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ECOMMERCE ON THE CLOUD

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Abstract

Much has been said about cloud computing, about SaaS or software as a service, about the advantages and disadvantages of the cloud, but can it also be applied to electronic commerce?

This article aims to review the concepts, the types of clouds that exist and look closely and objectively at the advantages and disadvantages of cloud computing for the e-Commerce sector.

Clarifying concepts

The cloud concept is very simple and at the same time revolutionary. Why store the company data on our servers and download programs when we can have them online and not worry about storage capacity or security problems, and access the information from anywhere, at any time? That is what cloud computing is all about.

[Victor Pimentel](#), computer engineer, web developer and blogger defines the cloud as web 2.0 SP1, because to him it is just the Internet and the possibilities it allows. "It represents the transition from the traditional model of applications towards the new Internet model based on services (and not applications)", he says in [one of his posts for Anexom.es](#).

[Telefónica](#) also defines the cloud as a synonym for the Internet. "When we say that an application resides on the cloud, what we are saying is that it is hosted on a server connected to the Internet, but since we don't know exactly where that server is, we refer to it in an abstract way as being in the cloud."

There are three services based on the cloud computing concept: SaaS, PaaS and IaaS. SaaS is software as a service; applications that, instead of being downloaded onto a specific PC and installed there (with the associated license cost), it is paid for as it is used. "They are accessed on the Internet, with a browser, or with a client application installed locally on the PC, and the application logic, as well as the data, are on the Internet," say sources at Telefónica.

PaaS, or Platform as a Service, are services that offer APIs, applications and platforms for the development of e-commerce environments. They are designed for transactional environments in which data can always be extracted and imported.

Finally, IaaS, or Infrastructure as a Service, implies a great deal of scalability depending on needs, to adapt to periods of greater or lesser demand, and it is a more complex solution than SaaS.

Being on the cloud

Telefónica says that one of the main advantages of the cloud computing services are the speed of implementation, since the client can access most of the services through a website within minutes. By way of example, they mention the Visual Data Center service, which enables the client to build a complete data center (servers, network infrastructure, firewalls, load balancing, storage, operating systems, configuration and backup policies) with a simple self-supplied portal using the mouse in a matter of minutes. "In a traditional model, the client would have to enable physical space for the machines, in a proper, secure environment, buy the equipment, install it, wire it and configure it, which could take months," said sources at the telecommunications multinational.

The corporate director of R&D and Product and Service Strategy at [Sage España](#), David Millet, says that the speed of implementation accelerates, in turn, the return on investment, which is why "the SME environment will be the most receptive to this new model, which could also be implemented in stages, in packets that offer web and cloud together".

[Electronic commerce](#) can also be conducted through cloud solutions and benefit from the advantages offered by these services. Álvaro Montero, commercial manager at [Ran Networks](#), says that cloud computing is a low-cost alternative for SMEs for investment in information technology, while at the same time resolving problems associated with service availability from anywhere or adapting to seasonal market variations (sales, Christmas, etc.).

Another one of the points in its favor is that it is possible to begin using the service and paying by need initially, increasing or decreasing over time based on how it is used and paying for only the resources used. That is why it favors a reduction in costs compared to other solutions.

Standardization of the service and process automation, with tools in the hands of the clients, are other benefits listed by Montero.

Costs are variable, depending on each company needs. According to Amazon, cloud computing allows companies to reduce or eliminate costs on hardware acquisitions, security systems, energy, establishment and maintenance of redundancy, overcharge for more capacity that needed, less personal needed and opportunity cost.

Keep in mind

However, there are also other factors to be kept in mind before diving in to avoid surprises. "Companies must pay attention to the service level agreements (SLAs) through which the service provider guarantees greater or lesser levels of availability (known as uptime), based on the need of the client", the sources at Telefónica recommend.

Electronic Commerce Consultant, [demartina.com](#) CEO and [Spanish Association of e-Commerce Experts](#) Chairman Juan Macias says that it is important to keep in mind that even if the uptime is 99% for a service, implying a failure of just a couple hours one or two days a year, "the probabilities for failure increase the more we use a service".

In his post "[Do you use the cloud or do you depend on the cloud?](#)", Macias also says that it is necessary to quantify losses when service is unavailable, the cost of lost opportunity and,

in the case of complementary services, such as recommendation services and social media tools, opt for the services that, when unavailable, do not interrupt the use of the page.

Telefónica also indicates that the supplier must offer reports and transparency on service operations so that the companies can verify that the service meets the quality requirements they need.

In line with the point above is the need to ensure that the service providers cannot use the data that we supply to them and the processing they will be subjected to. The Spanish Association of e-Commerce Experts Chairman says that “most of the SaaS services do not include the export/import option, while in the USA, where there is more competition, changing services on the cloud is more normal”. Telefónica says that the problem is technological, since there are no common communication interfaces between the different cloud service providers. “In other words, no agreement has been reached among the different providers to use a common communication language so that the data downloaded from one can be loaded directly into another. Advances are being made in some services, such as Telefónica's Terabox service, which will soon enable massive data imports, but that is still an unresolved issue”, say sources from the company.

It is also recommendable to find out where the services that are providing the services are located physically, since any legal problem must be resolved in accordance with the laws of the country in which they are located. Juan Macias recommends services located in Spain or the United Kingdom, since the legislations are similar and there is good connection speed, while “they are very restrictive in France and they can cut off access because of the slightest problem”.

Private, public or hybrid cloud?

The [American National Institute of Standards and Technology \(NIST\)](#) offers a simple definition of the different types of cloud computing. On the one hand there is the public cloud, where the services are available for external service providers through the Internet. On the private cloud, however, the data and processes are managed within the organization, so they are not affected by the security risks, bandwidth or legal restrictions that appear on the public cloud. There is also the community cloud for organizations that work together, sharing access to data and applications on the cloud. Finally, there is the hybrid cloud, which is a mix of both public and private interacting together.

When is it recommendable to use each one of them? Public clouds are useful if the data to be given out are not sensitive data, since they are less expensive, but there is a greater risk of information leaks.

Telefónica says that it may be necessary to use private clouds when the client already has purchased infrastructure that is providing adequate service or has to interconnect old systems that cannot be virtualized. “In those cases, virtualization (private cloud) makes it possible to optimize usage of the infrastructure compared to a non-virtualized model, although the same cost savings and same flexibility offered by paying for the use of the public cloud are not obtained”.

Hybrid clouds make sense when there is a need to grow. The client can use their private cloud and, once new equipment has been purchased for growth, use the public cloud for capacity peaks. As mentioned by sources from the company César Alierta, in this case “it is important to have a hybrid management model so that the client uses a single management portal and can use it to manage both the private and public cloud”.

The Public Administrations are getting involved

The Public Administrations are aware of the importance and interest of cloud computing, and they are taking actions to support it. "Club Computing" was recently created in Seville, Spain, as a pioneering center that aims to help SMEs and entrepreneurs to adopt this technology.

This center has received an investment of €2 million from the Ministry of Industry, through Red.es, with the financing of the European Regional Development Funds (ERDF), and it will be managed by the Information and Communication Technology Business Association of Andalusia (ETICOM).

This project also includes the "Clouding Point", managed by [Microsoft](#) and [Vodafone](#) which have acted as collaboration partners with an investment of €1.8 million for the coming three years and will offer advice to over 2,500 professionals in services on the cloud, both groups that want to begin using this working method and the creators of applications in this field.

Not only the Public Administrations, but also the Associations have been quick to understand the importance of the sector and the need to instruct companies on the legal regulations. The [Spanish Association of Entertainment Law \(DENAE\)](#) organized the "DENAE Forum – Cloud Computing" in October 2010 to examine all of the legal ramifications of cloud computing, as well as to provide a proper response.

Europe has created the [European Cloud Computing Association \(Eurocloud\)](#), which includes 27 countries, including Spain, to spread and standardize the use of cloud computing and to create a Pan-European knowledge network.

The future on the cloud

Up to now, mostly large companies have gone out onto the cloud, but gradually the SMEs are getting over their fear and enjoying the same benefits.

Gartner believes that during the coming five years, companies around the world will spend \$112 billion total between software as a service (SaaS), platform as a service (PaaS) and infrastructure as a service (IaaS) projects.

In Spain, the estimates made by Sage point to 2012 being the key year for the launch of the Cloud in Spain, focusing especially in the Software as a Service (SaaS) model.

For that year, 18% of all Spanish companies will be using it, and it will be a launch accompanied by other tools, such as Platforms as a Service (PaaS) and Infrastructure as a Service (IaaS). "The every increasing transfer of corporate functionalities to the mobile environment will, at the same time, promote applications for the Mobile Cloud, which will become an essential tool", says David Millet.

The estimates, then, are very positive and it seems that cloud computing will reach an increasing number of companies in very little time, which will take e-commerce onto the cloud.