

## SaaS for SME's - Innovation for a potential market

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### Resumen

Hablar de PYME implica que una gran parte del PIB proviene de estas empresas, a pesar del hecho anterior, las grandes empresas de software no se centran realmente en esta PYME. Este mercado es un foco muy importante de atención para promover nuevos desarrollos, como aplicaciones web que proporcionan un giro para bien a esos negocios y motivarlos a dar un salto al mundo de TI, e incluso más importante para el mundo de la nube. El uso de la nube y particularmente en el caso de SaaS proporcionará el software a las PYMES, en este modelo el soporte y almacenamiento serán gestionados por la empresa que es el proveedor de este servicio. Con este tipo de servicio, las compañías obtienen anualmente menores costos por licencias, por lo que ahorran dinero a medio y largo plazo, evitando costos adicionales en hardware y mantenimiento. Las pequeñas y medianas empresas son todas las empresas que tienen entre 50 y 250 empleados basados en datos de la OCDE. El objetivo principal es que las PYME tengan sus propias aplicaciones disponibles en cualquier momento, y el único requisito para ellas es que tengan acceso a una computadora y una conexión a Internet. En esta investigación se analizan las PYMEs como entidades que requieren nuevas soluciones en software así como sus requerimientos de nube, particularmente el tema de SaaS, y los conceptos de Cloud IaaS, PaaS y SaaS se definirán desde la perspectiva de las PYMES. En este artículo se analizará la importancia de que el mercado de la nube se centre más en las PYMES, que también profundiza en los aspectos financieros de estos negocios de acuerdo con algunas marcas de referencia como el Banco Mundial o el foro económico mundial, no sólo para las economías en desarrollo, También en los desarrollados.

**Nube, PYME, Tecnología de la Información, SaaS, IaaS, PaaS.**

### Abstract

Talking about SME's implies that a big amount of the GDP is coming from these companies, despite the previous fact, the large software enterprises are not really focus on this SME's. This market is a very important focus of attention to promote new developments, like web applications that provide a twist for good to those business and motivate them to take a jump to the IT world, and even more important to the cloud world. The use of cloud and particularly in the case of SaaS will provide the software to the SME's, in this model the support and storage will be managed by the company who is the provider of this service. With this kind of service, the companies obtain lower costs on licences yearly, so they save money in medium and long term, avoiding extra costs in hardware and maintenance. Small and medium enterprises are all companies that have between 50 and 250 employees based in OECD data. The main objective is that the SME's have their own apps available at any time, and the only requirement for them is that they have access to a computer and an internet connection. In this investigation the SME's are analyzed as entities that require new solutions in software as well as their cloud requirements, particularly the subject of SaaS, and the concepts of Cloud IaaS, PaaS and SaaS will be defined from the SME's perspective. The importance of having the cloud market more focused on SME's will be reviewed in this article, that also delves into the financial aspects of these business according to some marks of reference like the world bank or the world economic forum, not only for developing economies but also in developed ones.

**Cloud, SME, Information Technology, SaaS, IaaS, PaaS.**

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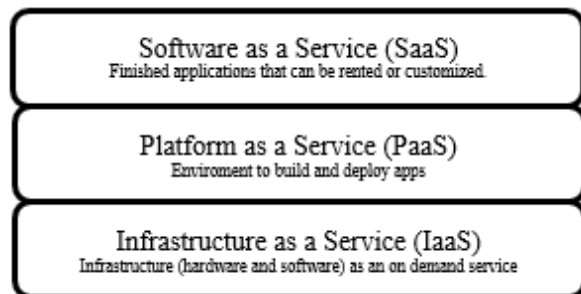
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**Introduction**

Over recent years, Information Technology (IT) have developed a fundamental for the growth of organizations and companies in all sectors and sizes paper. Reducing cost, time, labor, increased productivity are just some of the benefits they provide. In this article the subject will focus primarily on the economic impact that Cloud generates on businesses.

What SME's (small and médium enterprise) have not come to realiced is that cloud technologies can be a huge asset on their businesses increasing their productivity exponencialy. It is a fact that this enterprises have survived all this way without any kind of tech, but the time has come to evolve and adopt new alternatives in order to make the business grow.

Cloud providers deliver computing services to cloud users through three main forms: Infrastructure as a Service (IaaS), Platform as a Service (PaaS) and Software as a Service (SaaS) (Brender & Markov 2013).



**Figura 1** Source Alejandra Perez-Dorantes. Structure of cloud (as a service) offered now a days.

IaaS can be defined by the capability provided to the consumer to provision processing, storage, networks, and other fundamental computing resources where the consumer is able to deploy and run arbitrary software, which can include operating systems and applications. (Nicolae, B. 2016).

The main objective of IaaS is to provision in a proactive way to the customer, so they can call on demand for the services via web portal in the case of some providers like VMware, an example of this services can be virtual desktops or storage.

In PaaS the objective is to provide advanced tools for computing and processing large amounts of data , and to exploit current storage and preservation technologies, with the appropriate mechanisms to ensure security and privacy. (Paraiso, F., 2016)

In the case of SaaS, this service offers adopting companies potential benefits including computing cost reduction, better system scalability, and mobility which are especially relevant to small and medium enterprises. (Seethamraju, 2015). Later on in this investigation the benefits will be reviewed with more detail.

According to BSA Global Cloud Computing Scorecard, Cloud computing democratizes the use of advanced technologies. Cloud computing allows anyone — a startup, an individual consumer, a government or a small business — to access technology previously available only to large organizations. (BSA Global Cloud Computing Scorecard 2016)

Altough cloud technologies may seem to take more force in the IT market throughout the recent years, it has also become a big challenge regarding the cybersecurity, and while many countries are focused on data protection and cybercrime, few are promoting policies of free trade or harmonization of cloud computing policies. (BSA Global Cloud Computing Scorecard 2016)

Despite the previous fact, most countries now have data protection frameworks in place. For example, Canada scored highest based on its comprehensive privacy regime that avoids onerous registration requirements. (BSA Global Cloud Computing Scorecard 2016).

The article will be developed in sections as follows:

Section 1: What is Cloud computing? And clasification.

Section 2: Cloud for SME's

Section 3: Advantages of relay on technologies like cloud SaaS.

Section 4: Conclusions of the paper.

### Cloud computing

Depending on the technical point of view, this concept can have diferent meanings, for example for IaaS this term is associated to the virtualization of the Infrastructure, which allows you to have several applications per element.

In the case of PaaS, this kind of Service is usually based on IaaS, this means that IaaS and PaaS are naturally complementary, causing IaaS providers to expand into PaaS and vice versa. (Anderson, E., 2016). With this integration the users are allowed to customize diferent systems and applications in the Infrastructure in an unified enviroment. It also permits the providers to give multiple choices as an intregation of both (PaaS and IaaS).

As a cloud service model, SaaS is generally recognized for its ability to deliver application capabilities as a cloud service and is regarded as a preferred model for consuming application capabilities in certain business areas by most organizations. (Anderson, E., 2016) The reason of this thought might be that SaaS improves the efficiency of the technical personel in the enterprises, and may become a very is important asset for the SME's who doesn't have the enough resouces to invest in their own infrestructure.

Through this service delivery model end users consume the software application services directly over. (Kumar,V., 2016). An example of this kind of service is e-mail, where the service is provided by IT companies like yahoo, google or Microsoft and the SaaS is the application where we everyone access to the data like Outlook.

Basically, cloud computing is a type of computing that is based on an internet application, and in works as a share point to other sources, its functions come from processing data for other sources or give any kind of application on demand, up to provide infrastructure to a company based on its necessities.

### Cloud for SME's.

SMEs are very important in the economy principally in developing countries, like LatinAmerican coutries. According to the World Bank "Formal SMEs contribute up to 45 percent of total employment and up to 33 percent of national income (GDP) in emerging economies" (World Bank, 2015), therefore they are the mainstay for these nations, and if the informal companies would have be counted into this number, this census would be rising significantly.

Small and medium-sized businesses, often owned by a single person or a small team of entrepreneurs, are a driving force in job creation and local economic development (World Economic Forum, 2015).

In emerging markets, most formal jobs are with SMEs, which also create 4 out of 5 new positions (World Bank, 2015).

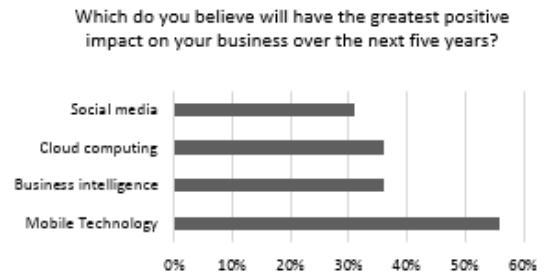
A World Bank Group study suggests there are between 365-445 million micro, small and medium enterprises (MSMEs) in emerging markets: 25-30 million are formal SMEs; 55-70 million are formal micro enterprises; and 285-345 million are informal enterprises. (World Bank, 2015).

With this data, it is imminent that there is a major market for IT companies in this sector, where even the micro business can be included as a target. According to the Association for Enterprise Opportunity (AEO), there are over 23 million microenterprises in the U.S and that number translates to 87% of all businesses in the United States. (Kamal, M., 2015).

SME's are not only big in numbers inside developing countries but also they are very important in economies like North America or Europe. Despite this, there are a lot of challenges to face regarding this matter, for example the downs in the economies in countries like Brazil or Mexico where this kind of business are the major income to their GDP's.

In order to mitigate this situation, the tendency is for the SME's to migrate to other technologies that allow their business to interact with the users in different ways.

In the survey "Which do you believe will have the greatest positive impact on your business over the next five years?" the respondents of a global report, Digital Megatrends 2015, from Oxford Economics gave the following answers.



**Figura 2** Survey by Digital Megatrends which do you believe will have the greatest positive impact on your business over the next five years?" World Bank 2014.

CIO's of the SME's must focus on the Cloud option to encourage the business to improve and have more advantages over their competitors.

### **Advantages of rely on technologies like cloud SaaS.**

In the SaaS model, most if not all the system ownerships and controls of the IT systems are transferred to the cloud provider. (Thao Phuong, T., 2015). The previous fact can trigger some concerns regarding the information security of the company.

The success of cloud computing depends on users faith that their information will not be used or disclosed in unexpected ways. At the same time, to maximize the benefit of the cloud, providers must be free to move data through the cloud in the most efficient way. (BSA Global Cloud Computing Scorecard 2016).

Although there might be security flaws in the systems, the providers of services like SaaS are ensuring as much as possible that this does not become a factor for SME's to not invest in software for their companies. For example google has a "Secure Data Connector" that creates an encrypted connection between google business app's and the customer data, allowing the customer to manage the company personnel to access to only some apps for example.

There are challenges when talking about data flow around the world and the security in it, but users must be assured that cloud computing providers understand and properly manage the risks inherent in storing and running applications in the cloud. Cloud providers must be able to implement cutting-edge cybersecurity solutions without being required to use specific technologies. (BSA Global Cloud Computing Scorecard 2016).

When a company implements cloud, there are several benefits, starting from the point that they are entering to a new era in their business.

### **Cost reduction**

Most AEC companies are SMEs with small employees and little budget, these features are a crucial barrier of IT adoption in the AEC industry. (Silverio, M., 2016).

Now a days many companies invest in IT services that may cost a lot more than the value that they are obtaining. That's why the model of cloud is so attractive when it comes to cost reduction. In the case of SaaS for small and medium enterprises, they pay only for what they need as a subscription to the providers, saving time and resources.

Also they are not investing in local infrastructure like storage or servers.

### **Scalability and Integration**

The ability to grow without buying new servers or software, only add more services based in the infrastructure that the company has. This also applies when an upgrade is needed, the provider will cover it and it is included in the subscription.

Any SaaS application can be easily integrated with other related systems.

### **Easy to use**

Basically SaaS is an application that can be accessed via web through any device connected to internet, and is managed from any location. This means that it is flexible and has a mobility that no other cloud product can offer.

Cloud employs both the storage services and application processing services of computational clouds to enable off-device storage and compute-intensive applications on mobile devices (Ahmeda E., 2015).

Additionally the software is easy to install and doesn't require much knowledge or specific skill to deploy it.

Also, most data backup is offered by cloud providers to release business users from managing this complex and costly operation. (Thao Phuong, T., 2015).

### **Conclusion**

From this article we can conclude that SMEs are a necessary pillar in the economy of the countries worldwide, and also that there is a huge market for Cloud SaaS to be explored in the following years.

In the paper is strongly suggested that the companies with small IT infrastructure such as SMEs acquire cloud services, not only SaaS but also IaaS and PaaS if necessary.

Another important point is the benefits that this technologies bring to the companies, saving costs and increasing the cover of the products or services that they offer to their customers.

The market can be caught by the benefits that cloud can offer, this may take a few years to be achieved, but eventually all business will have to switch to Information technologies that help their small, médium or micro enterprises.

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