accounting. Cloud accounting is more flexible. Accounting data can be accessed from anywhere on any device with an Internet connection, rather than on a few selected local computers. Second, unlike traditional accounting software, cloud accounting software automatically updates financial information and provides real-time financial reporting. This means that account balances are always accurate and fewer errors occur due to manual data entry. They are also better able to manage multi-currency and multi-company transactions more efficiently.

In the local world, every time a company grows, it faces higher software licensing and maintenance costs, as well as new licenses and fees for database, systems administration and other software programs. The firm should also make costly capital acquisitions of new hardware, such as servers. With cloud solutions, businesses don't get stuck with expensive equipment and licenses, which are expensive when business contracts are concluded, and there are also no major cost increases when they expand a little.

Cloud accounting solutions offer an equally secure (and sometimes even more secure) method of storing financial information than traditional accounting software. For example, a computer or laptop of the company with critical financial information could be lost or stolen, which could lead to a security breach. Cloud accounting, however, leaves no trace of financial data on company computers, and access to that data in the cloud is encrypted and password protected. Data sharing is also less worrying. Through cloud accounting, two people simply need access rights to the same system with their unique passwords. Traditional methods often require flash drives to carry data, which could be lost or stolen.

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Finally, cloud providers typically have backup servers in two or more locations. If a server shuts down, you still have access to your data. Information stored only on the spot could be destroyed or damaged in a fire or natural disaster and can never be recovered.

**Cloud computing definition**

In the last decade, the technology that has seen the biggest growth is cloud computing. Cloud computing is different from the traditional way in which information is accessed and stored. In the traditional calculation method, data is accessed and stored in the spaces where the computer or server accesses the data. This form of calculation requires the user to download the software directly to his computer and any other computers that will need the benefits of the software. Once a file is created by software, the information is saved directly on the computer. If a user wants to access the files they created on a desktop, they will have to go back to the same desktop or transfer the files manually using a universal serial bus (USB) to access the files again. The important thing to remember about transferring the file to another location is that any changes made to the file will only be applied to the file on the computer where the changes occurred. For the changes to appear on the original computer, the file should be transferred back as an updated version. An alternative to this would be to use a local area network (LAN) to connect to a personal server where the company's files are stored. This would allow users to access files from any device connected to the server. This method of accessing files is popular in companies and schools, for example, due to its large user base. However, this means that in order to access the files, the user must be in the spaces where the server is located. However, cloud computing works to combat some of these tedious problems.

Unlike traditional computing, information accessed and created through cloud computing is not related to the hardware on which it is created and edited. While traditional computing required users to download and install software on each device, cloud computing software is accessed remotely. The software used by the user is located on a remote server provided by the software company. For a user to access the software, all they have to do is connect to the internet and connect to the portal provided by the cloud server. When the information is created and edited, all the information is saved on this remote server. The files for this information will not be located on the computer they were accessed on. Instead, the information can be accessed and edited from any device that has an internet connection. The user's location doesn't matter. This form of storage also means that any changes to the file will be recognized in all locations when the changes are made and saved. Some software programs allow user edits to be witnessed in real time by others. This technique can be seen in Google's online document creation software, Google Docs. Whenever a document is edited, the software automatically starts updating and saving changes. This allows users to see the progressive typing of other users as in real time. Numerous software programs have emerged in an attempt to use cloud technology. Some people use cloud technology on a daily basis without realizing it. With the popularity of cloud computing, it only makes sense for companies and firms to start applying it to their accounting methods and offerings.

**Challenges in implementing Cloud Accounting technology**

Although the benefits of Cloud Accounting technology are recognized at the company level, the implementation of Cloud applications is quite slow, due to the uncertainty of management in terms of control and ownership of information. According to a KPMG study, data security and privacy are among the main concerns of users regarding the use of cloud-based services. Security concerns are based on the fact that confidential company information is stored on a server that can be accessed via the Internet and not on your own computer.

The main concern of accountants for the transfer to a new system is justifiable. A successful business to be efficient and knowledgeable about what it offers. The transfer to a new system requires not only time to implement the system, but also for employees to become familiar with the

software. The impact and complexity of moving to the cloud is related to the software, size, business style and technological experience of the company trying to implement it.

As with any software change, the first thing you need to focus on is getting old information about the new software. For some cloud computing solutions, this task may not be as difficult as others. QuickBooks Online has integrated a migration process that allows users to transfer information from QuickBooks desktop software directly to its cloud computing counterpart. For cloud software that is not directly related to other accounting software, there is often the option to convert the accounting information to an acceptable file format. Many cloud options use CSV files to read accounting data from other software. These files are easy to manage through Microsoft Excel and are plain text, tabular versions of the user's accounting data. Although these systems have a means of importing previous data, they do not allow all file types and may not be able to recognize every uploaded form or file. Recent transactions will need to be entered manually and other transactional information, such as direct entries in the general ledger, will need to be entered as summary information, such as a test balance sheet. If you do not have software or file types that comply with import restrictions, your historical data will need to be saved to your desktop. This will mean that the information on the cloud accounting software will start as summary information, with no historical data in it.

The size and culture of the business will also have an impact on ease of integration. Larger businesses are harder to initially transfer to the cloud. There are many more people to train on the new system and many more files that will need to be transferred.

If a firm also tends to have a substantial inventory, large number of transactions, or complex software integration, they could also begin their transition to the cloud ("Moving the System to the Cloud," 2017). Having a substantial inventory and a large amount of transactional data would mean that more files would have to be converted or even manually entered into the new system. If a business relies on an interwoven software system, cloud system integration can be difficult and time consuming. The companies that are best suited for a fast transition to the cloud are small, young companies with technological experience ("Moving your system to the cloud", 2017). They will have fewer members to train, will have less financial information to transfer and will be more comfortable and familiar with how the new technology works.

The last thing you need to know about transferring to a new system is when to do it. By transferring data, you want to make sure that it is clean and up to date. The best transfer periods would be after the end of the month, the end of the fiscal year or after clearing a major account. Data cleaning or data washing is a process used to detect and correct data from an incorrect, incomplete, improperly formatted or redundant database. This allows the transferred data to be error-free and constantly formatted. However, preparation for switching should be made a few months before the agreed transfer. This will allow users to become familiar with the system and can reduce the workload during the migration process. Thanks to the network connectivity of the cloud accounting software, it can be connected to information about banking transactions. This means that during installation, accountants can continue to work on the old system, while the cloud system is automatically updated via the bank feed. This implementation strategy is known as a parallel approach. By running two systems simultaneously, employees can feel comfortable with the new system while still using the old one, and the results of the new system can be compared to the old ones to make sure everything works correctly.

**Data security**

When thinking about cloud computing and security, most people worry about information security on the web. They worry about data security and the online security measures that are being put in place to protect it. One safety factor that seems forgotten is

physical safety. While most people worry about hackers, they sometimes forget about the physical dangers of their data. Not only does a business owner have to worry about accessing his data via the internet, but also the protection and security that is provided to their information due to physical theft, loss and natural disasters.

Businesses can be affected by equipment theft and natural disasters. If a computer is stolen from work, all the files that are on the computer are also taken with it. This could be a large amount of extremely sensitive and confidential information. Once the equipment is stolen, there is no way to remove the files from the equipment. Files that are stored on your computer can only be accessed and modified from your computer. This importance in security also comes into play with the possibility of losing information on transfer. Some files are simply too large to be emailed, so they must be transported by other means. Some of these means may require the use of a USB drive. As useful and convenient as USB drives are, their size becomes the biggest flaws and benefits. They are small and compact, which allows easy transfer from one installation to another. However, this dimension also makes them exceptionally easy to lose. Once these tiny devices are lost, information about them is also lost. Business owners may be smart enough to have an extra copy of their files on their computer, but that doesn't change the fact that the drive is somewhere out there with all the information still available on it. A safeguard against this would be to encrypt the USB so that users authorized only with the encryption key can view it. Similar to how a person can cancel their credit or debit card once it is stolen, files of this importance must have a guarantee to prevent the information from getting into the wrong hands.

Cloud computing provides a solution that allows business owners to ensure the physical security of their data. When it comes to theft, data stored in the cloud is not stored on a computer. Instead, the information is stored on large server systems. If someone had access to a business computer, they should know how to enter the server system to access the files. They may not be able to access the files they want due to editing and viewing limitations. In another situation where someone can physically take an entire server tower, the information is still secure. The information directly in the server tower is not stored in a standard file format. Instead, it is stored as encrypted data. For someone to access information directly from the server, they should know how to encrypt the information stored on it.

The server system is also what allows company information not to be lost during the transfer or completely destroyed during a natural disaster. Physical transport of files is what allows the loss of information during daily use. Cloud computing allows access to files from all locations, without the need for email, USB or physical printing. In the event of a natural disaster, most cloud providers use a redundancy system. While they have a main server system in one location, they also have a whole host of servers that specialize in making copies of the information stored on the main server in another location. If a disaster destroys the primary server system, then the provider will switch access to the fire servers. This ensures that little or no data is lost and that companies can continue their normal business. The server system is also what allows company information not to be lost during the transfer or completely destroyed during a natural disaster. Physical transport of files is what allows the loss of information during daily use. Cloud computing allows access to files from all locations, without the need for email, USB or physical printing. In the event of a natural disaster, most cloud providers use a redundancy system. While they have a main server system in one location, they also have a whole host of servers that specialize in making copies of the information stored on the main server in another location.

Cloud accounting providers have different authentication techniques to ensure that the person who logs into the account is the authorized party. In addition to username and password, companies can implement two-factor authentication. This is a technique that requires the user to enter several forms of identification before they can connect. Some

companies may also have the user enter a security pin that is emailed or sent as text when trying to connect. Another means of two-factor authentication is to ask the person logging in to answer a security question before they can access the data. In order for an unauthorized party or hacker to access your account and financial information, they must not only know your username and credentials, but they must also have access to registered devices or email accounts to validation codes. If, however, someone can successfully log in to your account, there are security measures in place to warn you and prevent further action. Many software vendors have a feature that, when enabled, notifies the authorized user that someone is connecting to the application. When such a login is made, the application warns the user, either by text or by e-mail, that an attempt has been made to connect. If the login attempt was not authorized, the software will automatically disconnect the user and block additional access from that location or computer. Cloud software also includes permissions for users, which limit what data certain people can see and edit. If someone successfully enters the undetected system, they would need the appropriate user permissions to retrieve the data they are following. The audit log that is embedded in most software programs will also report when the data is changed and who changed it. This allows constant monitoring within the system.

If the data stored outside the organization's country may require the user to implement different document retention laws for each country in which the data is stored. Laws on the retention of documents require the retention of data for a certain period of time. For some countries, this can be as little as a few months or as big as a few years. If a company closes its business and concludes its cloud service contracts, the countries hosting the servers continue to require that copies of the files be kept for access by government officials. Despite these laws and regulations, government officials still need to have a warrant or court order to search for computer systems in most cases (Gilbert, 2011). A best practice that a cloud application client can implement is to add a clause to the service provider contract so that all government and legal access requests are forwarded to the client. This will let users know when their data is trying to be accessed by officials and that they have a say in whether the data can be accessed or not.

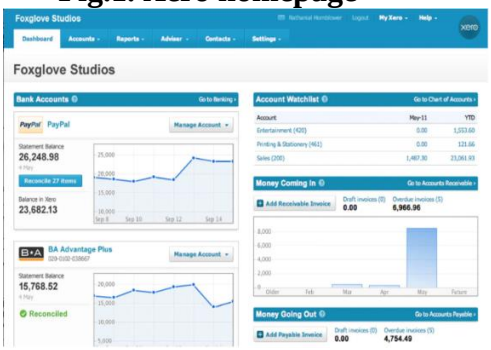
When thinking about cloud computing and security, most people worry about information security on the web. They worry about data security and the online security measures that are being put in place to protect it. One safety factor that seems forgotten is physical safety. While most people worry about hackers, they sometimes forget about the physical dangers of their data. Not only does a business owner have to worry about accessing his data via the internet, but also the protection and security that is provided to their information due to physical theft, loss and natural disasters. Businesses can be affected by equipment theft and natural disasters. If a computer is stolen from work, all the files that are on the computer are also taken with it. This could be a large amount of extremely sensitive and confidential information. Once the equipment is stolen, there is no way to remove the files from the equipment. Files that are stored on your computer can only be accessed and modified from your computer. This importance in security also comes into play with the possibility of losing information on transfer. Some files are simply too large to be emailed, so they must be transported by other means. Some of these means may require the use of a USB drive. As useful and convenient as USB drives are, their size becomes the biggest flaws and benefits. They are small and compact, which allows easy transfer from one installation to another. However, this dimension also makes them exceptionally easy to lose. Once these tiny devices are lost, information about them is also lost. Business owners may be smart enough to have an extra copy of their files on their computer, but that doesn't change the fact that the drive is somewhere out there with all the information still available on it. A safeguard against this would be to encrypt the USB so that users authorized only with the encryption key can view it. Similar to how a person can cancel their credit or debit card once it is stolen, files of this importance must have a guarantee to prevent the information from getting into the wrong hands.

**Ease of access**

The main difference and the most widespread advantage is that cloud accounting has over software premise is its ease of access. Thanks to internet-connected cloud accounting, users can access the software from any location with internet access and from any device with internet browsing functions. This can be a major advantage for business owners and accountants. Traditionally, accountants will receive information from their clients only once a week, if not monthly. The information was often transported in batches via physical files or USB drives. This would mean that the accountant will only have access to transaction information days after it has taken place. Incorrect records and inadmissible transactions will not be seen by the accountant until long after the transaction has taken place. With this new degree of access, accountants can now have instant access to their client's books. Questions can be answered at any time, errors can be detected earlier, and timely entries and reports can be created. This becomes especially beneficial for business owners and accountants who are usually on the move or are naive in running an accounting system for a business.

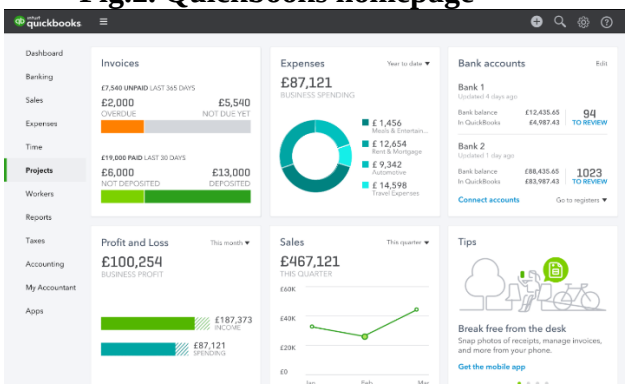
Cloud accounting software also offers a great deal of convenience through its connectivity. The main focus has been on accessing cloud software via laptop, but many companies have mobile applications that connect with their browser-based counterpart. It has never been easier to keep track of business expenses on a trip. Instead of keeping receipts and transforming them at the end of a trip, mobile apps will allow you to upload a picture of your expense receipt. This way there is no difficulty in tracking the source document. These applications may not offer as many features as the browser-based version, but they still allow for easy accounting work on the go. Most applications (ie QuickBooks, NetSuite, and Xero) will allow the user to create and track estimates, invoices, expenses, and payments.

**Fig.1. Xero homepage**




Source: https://www.softwareadvice.com/accounting/

**Fig.2. Quickbooks homepage**




Source: https://www.nsula.edu/

Fig.3. Netsuite homepage


Source: https://cofficient.co.uk/

Similar to how the browser-based version and the mobile version of cloud accounting software can connect to each other, these applications can also connect to other third-party Internet-based applications. Connecting to different applications can simply mean transactions automatically related to basic accounting software or even adding and improving features in basic accounting software. As mentioned above, mobile applications with accounting software allow the storage of images with receipts with user-borne expenses. Some applications, such as Expensify, have taken a step further by incorporating OCR technology that interfaces with cloud-based accounting services. Optical Character Recognition (OCR) is software that converts document images into editable computer text files (Wyle, 2007). This allows users to scan forms, such as physical invoices and other images, such as PDFs, to make them searchable and fillable. This allows the program to identify key information on a form (eg seller name, date and amount) and send it to the system automatically. Another technology that could increase the transmission of data retrieved from OCR is artificial intelligence (AI). AI is a computer-based expert system that attempts to mimic human behavior (Laudon, 2018). Through machine learning, which is the process of improving computer programs without explicit programming (Laudon, 2018), software can learn to perform tasks and even improve them.

As the AI program becomes more familiar with how expenses and other transactions are entered into the accounting software, the AI becomes better at automatically classifying and entering transactions. QuickBooks Online already has AI in place with the self-ranking feature and expense finder ("Machine Learning: Unlocking the Power of Millions for Prosperity One," 2017). Together, AI and OCR have the potential to reduce manual data entry time and errors for users of cloud-based accounting applications.

The second form of connection, as mentioned above, is to connect your accounting software to another application to automatically share transaction data. Businesses and payments are becoming more digital, and the largest provider of mobile person-to-person payments is PayPal (Panno 2016). For e-business, PayPal can be their main transaction base. The cloud allows you to connect the accounting software to the user's PayPal account and automatically record transactions from it. All the user has to do is set up how they want their accounting software to recognize PayPal transactions and then the software will do the rest. The software can also be synchronized with the user's bank.

Automating accounting systems not only reduces the time required for manual entry, but also reduces the errors that occur from it.

Although the internet connection is one of the strengths of cloud computers and is the reason for many of its features, it can also act as one of its biggest problems. Cloud computing

runs exclusively over the internet. If there is an inaccessibility or interruption of the internet connection between the user and the server, then the ability to use the software will be reduced or become one. Traveling accountants may reach areas where they cannot access an internet connection. Without this, they will not be able to do their job until they go elsewhere. Businesses with a large employee base or an independent ISP may also find that their service is slow and has a long load time for cloud-based applications. This would be due to the bandwidth of the company consumed or a low internet speed. Make sure you have a trusted ISP can make a difference in how you experience cloud applications. For companies that want to take extra precautions, contracting with a second internet provider can be a good practice. If something happens to the company's main internet provider, a second provider gives the company the ability to work non-stop. Using Ethernet instead of Wi-Fi will also lead to improvements as long as it is in the plan of the internet provider.

There is the aspect of server downtime that the consumer cannot control. As with all internet applications, sometimes a server needs to be disabled for maintenance and updates. They are a necessity that keeps the software up to date and works to their full potential, but it also means that the service will not be available for a certain period of time. Most companies will try to plan these time periods in the minimum traffic time, but they cannot always be guaranteed. There are times when servers go down unexpectedly. Cloud providers try to apply the "five nine" principle, in which their servers run 99.999% of the time, and the rest is unscheduled maintenance (Defelice, 2010). However, this is a great promise to keep and does not take into account downtime for scheduled server maintenance. When servers return online, there is a risk that some features may no longer be available. This is an inherent risk with any software update, as some features may no longer be compatible with the new model. The developer will often make an effort to restore any missing features in the next update.

**Conclusions**

The last decade has propelled an impressive development of information technology. The border between technology and our society is fading, as IT tools and gadgets are spreading in almost every aspect of our lives. In an environment as dynamic and challenging as the economy, companies are considering a new way of doing business. The concept of the cloud is becoming more and more popular over time, and more and more companies are adopting cloud-based software to improve their efficiency and experience many other benefits. The cloud accounting model allows all business participants (business owners, accountants, auditors and clients) to work closely together by accessing updated financial data at the same time via the Internet. This article focuses on cloud accounting solutions seen from different points of view. In particular, we looked at the business and accounting perspective of these technologies. We identified some of the benefits of cloud-based software and also discussed the most important concerns involved, as perceived by both business owners and accountants.

The transition to the cloud is just beginning. It could become the fundamental factor for reshaping our reality and redefining globalization as we know it. If accountants give technology a chance to prove its worth, the accounting profession could ultimately act as a globally standardized entity and take business to the next level of efficiency.

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