

ACCOUNTING IN THE CLOUD

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Abstract:

Accounting in the 21st century cannot be imagined without the support provided by information technology. The innovative cloud computing phenomenon has proven its value not only in the IT industry, but also in the accounting field. Thus, a new concept has emerged: *cloud accounting* is the next big thing that is promising to reshape the accounting function. By using this service-based model, a company will be able to access its financial data over the internet, through a web browser. Given the fact that data is not stored locally, the accountant, the business owner or other business partners can collaborate in a paperless environment and share financial data regardless of their physical location. The purpose of this qualitative paper is to review the most significant features of the cloud accounting model, as a convenient means to improve performance for both the accounting profession and the business itself.

Keywords: cloud accounting, cloud computing, information technology, accounting, innovation

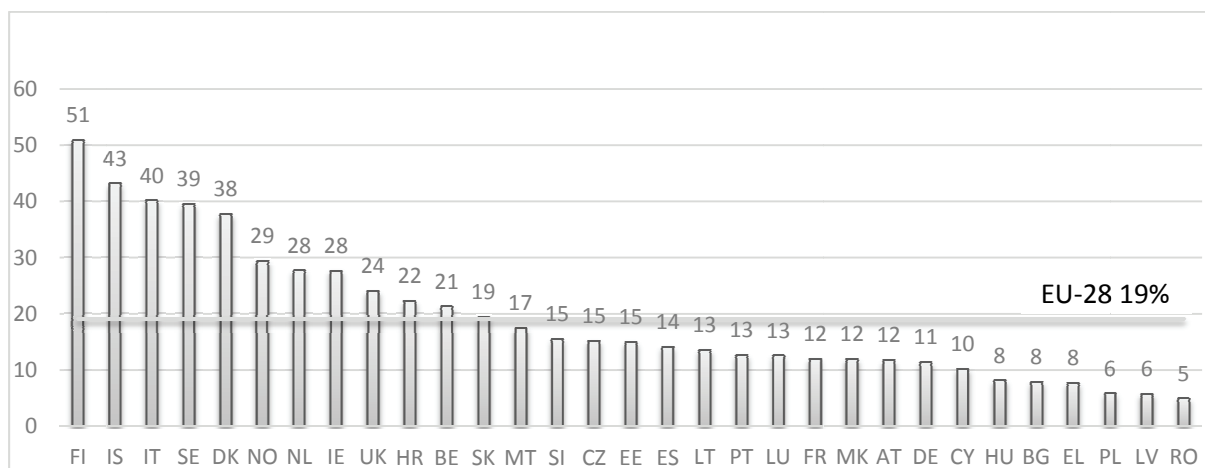
1. INTRODUCTION

In an increasingly dynamic and competitive business environment, people and companies are compelled to adapt and to consciously evolve. As a matter of fact, this truth has been known for thousands of years. “*There is nothing permanent except change.*” This statement was attributed (Engel et al., 2007) to Heraclitus, an influential Greek philosopher that lived in antiquity (around 500 B.C.). Years later, in the 19th century, George Bernard Shaw noted that “*progress is impossible without change, and those who cannot change their minds cannot change anything*”. In the 21st century, change is especially driven by the irreversible and accelerated expansion of information technology. The digital evolution has greatly impacted almost every area of activity (even our daily lives), and this trend is very likely to continue in the foreseeable future. Given the fact that the economic environment is very competitive and unpredictable, companies have to keep up with the current advances in the IT field and thus, improve their performance and efficiency.

Over time, the accounting domain, in particular, has been adapting to the continuous development of IT solutions. After the automation of accounting data that started in the late 1950s, the emergence of financial software in late 1970s was the next major step that has consequently improved the practice of accounting. Financial software enabled accountants to do their job faster, more efficiently and ensured substantial cost savings. The rise of the internet in the 1990s could be considered the most significant innovation that the IT domain has brought forward after the invention of the personal computer. Subsequently, the internet has spread in almost every domain and has become a valuable “asset” that most people could afford. Indeed, our entire society is highly connected thanks to internet-based applications and today, world-wide collaboration is crucial. Due to the speed and agility of the internet, it has also reshaped the traditional business model.

In the last decade, technology evolved rapidly and a new breakthrough for the IT field has emerged. *Cloud computing* can be described as the delivering of computer power, storage, infrastructure or software, *as a service*, over the Internet, on a pay-per-use basis. In fact, this shift from offering products to delivering services has greatly accelerated in the past fifty years (Consumer Electronics Association, 2014) and the “as a service” feature of cloud computing has proven to be a disruptive way of attaining IT resources. Due to its multiple benefits (especially for the business field), this new perspective has been taken into consideration by many companies. In the European Union, the use of cloud technology is greater in countries like Finland (51%), Iceland (43%), Italy (40%), Sweden (39%) and Denmark (38%), while the average usage of cloud computing services among European enterprises is 19% (Figure 1).

Figure 1: Use of cloud computing services (% of enterprises)



Source: Giannakouris & Smihily (Eurostat), 2014, p. 2.

A 2014 global software quality assurance report suggests that cloud computing is getting more popular over time. The study shows that cloud adoption is continuously expanding. In 2014, 28% of applications were hosted in the cloud, and by 2017 the percent of cloud-based software will rise to 35% as reported by the research (World Quality Report, 2014-2015). According to a 2014 study published by Cisco Systems, by 2018, 78% of workloads will be processed by cloud data centres and

only 22% will be processed by traditional data centres (Cisco, 2014). Computerworld's annual forecast survey conducted in 2014 on 194 IT executives predicts that IT spending on cloud services will continue to increase in 2015. Over 40% of the respondents believe that in 2015, their companies will allocate more funds on cloud-based applications (Computerworld, 2014).

Cloud computing is one of the top IT trends for 2015, as stated by Gartner, the world's leading IT research and advisory company. Gartner also declared cloud technology as a *new standard* for application development: *"cloud is the new style of elastically scalable, self-service computing and both internal applications and external applications will be built on this new style"* (Gartner, 2014). Indeed, almost every IT research firm or IT expert foresees that cloud adoption is accelerating because the cloud is enabling ubiquitous computing, thus improving the way that organisations and individuals alike access resources and share knowledge or experiences. The cloud is reshaping the manner in which people and companies collaborate, store or share information and procure computing resources for both their personal and professional use.

If we consider our highly competitive and dynamic business sector, we will notice that it is gradually turning into a digital environment as the cloud paradigm is consistently evolving, expanding and merging with different fields and professions. As anticipated, cloud technology has also spread in the accounting domain. The accounting profession has continuously adapted to the economic context and to IT developments; nowadays, cloud service providers are also offering cloud-based accounting solutions. Therefore, the accounting function can be leveraged through cloud computing technology. By using *cloud accounting*, a company can access accounting software through a web browser, over the internet. Instead of being installed on the user's computer, the application is run on the cloud provider's servers. This is an important shift because it enables accountants and business owners to connect to their financial affairs at any time and from any location, hence addressing the need to have an up-to-date overview of the business.

In this theoretical paper, we debate the actual value of cloud computing technology for the accounting domain. The purpose of this study is to assess the most meaningful characteristics and advantages of cloud-based accounting applications. The paper also examines some of the most notable issues related to cloud technology, as perceived by accounting professionals.

2. WHAT IS ACCOUNTING IN THE CLOUD?

The accounting profession has generally proven to be receptive towards IT innovation and there is no doubt that the cloud computing phenomenon has the potential to remodel the accounting software market (Hatherly, 2013). Given the fact that the cloud computing adoption trend is continuously rising, several companies from all over the world have already embraced cloud-based accounting software. Doing accounting in the clouds ensures the same functionalities as the traditional accounting software that is locally installed on the user's computer.

The particularity of cloud computing resides in the way that the software is being accessed: through a web browser, by using an internet connection. This is actually the reason why cloud technology is said to be delivered "as a service", rather than as a product, just like utilities (e.g., electricity, telecommunications). Consequently, one of the most significant features of cloud accounting software is the possibility to have real-time access to financial data, regardless of the user's physical location. There is no need to purchase, install and manage expensive infrastructure or applications. Cloud technology enables business agility because the company can access computing resources on demand, depending on their specific needs in a certain period of time.

"Cloud accounting", also known as "online accounting", "web-based accounting", "real-time accounting" or "cloud financials", is gradually replacing stand-alone accounting software. Nowadays, financial executives are interested in cost-effective and practical accounting solutions that, besides performing automated tasks and delivering detailed statements, are also flexible enough in order to adjust to different business needs or market conditions. An appropriate and valuable accounting application should not only be able to gather and process financial data, but should also enable managers to make convenient and timely decisions. In order to address these issues and make the accountant's job easier, cloud accounting software has been developed and, as time goes by, increasingly more companies are recognising its value as an effective means for saving time and money.

3. WHY CLOUD ACCOUNTING?

According to practitioners, online accounting can benefit both accounting professionals and the business itself. The most significant advantage of cloud technology is the ability to access resources remotely and based on request, thus enhancing *business agility* and impacting the entire economic field. Due to the actual location of financial data (on the provider's data centre) and because it is accessed over the internet, cloud accounting enables users to operate their data at any time and from any location. Both large and small enterprises have the opportunity to acquire high-end technology for a low price; they only pay a periodic subscription fee, based on their needs (usage) instead of investing in expensive hardware and applications.

One of the most noted benefits of cloud technology is related to substantial *cost savings* in IT budgets. In the traditional accounting model, companies have to invest significant resources in:

- building and maintaining their own infrastructure,
- installing applications on each existing computer and updating them.

This issue can be a difficult task, especially for start-up companies, but it can be easily solved by an online accounting solution. Cloud-based applications are delivered as a service, thus users only pay a periodic fee for using the accounting software. For large enterprises, adopting cloud-based accounting software can resume to simply shifting away from investing money in licences, IT staff and other necessary devices. However, the ones that can benefit the most from increased efficiency and reduced maintenance costs are small and medium-sized companies; in the old-fashion accounting model, these companies would have to invest in expensive software and resources; for many of them, such investments are simply not affordable.

According to Gartner analyst David Mitchell Smith, nowadays companies are moving beyond seeing cloud technology only as a means to reduce IT costs; many organisations are now aware of other important capabilities of cloud computing like *elasticity, scalability and its self-service nature*. (Computerworld, 2014). By adopting the cloud model, businesses can easily scale up and down and immediately adapt to the increasingly dynamic and challenging economic context. Given the fact that cloud software is delivered as a service, companies have the possibility to adapt their financial application depending on the necessary level of service or volume of work. In addition, by adopting a cloud accounting solution, users can automatically perform repetitive and resource-consuming activities, hence *optimizing the business workflow*.

Other important characteristics of cloud accounting are the *ease of use and the intuitive design*; cloud accounting applications can be approached by both financial experts (accountants, auditors) and non-experts (business owners, business partners). Another useful feature refers to the companies' possibility to *use a trial version* of the cloud accounting solution. By doing so, companies are able to decide whether the cloud accounting model is suitable for them, before making a long-term commitment.

The cloud model enables *collaboration and communication* between users and different business associates, who are able to simultaneously and remotely access accurate and real-time financial information, no matter their location. A simple example of cloud-based collaboration feature refers to the online payment of clients' invoices that can be made effortlessly. This shift from paper-based accounting reports to timely financial dashboards can ensure greater insight into the business profitability.

Another relevant aspect that should be considered by organisations is the increased *level of security* ensured by cloud applications. Users have got restricted and specific levels of access to the cloud solution. The company's financial data, hosted in the cloud, is regularly backed up and closely protected though encryption and complex security protocols.

Cloud accounting can definitely be a useful tool for any proactive business. However, specialists recommend a rigorous pre-adoption evaluation (Osintsev, 2013). The current cloud accounting market is various and very populated, therefore companies have to give their undivided attention before committing to a certain provider or solution. The most suitable online accounting application has to match all their particular requirements and objectives. Organisations should bear in mind that a

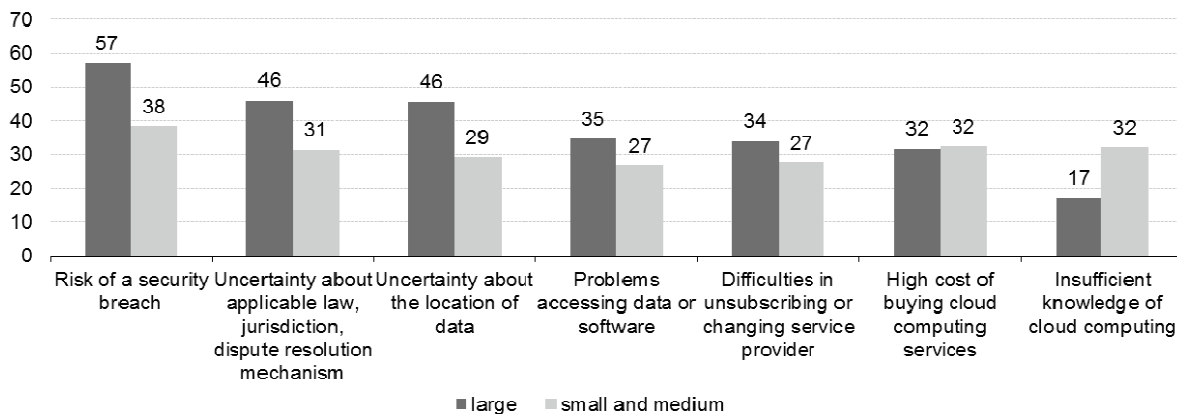
successful accounting software selection process depends greatly on preliminary assessment of the company's individual needs and the potential solution's features.

4. WHY NOT CLOUD ACCOUNTING?

There are, of course, a number of concerns associated with cloud services that are delaying large-scale adoption. Security breaches and the loss of the internet connection are examples of cloud-related issues perceived by sceptical practitioners. Nevertheless, these vulnerabilities can be reduced by means of clear-cut contractual terms (Cloud Standards Customer Council, 2015).

The privacy of sensitive data and its protection from unauthorized access, in other words, the *security of data* is considered the most significant obstacle for cloud service adoption. This fact is confirmed by a 2014 Eurostat research on the use of cloud services by the European Union enterprises. According to this study, the risk of a security breach is the top factor that is limiting cloud adoption (Figure 2). The survey shows that 57% of large enterprises and 38% of small and midsize companies believe that the security concern is a serious threat to cloud-based services (Giannakouris & Smihily, 2014).

Figure 2: Factors that are limiting companies from using cloud services, by size class, EU-28 (% companies that are using the cloud)



Source: Giannakouris & Smihily (Eurostat), 2014, p. 7.

However, practitioners and business owners should be aware that in most cases, a specialized cloud service provider can actually ensure a better level of security than the one that companies would usually establish for their own local computers (especially small and medium-sized enterprises). An explicit approach to risk management should be taken into account by companies, regardless of their size. Responsible cloud providers are able to implement proactive security and privacy policies for the cloud service. In addition, they develop a risk response plan that can help companies handle different security-related problems and guarantee that mission-critical applications can securely run in the cloud (Computerworld, 2014).

We should also mention that, in general, a certain level of risk is inherently accepted, even if the company's data is stored locally on its own servers or in the cloud. Moreover, cloud service providers are required to comply with certain security standards, thus attesting their integrity and credibility. Particular security certifications are also necessary, because they confirm that the cloud provider is able to offer high quality and reliable services.

Concerns related to *applicable regulation* and the *location of data* can be addressed through specific and detailed clauses that should be included in the service contract. An *interruption of the internet connection* might affect the company's activity. This issue can be mitigated if the cloud service provider has agreed upon a rigorous service-level agreement with his own network provider. In this case, the user does not have to experience any downtime. There are also certain providers that enable users to continue their activity by not only working online, but also offline.

Furthermore, companies are concerned about the *loss of control over their data*. In order to eliminate this risk, companies are advised to carefully understand and negotiate the terms of the agreement

before committing to a certain cloud service provider. A well-defined service level agreement is critical for the business continuity and the safety of the company's data.

As in the case of any other new paradigm, cloud accounting is also confronted with people's scepticism and criticism. Some professionals are rejecting this new technology because they consider it disruptive in comparison to the traditional way of doing accounting. Such an attitude can be associated with the *fear of the unknown*. In fact, American writer H. P. Lovecraft once said that "*the oldest and strongest emotion of mankind is fear, and the oldest and strongest kind of fear is fear of the unknown*". The *lack of knowledge* or *insufficient information* concerning the benefits of online accounting can be another reason that prevents adoption (or acceptance).

Regardless of the context, innovation cannot emerge without the novelty of a different perspective. In the last decade, dramatic changes have been occurring, especially in the IT field. Cloud-based solutions are getting increasingly popular in the business environment, and the accounting profession has to keep up with technological advances. A new approach is not necessarily a miscalculation and a mentality shift is sometimes required in order to evolve and adapt.

As a matter of fact, by considering the cloud alternative, companies can give technology the chance to prove its value by helping businesses grow and optimize their workflow. The accounting domain has been continuously adapting to the economic context and cloud-based solutions are a new business approach that can assist professionals and the entire economic landscape. Accountants should be receptive and stay informed about all current or upcoming digital advancements so that they could experience their full potential.

5. CONCLUSIONS

In an increasingly challenging economic context, enterprises can either grow or perish just as quickly; the difference might reside in their ability to adapt to technological advances. Up until now, digital technology, in all its various forms (e.g., the internet, wireless and mobile computing, artificial intelligence, robotics, big data) has greatly improved not only the business workflow and its efficiency, but almost every area of our daily life. The ingenious nature of the cloud computing phenomenon is but a form of "*creative destruction*". Joseph Schumpeter, the Austrian economist who introduced this concept to economic theory in 1942, became known as a "prophet of innovation". He believed that "creative destruction" was in fact, the heart of any progress. Innovation in the 21st century is linked to cloud computing, a disruptive technology that can reshape the business environment as we know it. We should be aware that, whatever the future will bring, the cloud paradigm might be closely related to it. Cloud accounting, an innovative tool designed to assist accounting professionals, has the potential to dramatically shift organisations' strategy from the old-fashioned, reactive way of doing business to a proactive, technology-based approach.

We would like to point out that our qualitative study is business oriented. The paper is based on pertinent issues derived from accounting practice and up-to-date studies and reports published by market research companies, cloud accounting providers and other specialized organisations. We did not intend to present an exhaustive research, nor a technical report on cloud accounting solutions. The article is designed as a condensed review focused on the value or utility of cloud-based applications for both the accounting profession and the entire business field. Companies can greatly gain by adopting cloud accounting software, if they consider aspects like costs, collaboration, and even security. Besides explaining some of the most relevant benefits ensured by these solutions, we have also argued the various issues related to cloud-based solutions and we proposed several means to address such risks. Ultimately, we have come to the conclusion that cloud computing technology does support accountants' activity and can, in fact, make their work a lot easier.

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