

Accounting in the Cloud: How Cloud Computing Can Transform Businesses (The Ghanaian Perspective)

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Abstract

In all parts of the world, cloud computing brings unquestionable benefits to the ICT sector. Cloud computing promises to increase the velocity with which applications are deployed, increase innovation, and lower costs, at the same time increasing business agility. The good news is that the benefits of cloud computing is not limited to only ICT. In Project Management, Project Portfolio Management tools in the cloud offer many features at an affordable cost to help organisations manage their project portfolio. Market analysts believe that cloud computing will be worth about \$5.4 billion in the health sector alone, globally, in about five years' time. In the Banking sector, it is expected that by 2015, industry association community clouds will increase in popularity. The paper seeks to identify whether cloud computing can also be applied for accounting purposes, determine how it can assist accounting and the related positive effects cloud accounting can have on businesses. The paper uses a Ghanaian setting and concludes with recommendations that can be applied globally. It is worth noting that though the research had difficulties reviewing past literature because the concept is quite new, but the validity of the findings is in no way affected.

Key words: *Cloud computing, Accounting, secure cloud, cloud accounting, desktop accounting, on-demand self-service, rapid scalability, resources pooling, measured service.*

JEL Classification: *M41, O3.*

1. Introduction

Businesses have always run with the aim of making profit and maximizing shareholders' value. The pursuance of this has since time immemorial moved businesses from one form of records keeping to the other. From manual accounting to computerised accounting, a lot of packages with diverse costs and benefits have been exploited by several businesses. According to ThinkGrid (n.d), businesses recognise that they need to grow, but are simultaneously under pressure to save money and hence the thought that new ideas and methods may produce better results with the growing acceptance of innovative technologies. This is what has seen cloud computing become the biggest buzzword in Information Technology (IT) in recent times. There's no arguing that cloud computing is gaining a great deal of momentum. According to Ried and Kisker (2011), the global cloud computing market will grow more than \$241 billion in 2020. Redmond (2012) indicates that spending on public and private cloud will create nearly fourteen million (14,000,000) jobs worldwide from 2011 to 2015 according to a new study by analyst firm, International Data Corporation (IDC). Srivastava (n.d) asserts that there is tremendous promise for cloud computing infrastructure in the healthcare industry and it's an ideal tool to leverage computing power at low cost. According to CloudTech News (2011), market analysts believe that cloud computing will be worth about \$5.4 billion (US) in the health sector alone, globally, in about five years' time. Cloud computing could therefore benefit the medical sector immensely in due course. Egeland (2009) states that as a Project Manager, cloud computing means a more green, less costly, and more carefree processing environment for the customer. According to Loan (2013), cloud project management software is a great solution for small businesses to increase productivity and collaboration with lower costs and with data backup support. Ramakrishnan (2012) asserts that the Project Portfolio Management tools in the cloud offer many features at an affordable cost to help organisations manage their project portfolio. Fagan (2013) indicates that insurance companies prefer private clouds because they are more secure than public clouds. However, it is expected that by 2015, industry association community clouds will increase in popularity in the sector.

1.1 Rationale

Zlatkova (2011) indicates that the world we live in is changing at a great speed of which the accounting and professional services do not make an exception. Christauskas and Miseviciene (2012) assert that it is believed that prevailing accounting systems often do not support business properly because systems are too large and complex to comprehend in entirety. The result thereof is inefficiency in operations. This comes with a lot of challenges as far as business operations and decision making is concerned. First, decision making is delayed since there is no access to information as far as the Accountant is distant from the

desktop on which information is stored in the organisation. Second, information inconsistencies among various branches of an organisation may cause differences in decision making with its antecedent problems. Finally, organisations are also burdened with acquiring expensive infrastructure such as servers for which their required storage space may be too small leaving other spaces unused but paid for. The objectives of the research are to identify whether cloud computing can be applied for accounting purposes, to determine how cloud computing can assist accounting, to establish what positive effects cloud accounting can have on businesses in Ghana.

2. Literature Review

Kepes (2011) states that in order to truly understand how cloud computing can be of value to an organization, it is first important to understand what it really means, and its different components.

2.1 Cloud computing

The term cloud computing has been defined differently by different experts. Mario (2009) pointed out that there are at least twenty two (22) different cloud definitions in common use. Plummer, Bittman, Austin, Cearley and Smith, (2008) define cloud computing as "a style of computing where massively scalable IT-enabled capabilities are delivered as a service to external customers using internet technologies." Forester (n.d) says cloud computing is a pool of abstracted, highly scalable, and managed computer infrastructure capable of hosting end-customer applications and billed by consumption. NIST (2011) defines cloud computing as "a model for enabling convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction.

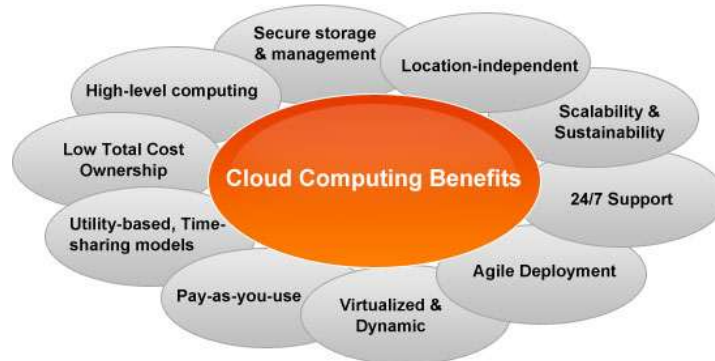
According to Beyourfuture (2011), there are five (5) essential characteristics of cloud computing namely, On-Demand self-service, Resource Pooling, Rapid elasticity/Scalability, Measured service and Broad Network Access. It could be concluded from the above definitions that cloud computing is basically the delivery of computing resources as a service rather than a product over the internet. The end-user does not require knowledge of the physical location and configuration of the system that delivers the services. The shared resources can then be accessed through computers and other electronic devices over the internet.

2.2 Benefits of Cloud Computing

Tsagklis (2013) states that cloud computing is a tool that offers enormous benefits to its adopters. The benefits of deploying applications using cloud computing include reducing run time and response time, minimizing the risk of deploying physical infrastructure, lowering the

cost of entry, increasing the pace of innovation and what have you. The diagram below illustrates a few cloud computing benefits to businesses.

Figure 1: Diagram showing some benefits of cloud computing



Source: Seminar Presentation of Pentecost University College IT level 100 weekend school

2.3 Accounting in the Cloud

Howlett (2013) states that accounting on the cloud has often been characterized as something that will never happen or at least no time soon, however, if you look at the SME market, it is transforming the crusty world of professional accounting. According to *Klynveld Peat Marwick Goerdeler* (KPMG) Research (2012), many are willing and ready to move finance and accounting systems and applications to the cloud. When asked about the practicality of moving these functions to the cloud, the vast majority of respondents said it was "very practical" or "somewhat practical", the report indicated. CCH Research Report (2013) asserts that accountants who do not make the move to the cloud could be putting their SME client relationships, and their own business, at risk. The research indicates around two thirds (2/3) of the SMEs surveyed said they would consider replacing some of the services their accountant currently performs with cloud-based software. Half said they would consider looking for a new accountant if their existing accountant did not embrace a cloud solution. According to Nixon (2013) "Accountants who do not embrace the benefits of cloud technology for SME's should see the new technology as a threat to their core business. The facts are that cloud based technology can and does reduce the time needed on compliance services. This drives competition and price pressure for compliance services. However, with real time data the Accountant can be more relevant by offering planning, monitoring and other advisory services. It's a win-win if the Accountant uses the data to add value. If they do not then they will lose business".

2.4 Cloud Accounting

According to Strauss (n.d), Cloud accounting refers to transactions performed over the Internet. The practice does not require you to install software in your computer or own a server. A cloud computing company that sells accounting services provides remote servers

and the applications. For a fee, they grant you online access to them for managing and maintaining your financial records.

According to Saasu (2013), Cloud accounting is also referred to as “online accounting” and it serves the same function as accounting software that you would install on your computer, except it runs on our servers and you access it using your web browser, over the Internet. Your data is securely stored and processed on our servers—or “in the cloud”. This means you are able to access your business financials from anywhere and using any device, as long as you are connected to the internet.

2.5 Cost Comparison between Cloud Computing and On-Premise Software

Deloitte (2012) states that depending on the scale and size of the customer’s needs, cloud service arrangements may include fees for the use of the services, the costs of software applications, or various other costs.

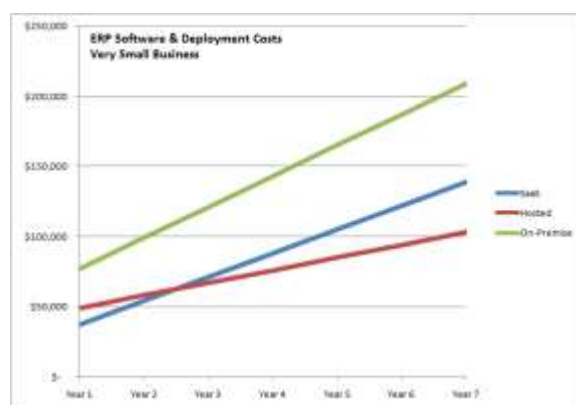
Table 1: Table showing a comparison of the cost composition of on-premise and cloud deployment

On-Premises Model	Cloud Model
Upfront license fees	Pay for what you use
18+% of annual maintenance fees	Included
Customer bears all IT costs and risks	Vendor’s Problem
18 – 24 months release cycles	Monthly innovations
Customer bears all upgrade costs and risks	Vendor handles

Source: Developed by researcher using data from CloudGraph.com

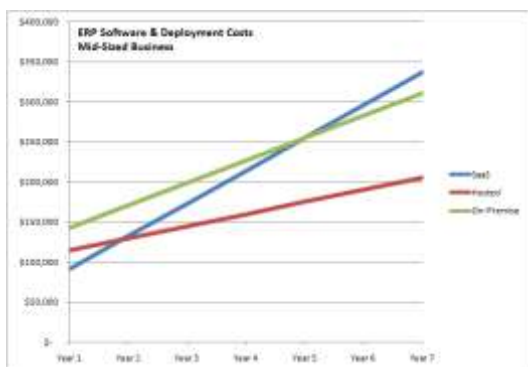
The charts below show a cost comparison between cloud software, on-premise software and hosted applications.

Figure 2: Graph showing a cost comparison of SaaS, hosted software and on-premise software



Source: erpcloudnews.com

Figure 3: Chart comparing cost of SaaS, hosted and on-premise software for mid-sized business



Source: erpcloudnews.com

The charts above show the picture that cloud computing is relatively cheaper as compared to other forms of computing especially for the early years of subscription. However, as the

years go by, it appears more expensive as compared to others. It could be concluded from the charts that cloud computing promises a great future in cost reduction for businesses in general and SMEs in particular. Angeles (2013) asserts that the benefits of cloud computing for small and midsize businesses (SMBs) is endless; cloud computing saves businesses time and money by boosting productivity, improving collaboration and promoting innovation.

2.6 Benefits of Cloud Accounting to Businesses

Izzbox (2013) states the main benefit of cloud accounting as the ability to manage your accounts from almost any location. According to Twilley (2013), using cloud computing for accounting and other financial functions can simplify tasks, facilitate company growth, and aid in global reach and expansion. According to DanielDern (2012), the main benefits that attract adoption by Certified Public Accountants (CPAs) include Continuous software updates, which means everybody is using the same version, Automatic secure cloud backup, so companies don't need to worry about users doing their own backup in a regular, secure fashion, Simplified access. Having the applications and data "in the cloud" provides "anywhere, anytime" access. Users can get to the financial data from smartphones and tablets, not just from desktop systems, CPAs and clients can work together, because both access the same data (although possibly through different applications or features).

3. Methodology

For the purpose of this study, both quantitative and qualitative research methods were employed. Data was obtained by actively engaging in a field research, and from existing literature and supporting documents from the internet, books and journals from around the world and in Ghana. Two major research instruments were employed for the study - questionnaires and interviews. Tables, charts and graphs were used to present the data. Descriptive statistics was then employed to do an analysis of the data. Also, direct quotes and written discussion of findings were used particularly for the data collected through interviews. It is important to note that in analysing and interpreting the responses to the research questions, the researcher also made use of his stock of knowledge, information from the literature review and logical reasoning to draw conclusions.

The research considered Accountants in Ghana as the target population. Accountants in this case refer to both practicing accountants and students reading programmes related to accounting at the tertiary level herein referred to as 'future accountants'. Despite the advantages of the stratified random sampling method over other probability sampling methods, especially for this research, it could not satisfy all the needs of the research objectives. In effect, the simple random sampling method was used to select the sample for the category of future accountants. A sample size of 20% represented by the number twenty four (24) was selected for this category. The other two categories were considered as census

populations hence the entire population was included in the study. However, six (6) respondents from each of the two categories were unreachable. The total respondents therefore were twenty four (24) for those categories. This represented 80% of the population size for the categories. In totality, the sample size eventually selected for the research was 40% of the accessible population. This is represented by the number seventy two (72). The table below shows how the sample was distributed among the various categories of the population.

Table 2: Table showing the sample size distribution among the population categories

Category	Representation	Total Population	Sample Size	% of Total Rep.
Accountants working in organisations that use cloud computing (Accountants with cloud)	Staff of Finance Division – MTN Headquarters; and staff of B. Omane-Antwi and Associates	30	24	33.3%
Accountants working in organisations that do not use cloud computing (Accountants with cloud)	Accountants practicing or teaching in Pentecost University College and Accountants working in Alcatel Lucent, Ghana	30	24	33.3%
Future Accountants	Final year Accounting and Bachelor of Commerce students of Pentecost University College (Regular School)	120	24	33.3%
Total		180	72	100%

4. Results and Discussion

Sixty four percent (64%) of Accountants in Ghana have heard about cloud computing and know what it does. However, this figure is greatly influenced by the number of accountants who practice in organisations that use cloud computing. Hundred percent (100%) of Accountants in Ghana who know about cloud computing opine that it can be used for accounting purposes. However, they express the opinion that it must be done with much caution since financial data are considered confidential. The difference between the nature of cloud accounting and computerised accounting is not clear with the Accountants who know about cloud computing. Fifty two percent (52%) of Accountants in Ghana who know about cloud computing think cloud accounting would be different from the manual and computerised accounting. They say this taking into consideration the speed and benefits of cloud computing as compared to the others. Forty eight percent (48%) who think it would not be different look at it from the perspective of the principles of Accounting. They say the accounting principles have been the same, are the same and would forever be the same. Eighty seven percent (87%) of Accountants in Ghana who know about cloud computing are of the view that cloud accounting would be more beneficial and easy to use as an accountant than the manual and computerised system. This they attribute to cloud's opportunity to do business "on the go"; the high percentage of service availability; the added on services and

what have you. Eighty three percent (83%) of Accountants in Ghana who know about cloud computing think that accounting in the cloud is more cost effective. Their opinion is backed by accessing the total cost of ownership for the two different forms of accounting. With cloud, one pays only a subscription fee periodically whereas with the computerised system, one would need to buy the software; invest in infrastructure; staffing and others. Eighty seven percent (87%) of Accountants in Ghana who know about cloud computing do understand that some modern accounting challenges can be solved by cloud computing. They cited some of the challenges as static or one place accounting where the accountant would always have to be at the office before he or she can make a decision. Internet failure or network drops as does occur with the web based applications; and difficulties in backing up accounting data were also mentioned. Over seventy percent (70%) of the respondents cited network drops as a challenge cloud computing would solve. Ninety one percent (91%) of Accountants in Ghana who know about cloud computing express that doing accounting in the cloud comes with some risks. Respondents mentioned data security and data control as some risks associated with cloud accounting.

5. Conclusions and Recommendations

It is concluded from the findings that though security of data may serve as the major drawback of cloud computing, and especially for the fact that financial information is confidential, cloud computing can still be applied successfully for accounting purposes. Though cloud accounting may seem not too different from a desktop accounting in nature, in practice, cloud computing has a lot of ways by which it can enhance accounting. The goal of every Accounting Information System is to collect and store data about activities and transactions; process data into information that is useful for making decisions; and provide adequate controls to safeguard the organization's assets. With the benefit of cloud computing giving every user the opportunity to be mobile with everything he or she does, financial information can no more be delayed. Accountants on the cloud can do mobile accounting by approving transactions; authorizing payments; entering financial data; preparing financial statement; and what have anywhere without necessarily being in an office where the accounting software package may have been installed on the desktop. This mobility opportunity would afford accountants the benefit of sharing timely information which would enhance the speed of decision making. Moreover, financial data can be stored at a relatively cheaper cost with no need for investment in infrastructure and its maintenance cost. With providing adequate controls to safeguard the organisation's assets, SecureCloud would always do the magic. Finally, cloud computing has in stock a lot of benefits for businesses in Ghana especially when it is employed for accounting purposes. It is important to state that in every organisation, financial information is key to making every meaningful decision. The

Marketing Department needs it to plan on sales and advertisement; the Production Department needs it to decide on how much raw materials it should acquire and how much it should produce; the Human Resource Department needs it to decide how many people they should recruit; and many other departments. The underlying truth is when financial information is provided with all timeliness and speed, decision making is enhanced in the whole organisation. Furthermore, it was realised from the research that the major challenge with Ghanaian businesses competing globally is indecision. Decision making is always delayed hence Ghanaian businesses are not considered reliable. With cloud computing, Ghanaian businesses can take decisions faster; communicate better through sharing and receiving information on the cloud; win trust as confidence is built; and increase their chances of competition on the global market. Moreover, in a season of inconsistent electricity power flow, organisations on the cloud need not worry about data loss. The need to get a high-powered plant to keep the server working and all other needs are handled by the cloud. Since all your information is stored and all transactions are done in the cloud, in a real-time situation, just a laptop with a modem or a smartphone can still keep business going. The other benefit is that Ghanaian businesses on the cloud would no longer suffer the common parlance “our system is down”. This is because; cloud providers have high powered servers and high internet connectivity which is provided as a service. There is always about 99.9% assurance of service availability expressed in the SLAs undertaken. Also, cloud computing would help Ghanaian business to escape the cost of not using self-owned servers but paying for it. Self-owned servers cost lots of money whether they are being used or just idle. On the other hand cloud servers cost less because you can scale them to the amount that you need.

It is also recommended to the government of Ghana and governments worldwide that much investment should be made into IT infrastructure development to increase the availability of internet connection in the country. This would help reduce cost of receiving cloud services from cloud providers overseas. Data transmission across overseas is more expensive as compared to data transfer locally. Organisations with financial and technical resources can take advantage of this and provide cloud services to local businesses.

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