SCITECH
RESEARCH ORGANISATION|

Volume 4, Issue 2

July 07, 2015

Journal of Information Sciences and Computing Technologies
www.scitecresearch.com

Electronic Accounting Applications using Cloud Computing technology

[1]Alameen Eltoum Mohamed Abdalrahman, [2]Adil Mahmoud Mohamed Mahmoud
[1]College of sciences, Computer Department, Alasmaryia University, Libya
[2]College of Computing & IT, I. S. department, Shaqra University.

Abstract

Todays' electronic accounting have become dependent on the information technologies and communication (IcTs) to support processes, business, functions and financial activities technology acts as a major requisite.One of these technologies is acloud computing which has changed the ways we exchange financial information and presentation of this interpreted and analyzed financial data to the end user or the client. cloud computing has a great role in mounting the heights on which e_accounting, cloud computing has helped the facades of business functions particularly e_accounting in achieving flexibility and efficiency like never before. The electronic accounting has again played its role in giving new dimensions to these business functions via the Cloud Computing. E_accounting applications going to move from the desktop into the cloud computing, wheree_accounting applications and accounting books are hosted on a "cloud" consisting of thousands of computers and servers this can gain many benefits for e_accounting application also faces many problems.

Keywords: Electronic accounting; Cloud computing; Information and Communication Technologies (ICT).

1. Introduction

There has been a constant growth in the use of information and communication technology(ICT) and electronic accounting business to support the exchange of data and information within and between organisations. New technologies, like the cloud computing ,Internet and mobile solutions have provided new business opportunities and operations. E_accounting is believed to have a significant impact also on accounting applications , through changing business processes and the function to support business transactions, and leading to changes in the accounting records maintained and the accounting procedures followed[1].

The paper focuses on the electronic accounting using cloud computing andThe advantage and disadvantage for use these technologies into electronic accounting application.

2. Electronic accounting

2.1 Definition[2]:

E_ccounting or online accounting is the application of online and Internet technologies to the business accounting function .e-accounting is "electronic enablement" of lawful accounting and traceable accounting processes which were traditionally manual and paper-based. E-accounting involves performing regular accounting functions, accounting research and the accounting training and education through various computer based /internet based accounting tools, various internet resources, international web-based materials, institute and company databases which are internet based, web links, internet based accounting software and electronic financial .

E_accounting does not have a standard definition but merely refers to the changes in accounting due to computing and networking technologies.[2] Most e_accounting services are offered as SaaS,'software as a service', i.e. as a cloud computing.

2.2 Benefits of E-accounting:

Some of the major benefits of e-accounting are as under[3]:

1. Anywhere, anytime access of e_accounting application by authorized person, .

2. No need of expensive in-house bookkeepers'expertise.

3. No communication difficulties between the accountant and business owner.

4. The business organization can concentrate on the revenue side of business, and spends as little time as necessary on the accounting and payroll function.

5. Online accounting through a web application is typically based on a simple charge.

6. Zero-administration approach to help businesses concentrate on core activities.

7. Low costs such as installation, upgrades, exchanging data files, backup and recovery.

8. The company's computers, it's documents are still safe on the web server.

2.3 Problems with E-accounting:

There are several problems with adoption of e-accounting by any company, some of them are listed below[4]:

1. Security issuebeacuse the financial information is out side the company .

2. Sharing of financial information of a company with the other (service provider) is a big mindset problem for traditional management.

3. If internet connectivity is down, work will be effected.

4. Lack of some features in the offline office suites, but they are progressively becoming available.

5. News about client information leaked by service provider is a big letdown for the progress of e-accounting adoption.

6. Lack of proper accounting standards are a big worry. Where information can be compromised and distributed, global firms need to be cent-percent as sured that their information is safe and are being safeguarded from identity theft.

3. Cloud computing

3.1 What Is Cloud?

Cloud computing[5] is a term used to describe both a platform and type of application. A cloud computing platform dynamically provisions, configures, reconfigures, and deprovisions servers as needed. Servers in the cloud can be physical machines or virtual machines. Advanced clouds typically include other computing resources such as storage area networks (SANs), network equipment, firewall and other security devices. Cloud computing[6] also describes applications that are extended to be accessible through the Internet. These cloud applications use large data centers and powerful servers that host Web applications such as e_accounting applicaton and Web services(shown in Figure 1)Anyone with a suitable Internet connection and a standard browser can access a cloud application.

3.2 Definition:

A cloud is a pool of virtualized computer resources. A cloud can[5]:

 1-Host a variety of different workloads, including batch-style back-end jobs and interactive, user-facing applications.

2- Allow workloads to be deployed and scaled-out quickly through the rapid provisioning of virtual machines or physical machines.

3- Support redundant, self-recovering, highly scalable programming models that allow workloads to recover from many unavoidable hardware/software failures

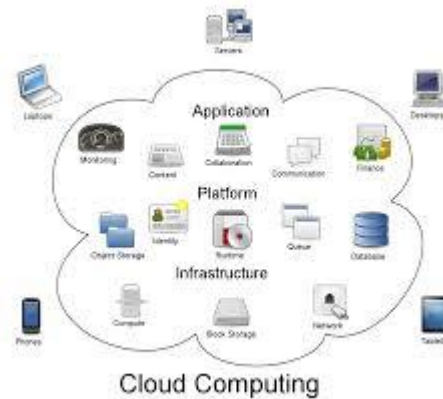4- Monitor resource use in real time to enable rebalancing of allocations when needed.

Figure 1:cloud computing

3.2Type of cloud computing :

Cloud computing is upcoming area with main features namely service availability, pay as per services, scalable feature [7]. It is based on service oriented architecture and the model could be categorized as follows:

a) Public Cloud – it is a type of cloud where third party will provide services to client via internet. Each user will have its access mechanism provided by the third party. Public cloud is a cost effective method to provide services.

b) Private Cloud – private cloud has many benefits over public cloud depending upon the service required. In addition in private cloud data and processes are managed by organization itself. It provides better and controlled infrastructure for security.

c) Community Cloud – Community cloud provides services to a community within organization. Members of community can access data on community cloud. Communities are formed by grouping of people with shared interest.

d) Hybrid Cloud –it is a combination of private, public and community cloud. It has maximum functionalities as compared to all cloud and non critical information is handled by public cloud while critical information and processing is done on organization controlled private cloud.

4. E_accounting application using cloud computing technology

Cloud computing is rapidly emerging as a new paradigm for delivering computing as a utility [8]. It allows leasing of IT capabilities whether they are infrastructure, platform, or software applications as services such as e_accounting(shown in figure2). Its foundation is based on various developments in IT during the last thirty to forty years. As fresh ideas and technology advancement have made it all the more striking and appealing during the Internet age, the way consumers consume and technology enablers deliver solutions has evolved. With a trend towards Cloud based model, the power is shifted to consumers. They have access to more compute power and to new applications, at an alluring price, as well as they enjoy the advantages of a self-service and selfmanaged environment. Cloud computing fosters elasticity and seamless scalability of IT resources that are offered to end users as a service through Internet medium. Cloud computing can help enterprises improve the creation and delivery of IT solutions by providing them to access services in a most cost effective and flexible manner. Although Cloud computing has emerged mainly from the appearance of public computing utilities [9], various deployment models, with variations in physical location and distribution, have been adopted. In this sense, regardless of its service class, Businesses are adopting public Cloud services to save capital expenditure and operational cost by leveraging Cloud's elastic scalability and market oriented costing features. Nevertheless, Cloud computing also raises concerns about data security, management, data transfer, performance, and level of control. Cloud Computing started with a riskfree concept: let someone else take the ownership of setting up IT infrastructure and let end-users tap into it, paying only for what is been used. From this simple idea, a much more sophisticated, complex (and sometimes complicated) market started to grow. Today, businesses can buy computation resources, infrastructure plus platform or infrastructure plus e_accounting applications(shown in figure3). In the language of this market, the computation resources is frequently referred to as Infrastructure as a Service (IaaS), and the applications as Software as a Service (SaaS). In fact, use of the acronym appears ubiquitously from SaaS to PaaS (Platform as a Service) to XaaS (Anything as a Service). Key characteristics and vendors offering these Cloud services are highlighted What makes Cloud computing different from traditional IT approaches is the focus on service

delivery and the consumer utilization model. In the background, service provider's uses particular technologies, system architecture, design and industry best practices to provide and support the delivery of service-oriented, elastically scalable environment serving multiple customers. This helps end users to have more agile and flexible service oriented architecture for their application and services. In a conventional IT scenario, most software companies have procured different components of their application middleware infrastructure layer from various vendors, and brought together these tools into a corporate environment using system integration services and tools. On the other hand, in a Cloud computing scenario, this practice is quite rare. Platform-as-a-Service solutions provide environment and applications development platforms for seamlessly integrating Cloud computing into existing application, services, and infrastructure with a market-oriented approach.

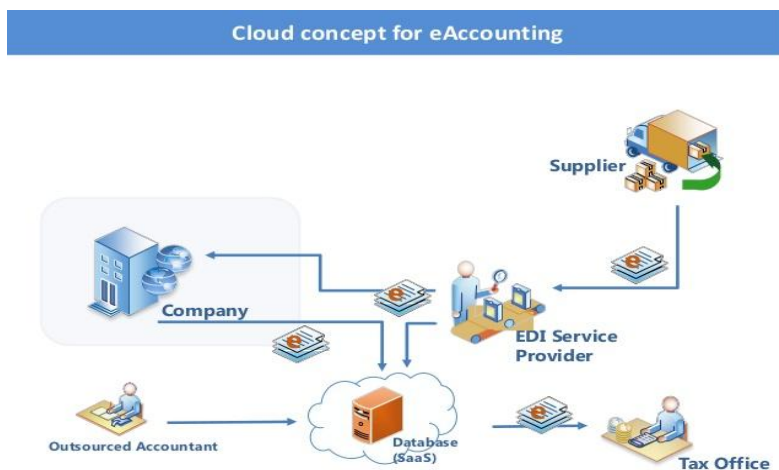

Figure 2: Finance(e_accounting with cloud computing)

Figure 3: Cloud computing for e_accounting

5. Advantages of e_accountingthat using Cloud computing:

Speaking about advantages ofe_accounting using Cloud Computing we present bellow the main benefits for e_accounting in general(shown in figure 4), focusing at some points are as under:

1- Cost efficiency - Cloud computing is probably the most cost efficient method to use, maintain and upgrade, as explained in [10]. Traditional desktop software costs companies a lot, in terms of finance. Adding up the licensing fees for multiple users can prove to be very expensive for the establishment concerned. The cloud, on the other hand, is available at much cheaper rates and hence, can significantly lower the company's IT expenses. Besides, there are many one-time-payment, pay-as-you-go and other scalable options available, which makes it very reasonable for the company in question. Paper [11] adds up that it lowers the cost for smaller firms which intend to apply the compute-intensive techniques.

2- Almost Unlimited Storage. Storing information in the cloud gives you almost unlimited storage capacity.

3- Backup and Recovery. Since all the data is stored in the cloud, backing it up and restoring the same is relatively much easier than storing the same on a physical device. Furthermore, most cloud service providers are usually competent enough to handle recovery of information. Hence, this makes the entire process of backup and recovery much simpler than other traditional methods of data storage.

4- Automatic Software Integration. In the cloud, software integration is usually something that occurs automatically. This means that Cloud users don't need to take additional efforts to customize and integrate their applications as per own preferences. This aspect usually takes care of itself.

5- Easy Access to Information. Once the users register in the cloud, they can access the information from anywhere, where there is an Internet connection. This convenient feature lets users move beyond time zone and geographic location issues.

6- Quick Deployment. most importantly, Cloud computing gives the advantage of quick deployment. Once opting for this method of functioning, the entire system can be fully functional in a matter of a few minutes. Of course, the amount of time taken here will depend on the exact kind of technology that is needed for the business.

7- Easier scale of services. It makes it easier for enterprises to scale their service according to the demand of clients.

8- Deliver new services. It makes possible new classes of applications and deliveries of new services that are interactive in nature.

Figure 4: (advantage of e_accounting using cloud computing)

6-Disadvantage of e_accounting using Cloud computing

In spite of its many benefits, e_accounting using Cloud computing has its disadvantages Businessesneed to be aware of these aspects before going in for this technology. The main risks involved in Cloud Computing are[12]:

1. Technical Issues. Though it is true that information and data on the Cloud can be accessed any time and from anywhere, there are moments when the system can have some serious malfunction. Businesses should be aware of the fact that this technology is always prone to outages and other technical issues. Even the best Cloud service providers run into this kind of trouble, in spite of keeping up high standards of maintenance.

2. Security in the Cloud. The other major issue of e_accounting application under Cloud is represented by security. Before adopting this technology, beneficiaries should know that they will be surrendering all their company's sensitive information to a third-party cloud service provider. This could potentially impose a great risk to the company. Hence, accounting need to make sure that they choose the most reliable service provider, who will keep their information totally secure. Switching to the cloud can actually improve security for a accounting.

3- Prone to attack. Storing information in the cloud could make the companies vulnerable to external hack attacks and threats, therefore there is always the lurking possibility of stealth of sensitive data.

 4- Possible downtime. Cloud computing makes the small business dependent on the reliability of their Internet connection.

5- Cost. At first glance, e_accounting application cloud computing may appear to be a lot cheaper than a particular software solution installed and run in-house. Still, the companies need to ensure that the cloud applications have all the features that the software does and if not, to identify which are the missing features important to them. A total cost comparison is also required. While many cloud computer vendors present themselves as utility-based providers, claiming that they only charge for what customers use, Gartner says that this isn't true; in most cases, a company must commit to a predetermined contract independent of actual use. Companies need to look closely at the pricing plans and details for each application.

6- Inflexibility. Choosing a Cloud computing vendor oftenly means locking the business into using their proprietary applications or formats. this a company needs to be able to add and/or subtract Cloud computing users as necessary as its business grows .

7- Lack of support. many cloud-based applications make it difficult to get customer service promptly – or at all.

7- Conclusion

E_accounting is the application of online and internet technologies to the business accounting function. One of this technologies is Cloud computing provides a better way to offer services to clients related to different region s. E-accounting could use cloud computing gain many benefits low cost, easy integration , Easier scale of services, recovery, backup and anywhere and anytime access of financial information are positives also still problemes such as security, inflexible, lack of trust. So we can use this technology but we care about some issues or problems may face. The paper conclusion it's better to use cloud computing in e_accounting but we must care from some problems before we change to cloud computing technologies.

References

[1] IFAC 2002. E-Business and the Accountant. March. http://www.ifac.org. (datum...).

[2] Deshmukh, Idea Group, 2006 , E-accounting ,http://en.wikipedia.org/wiki/E-accounting, (Accessed on 23.01.2015)

[3] RavalPriyang D. and MaisuriaMahendra H (2009)E-Accounting: A Concept and Implementation *.International Indexed & Refereed Journal, March, 2013, ISSN 0974-2832 (Print), E-ISSN- 2320-5474, RNI RAJBIL, 2009/29954, VOL –V * ISSUE- 50.

[4] Dr. Patel J. K.: (2011) Adoption and impact of e-accounting(2011) golden reasearchthought vol1 issue 2 pp 1-4 , ISSN no 2031-5063.

[5] Cloud_computing ,Web-Resource http://en.wikipedia.org/wiki/Cloud_computing (Accessed on 25.04.2015)

[6] Galen Gruman and Eric Knorr. What cloud computing really means. InfoWorld, April 2008. Electronic Magazine, available at http://www.infoworld.com/article/08/04/07/15FE-cloud-computing-reality 1.html.

[7] Gong Zhang, Chiu, L, Ling Liu, Adaptive Data Migration in Multi-tiered Storage Based Cloud Environment, IEEE software, p148 – 155, 2010

[8] R. Buyya, C. Yeo, S. Venugopal, J. Broberg, and I. Brandic, Cloud Computing and Emerging IT Platforms: Vision, Hype, and Reality for Delivering Computing as the 5th Utility, Future Generation Computer Systems, 25(6):599-616, Elsevier, The Netherlands, June 2009.

[9] R. Buyya, J. Broberg, and A. Goscinski (eds), Cloud Computing: Principles and Paradiggms, Wiley Press, USA, Feb. 2011.

[10] Priya Viswanathan, Cloud Computing – Is it Really All That Beneficial? Advantages and Disadvantages of Cloud Computing, http://mobiledevices.about.com/od/additionalres ources/a/Cloud-Computing-Is-It-Really-AllThat-Beneficial.htm

[11] Evangelinos, C. and C. Hill. 2008, Cloud Computing for parallel Scientific HPC Applications: Feasibility of Running Coupled Atmosphere-Ocean Climate Models on Amazon's EC2, The First Workshop on Cloud Computing and its Applications (CCA'08). Chicago, IL

[12] Susan Ward, 5 Disadvantages of Cloud Computing. Consider These Before You Put Your Small Business In the Cloud, http://sbinfocanada.about.com/od/itmanagement /a/Cloud-Computing-Disadvantages.htm.