



Cloud ERP and Cloud Accounting Software in Romania

Gianina MIHAI*

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ABSTRACT

Nowadays, Cloud Computing becomes a more and more fashionable concept in the IT environment. There is no unanimous opinion on the definition of this concept, as it covers several versions of the newly emerged stage in the IT. But in fact, Cloud Computing should not suggest anything else than simplicity. Thus, in short, simple terms, Cloud Computing can be defined as a *solution to use external IT resources (servers, storage media, applications and services), via Internet*. Cloud computing is nothing more than the promise of an easy accessible technology. If the promise will eventually turn into something certain yet remains to be seen. In our opinion it is too early to make an assertion. In this article, our purpose is to find out what is the Romanian offer of ERP and Accounting software applications in Cloud and / or as services in SaaS version. Thus, we conducted an extensive study whose results we'll present in the following.

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1. Introduction

Although terms like Cloud Computing, Software as a Service (SaaS), Platform as a Service (PaaS) or Infrastructure as a Service (IaaS) have emerged and begun being used only recently, the idea behind these technologies is not new. The founder of the idea of distributing IT applications and technologies as any other public utility (like water, electricity or telephony) is John McCarthy, who first asserted it in 1961, in a speech held during the 100 years celebration of MIT.

Until the end of the 60's, the idea became very popular, also suffering different modifications: On-demand Computing, Automatic Computing, Hosting Equipment and Applications. Yet, all of these failed to rise to the challenge for several reasons: the lack of standard and cheap IT components and the lack of a way to virtualize IT resources (Krzic, 2012).

McCarthy's idea really began to be implemented starting with 2006, with the emergence of the Cloud Computing concept. The term Cloud Computing was used for the first time in August 2006 by Eric Schmidt in correlation with a new business model, which would facilitate the access of customers to hardware and software resources via Internet (Tugui & Gheorghe, 2014).

Although in the almost 10 years of existence of this concept, there were different definitions, made from different perspectives, in specialized literature there is one which is considered to be the broadest and most complete: the one provided by the National Institute of Standards and Technology (NIST) authors P. Mell and T. Grace (2011): "*Cloud computing is a model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction. This cloud model is composed of five essential characteristics, three service models, and four deployment models*".

Now, concerning the modes of acquiring and operating the software applications, the term Cloud Computing is most often used together with the term SaaS (Software as a Service). Although the term „Software as a Service” (SaaS) has been around even before 2000, it wasn't accepted as a concept until Bennett et. all. (2000) published the article titled „Service Based Software. The Future of Flexible Software”. The SaaS acronym became broadly known with the publishing, in 2001, of the article „Strategic Backgrounder: Software as a Service” by the eBusiness Division of the Software & Information Industry Association (SIIA, 2001). The Software as a Service (SaaS) or the „on demand” software is one of the contemporary tendencies to license IT applications. These applications are hosted by service providers on their own servers and they are directly accessed by clients over the Internet. The applications are being accessed by subscription, therefore the need for licenses or investments in hardware equipment being eliminated.

* Faculty of Economics and Business Administration, "Dunarea de Jos" University of Galati, Romania. E-mail address: grizescu@yahoo.com (G. Mihai)

The two terms are frequently being used as synonyms, seemingly describing the same thing. Yet, there are a few differences between them. We synthesized these differences using two main sources: Bratten, C. (2012) and Ringstrom, D. (2012):

- ◆ From a historic perspective, we can state that the SaaS led to the development of Cloud Computing, which, in fact represents the platform on which the SaaS resides, and which also provides other services beside the SaaS;
- ◆ From the perspective of accessing data, with the SaaS all the data resides with service providers and service providers can use the data in any way they consider; inside the Cloud there is much more control of the data: clients can manage the data and software, can make backups and store data in the Cloud and they can move the data out of the cloud environment and into their own local repositories;
- ◆ From the customizing perspective, Cloud Computing provides its clients access to an environment that they can customize or build to suit their own needs (increase server capacity or storage space on demand for example). With SaaS, clients are limited to the features and capabilities written into the software;
- ◆ From a cost perspective, Cloud Computing offers flexibility, meaning client resources and costs can increase or decrease with the demands of the clients. SaaS typically involves a fixed subscription fee per user, per month, so the costs and the functionality being offered tend to be fixed.

To conclude, Cloud Computing is more customizable and therefore more appropriate for large organizations, which have more resources, want to have more control over their resources and which can afford the costs of such an infrastructure, while SaaS provides a one-size-fits-all solution, thus being more appropriate for small companies, which need cheaper solutions. Or, as they say in the presentation document of a known ERP product *"the Cloud infrastructure represents the railroad and the SaaS application the train"* (Pluriva, 2014).

Even if Cloud Accounting is not a stand-alone concept, but more precisely one obtained by extrapolating, it is accepted and used on a large scale both in specialized literature and business environments. As a proof to that, a simple search using Google returns about 455.000 results (the search was performed on the 10th of March 2015). By Cloud Accounting we understand an accounting software product which can be accessed anytime and from any place with an Internet connection, and which does not require previous installation or management or its own servers (Tankersley, 2014; Du & Cong, 2010; Ionescu, Prichici, & Tudoran, 2014). This definition of cloud computing is very similar to the one provided by the Romanian Court of Auditors: *"a style of computing in which IT resources are provided as a service and which allows users to access distributed services based on new technologies via Internet, without the necessity to have the knowledge, expertise or control of the technological infrastructure which supports these services"*.

In this article we proposed ourselves to make a survey of the specialized literature in order to identify the concerns of Romanian authors and review their papers on the adoption of Cloud technologies both for the purpose of managing businesses in general and for accounting in particular. As a personal touch, we also proposed ourselves to perform an analysis on the offer of ERP applications and accounting software applications as services in Cloud.

2. Literature review

Ever since they appeared, the concepts of Cloud Computing and Cloud Accounting have raised a special interest to the researchers working in the field of Accounting and Accounting Management Information Systems in Romania. The papers published in Romania on this matter are both theoretical and empirical and they consist of different approaches and studies.

Since 2010, in our book titled *"Integrated and Collaborative Information Technologies in Accounting"* we emphasized the fact that the use of IT applications for Accounting as a service was an actual tendency towards licensing them (Rizescu, 2010).

In a very broad analysis performed by B.S. Ionescu, C. Prichici and L. Tudoran (2014) on the specialized literature treating Cloud for accounting systems business solutions within Romanian companies, they concluded that Cloud Accounting would eventually change the accounting profession, leading to an important improvement of the way financial activities will be performed, of the interaction with the clients and of the speed and efficiency of the response to their needs. The theoretical aspects of Cloud Computing and its appliances in the field of accountancy (definitions, features, models, types, advantages and disadvantages in general and advantages and disadvantages for accountancy in particular) are approached by papers like: D. Pacurari and D. Nechita (2013), O. Dumitru and M. Matei (2014), A. S. Mihalache (2011). In his article from 2012, A.S. Mihalache approaches, still from a theoretical perspective, the problems posed by adopting and using only IaaS-type services (Infrastructure as a Service) in the accounting IT systems of organizations, as a translation solution towards adopting the SaaS model.

B.S. Ionescu and C. Prichici (2013) analyze the benefits and limitations of Cloud Computing both for small companies and larger organizations, concluding that *"no matter the size and type of organization but especially for SMEs Cloud provides a competitive advantage by providing access to affordable, reliable and flexible IT solutions, which allows them to operate more efficiently among their competitors in the market"*.

In the study performed by A. Tugui and A.M.Gheorghe (2014) on a group of 125 professional accountants, results show that 99% of them have had problems related to availability, consistency and trust with the accounting data in nowadays accounting information systems. In this context, the expectations of over 84% of the professional accountants are going towards the necessity of making services available by providing easy access to the network both from a time and a space perspective, and for a great amount of accounting data. As far as the accessibility of accounting data, problems are tied to the lack of a centralized pool of hardware and software resources (87%) and the lack of resource sharing (79%). The vast majority of professional accountants (91%) is interested in having permanent access to the accounting data from anywhere. Thus, with this study, the authors proved the awareness of Romanian accountants concerning the limitations of on-premise accounting software applications on the one hand and the benefits of Cloud Computing on the other hand. We consider as being of utmost importance the fact that accountants in Romania are willing to adopt such changes.

In the context of the ever growing number of cloud software service providers, the study conducted by B.S. Ionescu, I.M. Ionescu and L.E. Tudoran (2013) aims to identify the perception of some current or potential users of cloud solution, selected from among students enrolled in the accounting master programs organized by the Bucharest University of Economic Studies in terms of their expectations for cloud services, as well as the extent to which the SaaS providers are responsible for the provided service. From the total number of 418 test subjects, 56% asserted that the companies they were working for were already using Cloud services, and 50% of them, working in the financial field, asserted that the service type adopted by their respective companies was SaaS Accounting (Ionescu, Ionescu, & Tudoran, 2013).

The security problem of financial data in a Cloud is addressed by B. Ionescu and Tudoran E. (2013) in their study conducted between November 2012 and March 2013 on the employees of the accounting and development departments of a company that provides IT services in Bucharest. According to their study, 65% of the respondents said that the security of the data in transit is important, 75% of the respondents stated that stored data security is of major importance, 80% of the respondents said they preferred a cloud service provider who had certifications, 80% of the respondents said that compliance with laws and regulations applicable to cloud computing is a criterion in choosing a cloud service provider, 85% of the respondents considered that the existence of a disaster recovery plan is of major importance (Ionescu & Tudoran, 2013). So, the study confirmed that data security and confidentiality is one of the most sensitive problems related to Cloud Computing and one of the main barriers in the way of a large-scale adoption of Cloud Computing technologies and of the SaaS model in general, and in accounting in particular.

In the specialized literature we analysed, we didn't manage to find any paper with relevant data on the actual offer of accounting software products and ERP applications in Cloud or as SaaS-type services. So we decided to do it ourselves and present the results of the research in this article.

3. Research Methodology

To begin analyzing the offer of accounting software products and ERP applications in Cloud or as SaaS-type services, we started with a list of on-premise solution providers, which we identified in some broad studies that we started in 2007 (Rizescu, 2007; Rizescu, 2008) and updated in 2009 (Rizescu, 2010). In these studies, we wanted to determine the offer of ERP and accounting software solutions in Romania. As a way to double-check the solutions identified back then, we checked the web sites of the providers and / or the web sites of the provided software solutions being offered, using the URLs we identified back then. For the no longer valuable URLs, we performed supplementary research using the name of the specific provider or/and that of the software product.

In order to identify new providers and products, which were not identified in the above mentioned studies, or which appeared later in the market, we performed multiple searches using the Google search engine and the following keywords: *ERP SaaS*, *ERP Cloud*, *SaaS accounting software*, *Cloud Accounting software*, *Software in Cloud*, *SaaS Software*. For each of these, we checked the first 100 results returned. For further checking, we also used business portals, accounting portals and online directories of companies.

Our research has the following limitations:

- ◆ Considering that inside the business environment a distinction between the terms Cloud Computing and SaaS is rarely made, in our study we didn't make this difference either, considering both the cloud software applications and the software as a service solutions, without making any distinctions between them;
- ◆ We considered both the solutions developed in Romania and the ones produced elsewhere and adapted for Romania;
- ◆ We started with the prerequisite that any provider and/or any ERP software or accounting software product must have an internet presentation web site;
- ◆ We also considered it was enough to search for web sites using only one search engine, that is to say Google;

- ◆ In this analysis we did not include, as number, the three world-class giants present on the Romanian market, including with business software: SAP, Oracle and Microsoft.

4. Research results

After performing our bibliographic research, we reach at least two clear conclusions:

- ◆ Nowadays, it becomes more and more obvious for everybody that even in Romania, the future in the request and offer of software products will be the adoption of Cloud Computing services. In order to emphasize the conclusion, we also mention the opinion of Eugen Schwab-Chesaru, managing director Eastern Europe for Pierre Audoin Consultants (PAC), who declares that although at the moment the number of projects and income generated by this segment is very low, he forecasts that, beginning with 2016, they will raise up to 5% of the market (Forbes, 2013);
- ◆ There is a much greater opening from the small and medium-sized businesses towards Cloud software applications both in Romania (Ionescu & Prichici, 2013; Ionescu, Prichici, & Tudoran, 2014; Tugui & Gheorghe, 2014; Rizescu, 2010) and in Europe (Craciun, 2014).

In this context, consequently to our research, we observed that the offer of Cloud software products is still very narrow.

From the total number of 51 (100%) ERP products we identified, 17 (33%) are being offered both in Cloud and/or SaaS versions, 11 of them being new products (by new products, we understand the products we weren't able to identify in 2009. We didn't research if they were really new products, emerged after 2009 or were already present then, but were not identified or did not possess presentation websites or any online presence at all), which weren't present back in 2009, when we performed the research. These new products represent a ratio of 65% from the total number of Cloud ERP and 22% of the total number of identified ERP solutions on the Romanian market. It is worth mentioning that 4 (36%) of the new 11 ERP offered in Cloud products are being offered as a Cloud service only. We also mention the great number of new products offered as a Cloud service, 11, compared to only 6 products we identified back in 2009 and which today are offered in Cloud or/and as SaaS services.

If we add to the above mentioned percentages the fact that out of the 31 ERP products we identified in 2009, 8 (26%) are not present in the market anymore, we get a picture of the immature ERP Romanian market. The great number of products appearing and disappearing from the market in such a short period of time (6 years) proves the instability of this market, which also explains why the Romanian ERP market is concentrated around the 5 great providers: SAP, Oracle, Microsoft, TotalSoft and Siveco, which have shared among them, for a very long period, according to PAC annual studies, approximately 60% of the ERP license selling market (no services included). This concentration is easy to explain, as especially big companies prefer mature products, tested over long periods of time, when it comes to choosing a software product, whatever the product may be.

From the two big Romanian producers (TotalSoft and Siveco), which are among the first 5 ERP producers in Romania, together with SAP, Oracle and Microsoft, only TotalSoft offers an SaaS variant for its product named Charisma: Charisma Applications in Cloud. As far the Siveco company, although it mentions in an article published on its website in May 2015, the SIVECO^{Project:Cloud} suite, containing the Siveco Applications 2020 product, it does not have any clear description for it on its website nor a clear offer or procedure to acquire these products in a Cloud or SaaS variant.

Among other ERP products which have been present in the market for several years and with Cloud or SaaS variants, we also think worth mentioning: Senior ERP Online from Senior Software, Socrate Cloud from BitSoftware, Networker ERP from Inovity Software, EMSYS SaaS from ProdInf Software, SAN.SaaS ERP from SanSoftware.

As far accounting software products, back in 2009 we analyzed 60 of them. Now, while performing the research, we identified 73, that is to say 22% more. Out of the 60 identified and analysed products in 2009, 9 (15%) are not present today in the market and 5 (8%) of them are close to the appropriate development stage for an ERP application. We identified 27 new accounting software products, which represent 45% of the 60 we identified in 2009. Something worth mentioning here is that many of these applications do not have any special technologic or functional developments. Out of these, only one is being offered as SaaS. In addition to this, there are another two, which were also present in 2009 in the market: ContabSQL produced and offered by Cometa and CS Conta produced by Centrul de Soft.

So, from the total number of 73 accounting software products only a very small number, just 3 (4%) are being offered as services. This small number is somehow normal, considering the limited technologic capacities and financial capabilities of the majority of the Romanian accounting software producers. For these applications, just like for the ERP applications, there is a great instability of the market, even if the accounting software products which have disappeared from the market are fewer than the ERP applications.

Beside the 3 accounting software products being offered as an SaaS, we can also count the 17 ERP products being offered as services and which also support module subscriptions (including the module for accounting), not only whole application subscriptions.

Although wasn't our intention, we also observed during our research, several other business software products being offered in a SaaS variant. Most of these are used for online invoicing, for HR and Payroll, and for online stores.

5. Conclusions

To use a figure of speech, the general conclusion of our research is one which has been around for years: theory abounds, while practice is almost inexistent. In spite of the numerous debates, scientific studies, business press articles, meetings, conferences and workshops, all treating the subject of Cloud Computing, its presence in the real business environment we researched (ERP applications and accounting software applications) is extremely reduced for a country like Romania, with its development level and size. The offer of Cloud ERP products in the market is also reduced if compared to the demand. As being able to observe in the studies we previously mentioned in the literature review section, at least the small and medium-size business segment is opened towards such technologies, which represent a viable solution to access otherwise very powerful and expensive solutions with a minimum investment, at least in the beginning.

The low offer of on-premise or SaaS ERP applications and accounting management software applications, together with the immaturity of the Romanian market dedicated to these business software products, which is very rich in small, underdeveloped and insufficiently tested new solutions, leads to very difficult decisions when it comes to choose or change such a product, be it on-premise or SaaS. As we previously stated, this explains the concentration of the Romanian market around five big producers: SAP, ORACLE, Microsoft, TotalSoft and Siveco who, together, cover approximately 60% of the market. This proves that companies, especially large ones, would rather choose mature, long-tested solutions, even if these require substantial investments. To this is added the fact that all these big producers have come to meet expectations of small and medium-sized companies with adapted versions of their products, more affordable in terms of complexity and cost. That is why Cloud Computing technologies could represent an extra opportunity for the big producers, once again, more than the smaller ones. The maturity of their products and their long experience in the field are very strong arguments, in addition to the ever growing accessibility the Cloud provides, from the point of view of the necessary investments it takes to acquire such products.

In the years to follow, market consolidation will be a must, in order to shape solid solutions that would attract attention and would build trust of the market in this new way of managing businesses.

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