

AN ANALYSIS OF CLOUD COMPUTING AND ITS ROLE IN ACCOUNTING INDUSTRY IN ALBANIA

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ABSTRACT

Recent advances in information technology have significantly changed the accounting industry and financial reporting practices. The Internet, which is probably the most important factor in an ever changing organization, is playing a vital role in internal environment of the practicing accounting and auditing firms which tend to support the development of technological innovations in terms of collecting, storing, processing and reporting information. These firms tend to employ models which are simultaneously cost efficient and operational efficient. Cloud computing as a technology based entirely on the internet and which facilitates the management and delivery of computing services through the network seems to be the ideal response that meets these needs. Through this paper we will highlight the effects of this technology in accounting information systems and financial performance having in focus companies that operate in Albania. We find that even though the level of information about cloud computing is considerable, the sources of information are not as much from business background but rather from academic sources and individual studies. We also find that the greatest benefits of cloud computing technology are perceived to be cost savings both in hardware and software, while information security and reliability are mentioned as its biggest drawbacks.

Keywords: Cloud Computing, information technology, accounting information system

JEL Classification Code: M41

INTRODUCTION

Recent developments of technology and using the Internet as a form of communication and trade have influenced the way people communicate and the way that companies and organizations do business. Businesses benefit considerably from the exploitation of the opportunities offered by information technology fields. Some of the major benefits that companies obtain from using IT in their activities include: labor costs' reduction due to automated and/or computerized operations, enhanced efficiency, timely control of operations, higher precision, better and faster data processing and many more. Accounting is also influenced by the development of information technology. The IT impact in accounting is mainly seen in the dominant use of computerized accounting packages (Accounting Information Systems, AIS) which by providing the necessary accounting information on a timely and accurate manner, helps owners, investors, managers and

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government in making better decisions about different economic issues. With an increased pace of economic developments and operational complexities worldwide, the need for designing and implementing sound accounting programs which are able to respond to anticipated and unanticipated financial needs is becoming more and more emergent. New technologies have been introduced and in this regard they focus on increasing efficiency, accuracy and reliability of the accounting procedures.

The time required for collecting, recording, processing and reporting accounting information is visibly much shorter in case of computerized AIS. Controlling data in a computerized environment is easier and they can be researched and retrieved in an appropriate format whenever necessary. Reporting accounting information is also easier because electronic databases more possibly facilitate different platforms of reporting.

Alongside these developments, a new concept in the field of information technology which has a considerable use in accounting is the Cloud Computing technology. In addition to the above advantages relating to the collection, processing and reporting of accounting information for decision making purposes, this technology offers for users access in the financial records of the company via services and applications based entirely on internet with no need for equipment, preinstalled programs or networks. Cloud computing promises to be a solution which helps in additional cost savings for items such as software development, implementation and follow up as well as increasing data flexibility and security.

Cloud computing is currently a hot topic. Revenues in this sector have exceeded \$ 150 billion worldwide in 2013 (Unnikrishnan). It is also becoming a trend among the vendors of accounting packages and solutions in Albania. Companies are using it as viable solution for their financial and accounting needs. They rely on cloud services and cloud computing offered by vendors of computerized AIS to accomplish the accounting functions. On the other side the vendors of AIS are launching new products and services to grab some of the market created in cloud services.

The purpose of this paper is to outline the impact that the implementation of the technology cloud computing, as a tool that provides information processing through the Internet, has in accounting information systems and financial performance. We try to analyze the level of information about cloud computing among accounting and financial professionals in Albania as well as to identify which are the main advantages and disadvantages they perceive about this new technology. Trying to achieve the purpose of this study we use questionnaires and analyze the answers received from participants. The paper will highlight the developments of this technology of the future challenges in the economic environment Albanian.

The rest of the paper is organized as follows: in the first part we present a brief literature review on cloud computing development and its impact on accounting information systems in particular. Next we will present the methodology employed in this paper as well as detailed results of the study conducted through a questionnaire with 66 accounting professionals working in different sectors in Albania. In the last section of the paper we summarize our main findings and conclusions.

1. Literature Review

As an important factor of change in organization and technological innovations, the internet creates good opportunities for communication and reporting of financial information to interested parties by providing better and more timely economic decision making (*Deloitte 2012*). Nowadays, instead of installing a package of programs on its computers a company has the option to choose using various accounting programs, solutions and data warehouses which are offered through web services. Cloud computing is the technology behind this option. Cloud computing is used by many companies as a tool that helps them reduce costs, increase quality of reporting and quality of data and records (*Velte, et.al 2009*).

Developments in technology have changed the way accounting information is exchanged and reported to interested parties. Cloud computing includes offering online services which users can access through a web browser. Its use does neither require sophisticated expertise by the user nor any infrastructure or its related costs of maintenance. Smedescu (2013) gives a general overview of cloud computing advantages and disadvantages further helps to inform the reader of opportunities and pitfalls.

The benefits it has introduced to the accounting discipline are mainly observed as improvements in the decision-making process, increased data security, and enhanced quality of financial reporting, more efficient use of staff time and other benefits (*Mell, Grance 2011*). In comparison with traditional models this technology offers considerable advantages because it allows access to information anytime, anywhere. It is also proved to be cost efficiency, to increase data security, and provide back-up systems in most cases. (*Marand 2013*). In terms of financial performance, accounting systems based on the cloud provide immediate financial reports and increased financial reporting reliability. They ease the process of conducting transactions and obtaining timely feedback for decision making in achieving operational goals.

Aliev (2012) views the cloud services as useful tools also on behalf of governments and tax controls. He claims that access of tax authorities into cloud stored databases of companies' activities increases the level of reporting within a certain economy. This is certainly an important dimension to consider when discussing the cloud services.

Although cloud computing offers new functionality and increased business opportunities, on the other hand it is a model that has introduced new threats to the network. Data and records can be stolen by intruders or can be misused by the vendor of the cloud services. These threats and control over information may be the reasons behind the hesitant companies which have not yet embraced this technology. As a way to increase security and reliability in such technologies, experts emphasize splitting and isolating information of different users on the same infrastructure. Bechtel (2013) argues that cloud computing has partly complicated the work of the accountants and auditors especially of forensic accountants whose obligation is to protect the integrity of the digital evidence. As shown from the survey conducted with SMEs, encompassing SME perspective on Cloud Computing, a probable issue when discussing accounting information and taking action through the internet is the security and privacy of data (*Enisa Report 2009*).

There exists also the issue of information ownership issue. Who owns the information and records? The company that has recorded the financial transactions or the cloud services

vendor which maintains these records in its own servers? Though economically this is an obvious question, it is not so simple on a juridical point of view, because of terms and concepts being quite new and not mentioned or covered in law frameworks of many countries. Reed (2010) reports that the ownership of the information stored in the cloud may sometimes be ambiguous thus leading to potential disputes between the company and the provider of the cloud services which he suggests may be settled if parties make sure they enter into a specific term contract before they engage in any cloud activity.

Albania also has been subject to impact of new information technology advances, including the cloud computing technology revolution (Shkurti, 2013). Even though a new technology, cloud computing has been implemented not only in the public sector (in services such as e-government, and education) but also in the private sector, thanks to its benefits such as offering faster and easier data access, highest cost efficiency and increased flexibility compared to other traditional computerized systems. It has also been successfully implemented as an AIS solution through web and cloud services, by more than one AIS packages vendors in Albania.

2. Methodology and main findings of the study

The paper aims to reflect the effect of the latest technological developments in cloud computing services in the field of accounting. Employing an informative and descriptive analysis we will analyze the role of cloud accounting on accounting information systems of an organization and on financial performance. To perform our analysis we use information collected through a questionnaire which is addressed to the practicing accounting professionals.

The purpose of the questionnaire is to identify the most important factors that affect the quality of data in the accounting information systems and also to reflect the degree of recognition and fields of applications of Cloud Computing technology. Target group addressed this questionnaire has been professionals in accounting field such as accountants, chartered accountants and certified auditors. This questionnaire has been prepared and conducted entirely on-line through surveymonkey.com from February to March 2014. The questionnaire had 10 questions in total starting with general characteristics questions. Out of 105 questionnaires distributed we received back 66 completed questionnaires, all of which were considered suitable for data analysis. Hence a 66% rate of response, which we may consider acceptable, given the indirect electronic communication with the respondents. We consider a response rate of 66% to be an acceptable and reliable rate to perform the analysis of the gathered data.

2.1 Characteristics of the target group

81.8% of the respondents in the target group are between 22 and 30 years old; 13.6% of respondents are between 31 and 40 years old. Only 4.6% of the respondents are more than 40 years old. Due to the characteristics of the questionnaire we found it reasonable to collect data mainly from those young professionals who seem more prone to embrace the use of new technologies in their everyday tasks.

The data collected show that 4.5 % of the respondents participating in the study were chartered accountants, while 13.9 % are certified auditors. 75.8 % of the respondents work

as accountants and even though they have not obtained any of the professional licenses they hold a master degree either in accounting or in finance. Only 5.8 % of the target group hold a bachelor degree in accounting / finance and work as accountants.

Regarding their employment, results indicate a higher percentage (51.5 %) of employment in the private sector in the Albanian ownership companies. 25.8 % of the participants are employed in the private sector but in foreign capital companies. Only 15.2 % of respondents work in public or state owned companies. The rest are individuals working either as freelance, self-employed or employed in non-profit organizations.

2.2 Analysis of information about cloud computing technology

The data collected indicate that 74.2% of the respondents are well informed about this new technology, of which 57.6% have obtained this information from the university studies/courses, only 7.5% of respondents had obtained information through professional trainings in organizations where they are employed and the rest, 34.9%, have received information from other sources. Only 25.8% of respondents have answered that they have no information about this technology. Chart 1 below shows the level of informed professionals about the cloud computing technology, while table 1 shows the source of information, whether it is through studies in university, professional trainings or other sources.

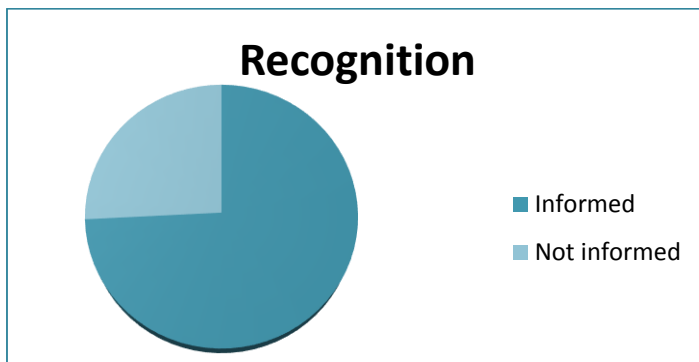


Chart.1 Information about Cloud Computing technology

Tab.1 Source of information

Source of information	Answers	Percentage (%)	Cumulative percentage
University studies	38	57.6	57.6
Professional training	5	7.5	65.1
Other source	23	34.9	100
Total	66	100	

Next the interviewers were asked to mention and make an assessment of some of the benefits that this technology can bring to the organization. They were asked to rank each benefit from 1 to 5 (Likert scale was used for this purpose with 1 point for no benefit and 5 points for maximum benefits). Responses have identified as the most important benefit the cost savings in hardware equipment with a 3.93-point average estimate, roughly in the same level as the benefit of cost savings in software with 3.74-point. Other important benefits that resulted from this question were the savings in the estimated operational costs for IT staff (3.6-point in average) and the company's ability to develop new products / services (3:43-points in average). Table 2 lists these benefits and the corresponding average point scores awarded by the respondents.

Tab.2 Benefits of cloud computing

Benefits	1 (%)	2 (%)	3 (%)	4 (%)	5 (%)	Average rating (points)
Hardware cost savings	4.5	7.6	22.8	39.4	25.7	3.74
Software cost savings	3	7.6	12	47	30.4	3.93
IT staff cost savings	3	12	30.3	30.3	24.4	3.6
Ability to lunch new products and services	10.6	6	31.2	32	20.2	3.43

Chart 2 represents in a different manner the results obtained from the respondents regarding the benefits they perceived form using cloud computing during their everyday accounting tasks. For each specific benefit factor the chart shows the percentage of responses given under each point. We may see that most of the respondents view all the benefits as important or quite important.

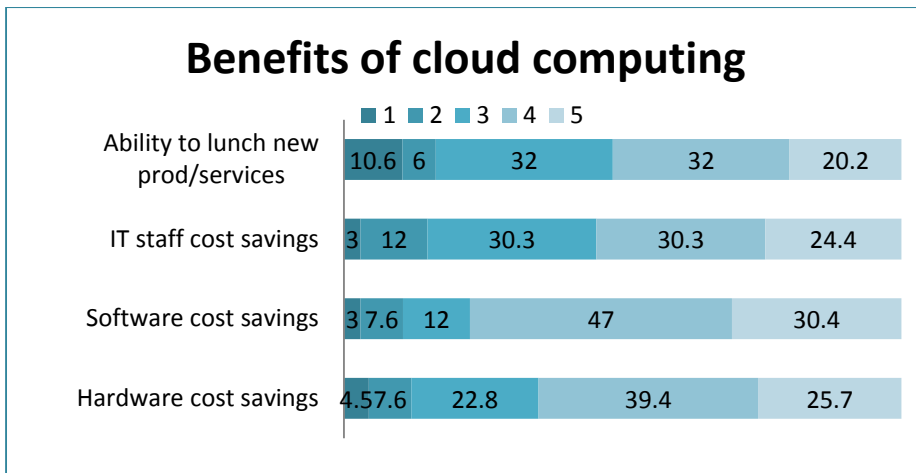


Chart.2 Benefits of cloud computing

The next question explores the barriers the respondents perceived about implementing and using cloud computing technology. Information security was identified as the most important factor (4.27-points). This shows that despite the benefits that this technology can bring to the organization, one of the risks and challenges is privacy and security of data

generated. Roughly in the same level we see another factor, the information reliability (3.75-points). Other factors considered to be important barriers hindering cloud computing implementation are: integration with existing systems (3.49-points), high costs (3.52-points) and company policies (3.44-points). A more detailed information for each factor is given in table 3:

Tab.3 Barriers of cloud computing

Barriers	1 (%)	2 (%)	3 (%)	4 (%)	5 (%)	Average rating (points)
Information Reliability	6	7.6	10.6	36.4	39.4	3.75
Information Security	0	6	7.6	30.4	56	4.27
Integration with existing systems	4	7.6	3	52	33.4	3.49
High costs	6			29	38	3.52
Company policies	9	15	12	30.5	68	3.44
			24			

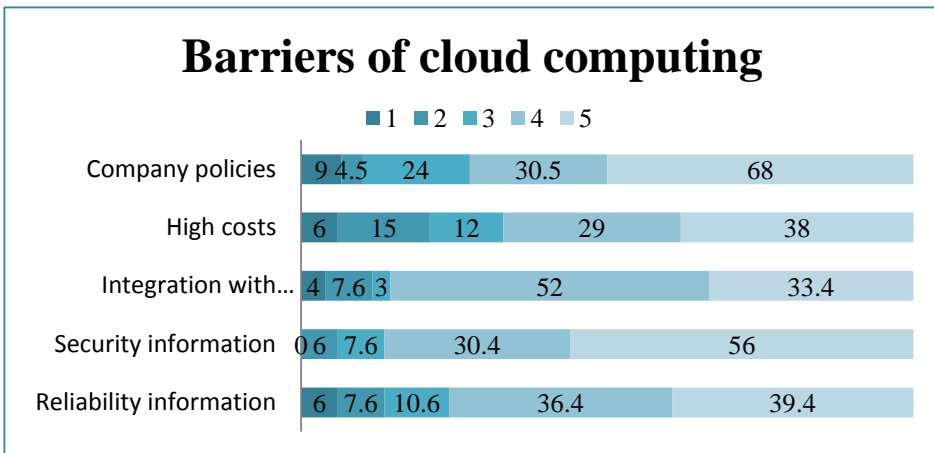


Chart.3 Barriers of cloud computing

2.3 Quality of data in the accounting information system

In this question the respondents were asked about their work experience with an accounting information system, the number of years they have worked with AIS or have been informed about the way the information system works. From the data collected we note that the majority (51.5%) of the respondents are quite junior in their professional experiences because they have been working for less than 4 years. This result is expected seeing that the majority of the respondents belong to a group of young age. More detailed information

about the duration of professional experience and the respective percentages for each category is given in table 4 and chart 4:

Tab.4 Distribution of work experience

Interval of years	Answers	Percentage(%)	Cumulative percentage
1 to 4 years	34	51.5	51.5
5 to 10 years	28	42.4	93.9
Over 10 years	4	6.1	100
Total	66	100	

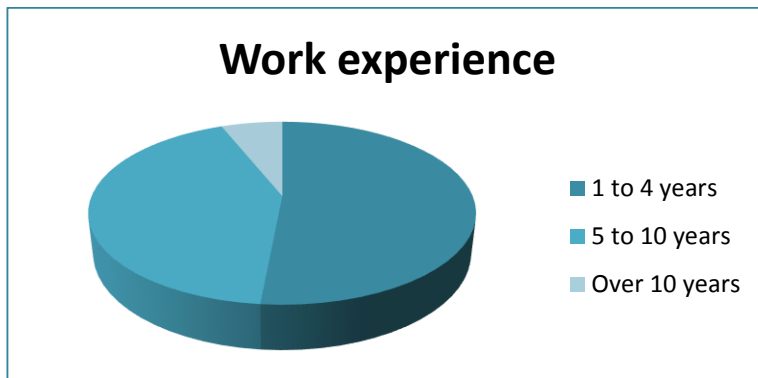


Chart.4 Distribution of work experience

We also controlled the specific AIS used by the respondents in the study. More than half of them (63.7%) are working with either one of two major accounting packages in Albania, Financa 5 or Alpha Business. Only 14% of the respondents are currently working with an open ERP package.

Tab.5 Distribution of information systems

Information systems	Answers	Percentage (%)	Cumulative percentage
Financa 5	25	37.9	37.9
Alpha Business	17	25.8	63.7
Open ERP	14	21.2	84.9
Alpha WEB	6	9.1	94
Bilanc Standard	2	3	97
Quickbooks	2	3	100
Total	66	100	

Accounting information systems

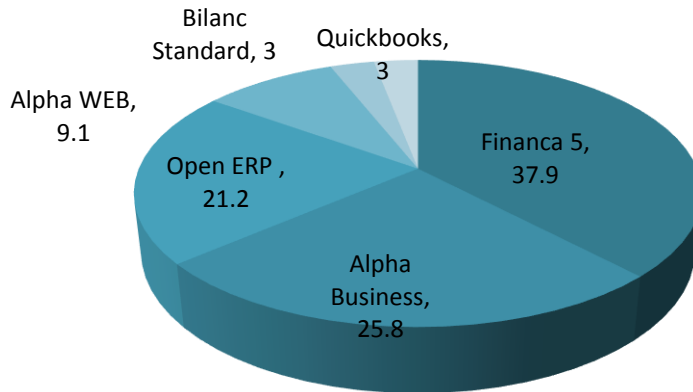


Chart.5 Distribution of information systems

A very important aspect that is related with the implementation of the accounting information systems in organizations, is quality of the data/information generated, due to the important role they play in the decision making process. Table 6 and chart 6 show that the participants consider most important in AIS, the accuracy of recording data, processing time, completeness of records and data consistency.

Tab.6 Quality of data/information

Factors	1 (%)	2 (%)	3 (%)	4 (%)	5 (%)	Average rating (points)
Accuracy	0	1.5	18.2	48.5	31.8	4.11
Processing time	0	3	24.2	30.3	42.5	4.13
Completeness	0	0	13.6	41	45.4	4.31
Consistency	1.5	7.6	25.8	27.3	37.8	3.92

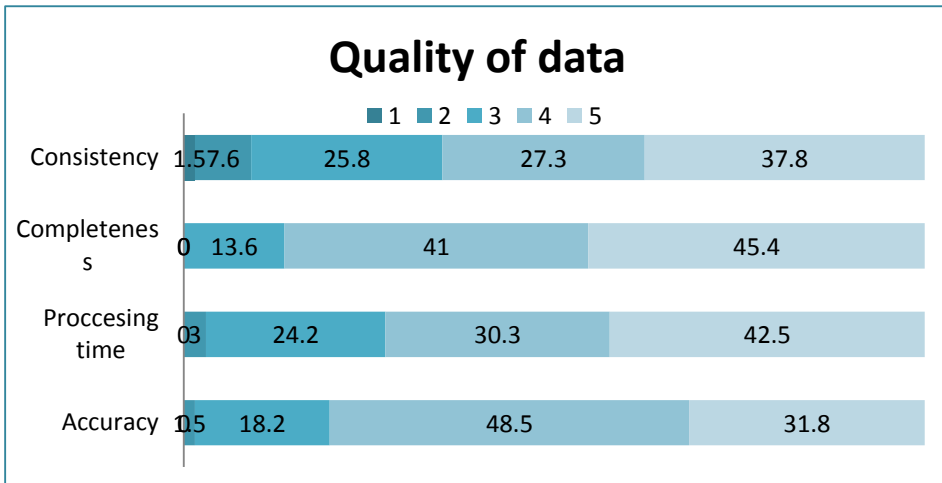


Chart.6 Quality of data/information

3. Main findings and conclusions

Advances in technology and the widespread use of the internet as a means of commerce and communication have influenced almost all professions, including that of accounting. Nowadays we use computerized AIS, which rely in sophisticated technology and programming to ease the gathering, processing and multiple reporting of information. The internet has also had huge impact on accounting and more generally on finance, through cloud computing and other new revolutionary concepts. Today we see huge databases stored completely on cloud, and companies relying totally on cloud services to perform their accounting and financial business and information processes

Comparing to traditional accounting packages, the cloud computing technology offers advantages in several aspects such as allowing direct access to users virtually any time anywhere, cost efficiencies, enhancement of data security, time savings and effective backup systems. Albania has also been using cloud computing for several years now in several industrial sectors such as telecommunications, e-government and education, and by several companies including state-owned companies and private ones. Cloud computing is considered beneficial in accounting as well and is introduced as an optional solution for accounting and financial reporting needs. Several accounting packages vendors in Albania have already endorsed cloud computing in their array of products.

The aim of this paper is to explore the extension of knowledge and information about cloud computing among the accounting professionals and to identify which are the perceived benefits and the perceived barriers of implementing this technology. Through analysis in this paper we found that more than three fourth of the interviewed participants have knowledge and information about the cloud computing technology. Therefore, even though it is a relatively new concept applied in accounting, it is already discussed and researched thoroughly.

We also found that the majority of the participants obtain information about cloud computing during their university studies, while very few information is spread through trainings at work. We may conclude that companies must expand the scope of their trainings to involve topics of information technology in general and cloud computing in particular. Also professional organizations of accountants and auditors should spend more efforts to prepare and convey trainings, seminars or informative sessions to their members about the respective topics.

Participants in the study identified the areas they consider most important in an AIS and they are the participants consider most important in AIS, the accuracy of recording data, processing time, completeness of records and data consistency. These are important factors they consider when selecting a certain AIS and when making decision whether or not to implement the cloud computing solution.

In this analysis we also found that the biggest benefits perceived from cloud computing are cost savings in hardware; cost savings in software; savings in the estimated operational costs for IT staff and the company's ability to develop new products / services. Participants in the study also mentioned what they perceive as possible barriers to implement cloud computing factors such as information security, information reliability and integration with existing systems, high costs and company policies.

We may conclude that even though the levels of information about cloud computing and its advantages and disadvantages is considerable, this new technology is not as dominant in accounting industry as it already is in other industries. On one hand, professional training organizations, universities, companies themselves should offer more trainings and informative sessions about the technology. And on the other hand the accounting packages vendors should mass incorporate this technology in order to leverage its benefits and minimize its drawbacks.

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