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## EFFECT OF USING CLOUD COMPUTING TECHNOLOGY ON THE ACCOUNTING JOB

**Adnan Askar Alwan**

General Directorate of Education of Diwaniya, Ministry of Education, Iraq.

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**ABSTRACT**

The study aimed to demonstrate the importance of the concept of cloud accounting and its advantages over the accounting profession and compare it with traditional accounting systems, and to study the risks and downsides of adopting cloud computing technology, the study concluded that cloud computing technology affects the organization and measurement of accounting work by reducing the costs of the information technology infrastructure, which is getting more and more complex daily due to the huge changes that currently exist, such as the increase in the number of devices and the increase in the consumption of electrical energy. Significant cost savings and enhanced operational efficiency, where many companies have invested in computing capabilities and capabilities to improve their business and take advantage of the capabilities of cloud storage and database management, so it is necessary to use cloud computing technology, as it greatly reduces the costs of the company's information system infrastructure, and the study recommended the need to rely on modern technologies at work accounting and preparing trained cadres ready to work with these techniques.

**FIRST: STUDY METHODOLOGY****Introduction**

Recently, the idea of cloud computing or cloud services has emerged as a result of the rapid development in information and communication technology, to provide in its entirety a set of services that are carried out through devices and software connected to the internet, through servers that carry their data in a virtual cloud, they provide their services permanently without interruption with other portable devices and access to them from anywhere in the world.(Mayank Yuvaraj, 2015, p.1)

Cloud is an expression initially used to refer to the Internet in network diagrams and defined as a preliminary drawing of a cloud that is used to represent the transfer of data from data centers to its final location on the other side of the cloud, the idea of programs as services came when

John McCarthy, a professor at Stanford University, expressed the idea by saying, "Computing may be organized to become a public service one day" . He saw that time-sharing technology could lead to a future in which computing power, in terms of speed of execution, more storage space, and even private applications as a service, would be sold through a commercial model. Indeed, that idea was very popular. Recently, it has become a common term in technology circles and companies at the present time. (Al-Muniri, Sherihan Nashat, 2011, p.2)

**Study problem :**

The accounting profession faces great challenges as a result of scientific progress and technological development. Therefore, economic units face difficulties in the field of accounting work by providing ready-made programs and providing accountants with the skills

necessary to deal with those programs and technologies, as well as the high costs that economic units may incur as a result of the transition to modern methods of during the provision of software, hardware and training, and working to update them constantly, the problem of the study is represented in the following question:-

**(Does the application of cloud computing technology have an impact on the accounting profession by reducing costs and improving accounting work?)**

#### **The importance of study:**

It is summarized in an attempt to scientifically root the economics of accounting information by comparing the benefits of that information with the cost of obtaining it, and thus showing the effectiveness of using the decision to switch to cloud computing technology to replace other electronic systems. Developing and supporting the operation of the existing accounting system in light of developments in information technology by making use of communication technology and the Internet in developing systems and supporting the flexibility of processing and displaying information to users of all categories. The researcher proposes the use of cloud computing technology in light of

studying the benefits and costs of this system.

#### **Research Objectives:**

The study aims to present the concept of cloud accounting and its advantages over the accounting profession and compare it with traditional accounting systems, study the risks and downsides of adopting cloud computing technology.

#### **Research hypothesis:**

The study hypothesis are as follows:

- 1-There is no statistically significant relationship between the application of cloud accounting technology and cost reduction.
- 2-There is no statistically significant relationship between the application of cloud accounting technology and improving the quality of work in the accounting system

### **SECOND: THE CONCEPTUAL FRAMEWORK OF CLOUD COMPUTING:**

#### **1- The concept of cloud computing:**

Cloud Computing is a technology that relies on transferring the processing and storage space of the computer to the so-called cloud, which is a server device that is accessed via the Internet. This transforms information technology programs from products to services, and cloud computing infrastructure depends on

advanced data centers that provide large storage spaces for users and also provide some software as services to users , The National Institute of Standards and Technology (NIST) defines cloud computing as “a model for enabling permanent and convenient access to the network on demand and sharing of a set of computer resources and services that can be deployed and provided quickly with minimal effort by the administration or interaction with the service provider” . (Al-Muniri, Sherihan Nashat,(2011, p.4)

It is also known as "providing various and multiple services to companies via the Internet, on demand, and according to the service provided by the service provider for cloud computing technology". (Al-Samarrai, Salwa Amin and Al-Akedi, Abd al-Sattar Abd Al-Jabbar, 2012, p. 331)

It is also known as "a new technology based on the idea of transferring information processing and storage operations from the beneficiaries' computers to a central computer that is accessed over the Internet, to serve as an umbrella through which any user can obtain a variety of centrally managed services, which makes the beneficiary focus only on Using these services without the necessity of owning specific software as a condition of using cloud computing

applications” . (Zaki, Marwa Zaki Tawfiq, 2012, p. 557)

## 2- The importance of cloud computing:

The importance of using cloud computing is evident from the great role it plays in accessing software and significantly reducing systems burdens, as well as working to improve cooperation between the work team, in addition to that it has an important role in reducing costs and improving information security, and this can be clarified through the following: (Khafaga, Ahmed Maher, 2010, p. 3), (Al-Omari, Aisha Belhesh and Al-Rahili, Taghreed Abdel-Fattah, 2014, p40)

- A. A - Achieving the investment in the cost of information systems: this gives small companies access to technology at the level of the company category, as it allows small companies to operate at a faster level than larger competitors.
- B. b- Transferring capital expenditures: that is, reducing the capital cost of technological devices and equipment, and thus benefiting from these amounts for other purposes.
- C. Enable the beneficiary to access his files and applications: through cloud computing without the need to provide the application in the beneficiary's device, and thus the security risks and hardware

resources (hardware and software) are reduced.

- D. Scalability: Cloud computing allows the user to increase the space allocated to him and his dependents only to contact the service provider to increase the space allocated to him, and the same applies to software services. If he wants to work on a new program, all he has to do is contact the service provider to allow him to use what he wants.

### 3. Types of cloud computing:

The National Institute of Standards and Technology (NIST) has identified three cloud computing models: (Kello, Sabah Muhammad, 2015. p. 4) , (Al-Samarrai, Salwa Amin and Al-Akedi, Abd al-Sattar Abd Al-Jabbar, 2012, p. 334), (Lakhmi Chand Goyal & Pradeep Kammar Jatav, 2011, p12)

#### A- Public Cloud Computing:

The term public cloud computing does not always mean that it is free although it can be free or relatively cheap to use, but rather describes cloud computing from a traditional perspective where the resources are provided on a self-service basis over the Internet.

#### B- Computing Private Cloud:

This model includes the provision of cloud infrastructure for the purpose of use by one

company that manages and operates it, where in this type the cloud services are directed only to a specific company and its services are managed by the company or through a third party that manages the services between the company and users. (Wuhe & Cernusca & Abdous, 2011, p.3), ( Madan & Kumar & Pant & Arora , 2012 , p.3)

#### C- Computing Community Cloud:

This model includes the provision of a cloud infrastructure for the purpose of common use, that this type of cloud is controlled and used by a group of companies, where it is possible to create and manage a shared cloud for many companies with the same requirement and this type is suitable for small and medium companies . (Masud & Huang , 2012, p.4)

#### 4- Obstacles to using cloud computing:

There are a number of reasons that may limit the application or reliance on cloud computing because it does not meet some of the needs, including the following : (Ahmed, Rehab Fayez, 2013, p. 26)

- A. Interruption of the beneficiary's business due to the possibility of a network failure or the service provider stopping due to a specific or sudden reason.
- B. B - It requires a continuous connection to the Internet, where



the Internet is used by linking applications and documents, and if there is no Internet connection, nothing can be accessed, even private documents . (Hussein, Laith Saad Allah and Al-Sumaida'I, Abdullah Abdul-Haq Khamis, 2012, p. 145)

C. They do not work well with low-speed connections because the speed of the Internet connection affects cloud computing, making it very slow or impossible, especially dial-up services, and web applications require a wide range of frequencies for easy downloading and opening of large files.

D. The transfer of control over the infrastructure from the company to control by the service provider because the company becomes at the mercy of the service provider . (Kello, Sabah Muhammad, 2015. p. 6)

E. Concern by some users of cloud computing service about the problem of data security and information privacy. (Mayank Yuvaraj, 2015, p.1)

### **THIRD: THE ACCOUNTING IMPACT OF THE SHIFT TO USING CLOUD COMPUTING TECHNOLOGY:**

The economic and accounting benefits are one of the main reasons for introducing cloud systems into the business environment in the first place, these benefits are to rationalize the use of both cost and effort through outsourcing and here we must study carefully to reconcile reducing costs with increasing efforts to build and operate such The system and cloud computing help to achieve economic competitiveness by achieving the following: (Pavan Kumar Bollineni , 2011, p.49) ,(Kozhikode, 2013, p.93) ,(Benedikt Martens & Marc Walterbusch & Frank Teuteberg, 2012, p.3)

**1-Reducing costs:** One of the first concerns is building cloud computing systems, which can adapt to the changing behavior of the user of this service and reduce costs for building hardware, equipment, software, database and infrastructure maintenance, through which software, hardware and equipment can be rented for a small cost, no matter where they are located.

**2-Pay according to usage:** Pay-per-use relates to the quality and

quality of services provided. One of the main economic drivers of moving to cloud computing is the structural change in business, where cloud computing provides solutions to enable small and medium businesses to develop and adopt innovative solutions.

### 3- **Converting capital expenditures**

**to operating expenses:** It is an implicit feature by which the capital expenditures needed to build local infrastructure are converted into operational expenditures by outsourcing computing resources to cloud systems on demand and their scalability, thus the expansion of companies is easy and inexpensive, there is no need to invest in new equipment and servers, and this is in the interest of companies as this technology provides solutions for small and medium companies.

### 4- **The impact of cloud accounting on environmental (green)**

**accounting :** Technological development and the increase in the use of energy, devices and equipment have cast a shadow over the environment, as the negative effects of large energy waste and its impact have become a danger of concern, as the traditional

infrastructure in economic units requires a large consumption of energy represented in the large number of devices and equipment, some of which remain working. Full-time (24 hours), this leads to a huge waste of energy, which is a counter-trend to the trend of sustainability that the world is heading towards. Undoubtedly, the use of this large energy results in tons of carbon dioxide, and this leads to serious environmental risks. Here the role of cloud accounting came to maximize resources by sharing infrastructure for many users, reducing resources and wasted energy, reducing loads, and serving a large number of economic units and users through optimal use of energy in addition to efficiency in electricity consumption, which contributes to reducing toxic gas emissions.

Cloud accounting leads to environmental service and sustainability.

### 5- **The impact of cloud accounting on management accounting :**

Management accounting is always affected by technological developments and exploits these developments, as accountants are always looking to use the best to

practice their work, and this requires great efforts to understand the systems and processes of economic units and their clients, As in the normal situation, we wait until the end of the fiscal year to know the result of the business and how things were performed, but with cloud accounting, economic units can access all their financial and non-financial information at any moment, which was fed by the customer management system and planning systems. Integrated resources and data entered by sales staff, customers, logistics, accounts, etc. , This makes accounting less record keeping and enables them to provide financial advice more than ever. In addition, data is everything in management accounting. When dealing with those who rely on cloud accounting, all the data and information they need will be stored on the cloud and therefore will not he has to leave his office and search to access the data, and this saves time and energy when

the accountant can get it without having to go to multiple places to get the data.

#### **Fourth: The practical aspect:**

To complement what was presented in the theoretical side of the study, the researchers used a questionnaire to test the validity of the hypotheses based on the literature of scientific research and previous studies. The form was designed and distributed electronically to the sample of the study community, which are accountants, university professors and graduate students, where 100 forms were distributed and 93 of them were retrieved, valid for statistical analysis.

#### **1. Internal consistency validity index, through:-**

- A. **The correlation of the score of each item with the total score of the axis:** The correlation coefficients of the degree of each individual with the total score of the axis to which it belongs were calculated, and the results came as shown in Table (1), as follows:



Table (1) Evaluate the correlation coefficients of the degree of each individual with the total degree of the axis to which it belongs:

Axis	Single number	Correlation coefficient	Axis	Single number	Correlation coefficient
The second axis: the relationship between the application of accounting technology and cost reduction	1	<b>0.601**</b>	The second axis: the relationship between the application of accounting technology and improving the quality of work in the accounting system	1	<b>0.698**</b>
	2	<b>0.642**</b>		2	<b>0.737**</b>
	3	<b>0.618**</b>		3	<b>0.772**</b>
	4	<b>0.435**</b>		4	<b>0.683**</b>
	5	<b>0.729**</b>		5	<b>0.719**</b>
	6	<b>0.703**</b>		6	<b>0.752**</b>
	7	<b>0.742**</b>		7	<b>0.753**</b>
	8	<b>0.777**</b>		8	<b>0.638**</b>
	9	<b>0.629**</b>		9	<b>0.674**</b>
	10	<b>0.704**</b>		10	<b>0.625**</b>
	11	<b>0.790**</b>		11	<b>0.738**</b>
	12	<b>0.752**</b>		12	<b>0.652**</b>
	13	<b>0.599**</b>		13	<b>0.662**</b>

B. **The degree of correlation of each axis with the total score of the scale:** The correlation coefficients of the degree of each axis with the total score of the scale were calculated, and the results came as shown in Table (2), as follows:

Table (2) The values of the correlation coefficients of the degree of each axis with the total degree of the scale:

Axis	The correlation coefficient of the dimension with the total score of the scale
The first axis: the relationship between the application of cloud accounting and cost reduction	0.842
The second axis: the relationship between the application of accounting technology and improving the quality of work in the accounting system	0.860

2. **The validity of the questionnaire form:** It means that the resolution gives one results if it is re-applied to the same sample of the examinees in the same circumstances. The reliability was calculated using the Alpha-Cronbach method. The researchers calculated the reliability of the resolution using the Alpha Cronbach method, and the results were as shown in the following table:

Table (3) The values of the "alpha" Reliability coefficients for the resolution axes and the overall degree of resolution.

Axis	Phrases Number	Alpha coefficient (Reliability coefficient)
The first axis: the relationship between the application of cloud accounting and cost reduction	13	0.906
The second axis: the relationship between the application of accounting technology and improving the quality of work in the accounting system	13	0.913
Full questionnaire	26	0.909

**3. Analyzing the results of hypothesis tests :** Analysis of the results of the first hypothesis: "There is no statistically significant relationship between the application of cloud accounting technology and cost reduction. To verify the validity of this hypothesis, the researchers used the ( $K^2$ ) Chi-Square Test to know the views of the sample members of the (93) about the relationship between the application of cloud accounting and cost reduction, and this is illustrated by Table (10) as follows:

Table (4) The responses of the study sample to the questions of the first axis:

Phrases	Alternatives										K <sup>2</sup>	Sig level	Relative importance	Ranking
	Totally agree		Agree		Neutral		I do not agree		I don't totally agree					
	K	%	K	%	K	%	K	%	K	%				
1- The application of cloud accounting technology contributes to reducing capital costs	41	44.1	47	50.5	5	5.4	0	0	0	0	33.3	0.01	87.7	2
2- The application of cloud accounting technology contributes to reducing maintenance costs	41	44.1	43	46.2	9	9.7	0	0	0	0	23.5	0.01	86.9	4
3-The application of cloud accounting technology contributes to	36	38.7	47	50.5	9	9.7	1	1.1	0	0	61.3	0.01	85.4	8

reducing capital costs														
4-The application of cloud accounting technology contributes to reducing the number of devices and equipment	34	36.6	49	52.7	9	9.7	1	1.1	0	0	63.5	0.01	84.9	10
5-The application of cloud accounting technology contributes to reducing operational costs	37	39.8	48	51.6	7	7.5	1	1.1	0	0	67.1	0.01	86	6
6-The application of cloud accounting technology contributes to transforming capital expenditures into operational	37	39.8	48	51.6	7	7.5	1	1.1	0	0	67.1	0.01	86	6
7-The application of cloud accounting technology contributes to providing technology to help small and medium-sized companies	38	40.9	46	49.5	8	8.6	1	1.1	0	0	62.9	0.01	86	6
8-The application of cloud accounting technology contributes to reducing the cost of building systems for companies	40	43.0	46	49.5	6	6.5	1	1.1	0	0	68.4	0.01	86.9	4
9-The application of	43	46.	4	48.4	5	5.4	0	0	0	0	32.7	0.01	88.2	1

cloud accounting technology contributes to increasing the costs of courses and development		2	5												
10-The application of cloud accounting technology contributes to the optimal use of company resources	44	47.3	38	40.9	8	8.6	2	2.2	1	1.1	92.4	0.01	86.2	5	
11-The application of cloud accounting technology contributes to reducing labor costs	46	49.5	39	41.9	7	7.5	0	0	1	1.1	65.6	0.01	87.7	2	
12-The concept of cloud computing is one of the modern things that companies have started to apply	39	41.9	41	44.1	12	12.9	0	0	1	1.1	50.9	0.01	85.2	9	
13-The application of cloud accounting technology contributes to reducing data processing costs	38	40.9	44	47.3	10	10.8	1	1.1	0	0	56.7	0.01	85.6	7	

The responses of the study sample about the relationship between the application of cloud accounting and cost reduction, that there were statistically significant differences in all statements in favor of the alternative (agree), where all values of (Ka2) were significant at the level of significance (0.01). With the exception of statement (10), the differences in it were in favor of the alternative (I completely agree), where the value of (Ka2) was a function at the level of significance (0.01). That is, the study sample largely agree that there is a

statistically significant relationship between the application of cloud accounting technology and cost reduction.

Thus, the researcher can reject the null hypothesis and accept the alternative hypothesis that “there is a statistically significant relationship between the application of cloud accounting technology and cost reduction.

Analysis of the results of the second hypothesis: There is no statistically significant relationship between the

application of cloud accounting technology and improving the quality of work in the accounting system.

To verify the validity of this hypothesis, the researcher used the ( $K^2$ ) Chi-Square Test to know the vision of the sample members (93) about the relationship between the application of cloud accounting technology and improving the quality of work in the accounting system, and this is evident through Table (5) as follows :

Table (5)The responses of the study sample to the questions of the second axis

Phrases	Alternatives										K <sup>2</sup>	Sig level	Relative importance	Ranking
	Totally agree		Agree		Neutral		I do not agree		I don't totally agree					
	K	%	K	%	K	%	K	%	K	%				
1- Cloud computing helps transfer data and information between the company and its branches at high speed and secure levels	46	49.5	33	35.5	12	12.9	2	2.2	0	0	51.2	0.01	86.5	8
2-The shift to cloud computing technology supports the work environment, health and environmental conditions	46	49.5	35	37.6	10	10.8	2	2.2	0	0	55.2	0.01	86.9	6
3-The shift to computing technology avoids the company's security risks and network information disasters	44	47.3	36	38.7	11	11.8	2	2.2	0	0	51.4	0.01	86.2	9
4-Cloud accounting improves organizational efficiency and improves collaboration between information and communication	42	45.2	41	44.1	10	10.8	0	0	0	0	21.4	0.01	86.9	6
5-The application of cloud accounting contributes to reducing the time and	40	43.0	44	47.3	9	9.7	0	0	0	0	23.7	0.01	86.7	7



effort to do business in the accounting system														
6-The shift to cloud computing increases work productivity	44	47.3	40	43.0	8	8.6	1	1.1	0	0	61.9	0.01	87.3	5
7-The shift to cloud computing provides secure network archiving that can be dispensed with electronic archiving	41	44.1	43	46.2	8	8.6	1	1.1	0	0	61.6	0.01	86.7	7
8-The transition to cloud computing facilitates the procedures for accessing customer requests in a limited time	48	51.6	37	39.8	8	8.6	0	0	0	0	27.5	0.01	88.6	3
9-The shift to cloud computing provides a high use of applications and software that facilitate reservation procedures and deal with the company's customers	51	54.8	37	39.8	4	4.3	0	0	1	1.1	78.5	0.01	89.5	2
10-Cloud computing reduces the burdens of managing and building systems for companies	56	60.2	32	34.4	5	5.4			0	0	42	0.01	91	1
11-Cloud accounting helps improve the output of the accounting system	50	53.8	34	36.6	8	8.6	1	1.1	0	0	67	0.01	88.6	3
12-The use of cloud accounting improves the efficiency of employees in the accounting system	53	57.0	32	34.4	7	7.5	1	1.1	0	0	74	0.01	89.5	2
13-The application of cloud accounting contributes to reducing bookkeeping and records within the accounting system	44	47.3	43	46.2	5	5.4	1	1.1	0	0	70.9	0.01	88	4

The responses of the study sample to the relationship between the application of cloud accounting technology and the improvement of the quality of work in the accounting system showed that there were statistically significant differences

in all statements in favor of the alternative (I completely agree), where all values of ( $K^2$ ) were significant at the level of significance (0.01).

That is, the study sample fully agree that the application of cloud computing

technology leads to improving the quality of work in the accounting system.

Thus, the researcher can reject the null hypothesis and accept the alternative hypothesis that , there is a statistically significant relationship between the application of cloud accounting technology and improving the quality of work in the accounting system.

## CONCLUSIONS AND RECOMMENDATIONS:

### Conclusions:

1. The concept of cloud computing is one of the modern topics that has begun to be applied in many companies, as the service provider provides software services or hardware and equipment in the latest ways without the company buying these devices.
2. The application of cloud accounting helps in reducing costs in general and increasing the efficiency of the work of the accounting system.
3. The application of cloud accounting contributes to developing work, developing skills and capabilities of employees, and keeping pace with global technical developments.
4. Most international companies are currently investing in modern technological developments, the most important of which is cloud computing technology because of its

advantages that contribute to achieving many benefits for companies.

### Recommendations:

1. The necessity of using cloud computing technology because of the great economic benefits it provides for companies.
2. Involve employees in specialized courses to develop their skills and capabilities to deal with modern technologies, including cloud computing.
3. Updating the curricula in the faculties of administration and economics to keep pace with the technical developments that the world is witnessing in the modern business environment.
4. The need to gradually switch to cloud computing technology and avoid rapid changes that could negatively affect.

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