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The Impact of Cloud-Based Technology on Business Digitalization

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Abstract

The paper aims to provide a comprehensive analysis of the impact of the Cloud-Based technology and the way it impacts digitalization of businesses. With the continuous development of technology, businesses first started creating an online presence, hosting their websites on on-premises servers. However, this was costly as it would imply that each company should have to acquire their own equipment, provide maintained for it often go outside their purpose to be able to reach people. In addition, there were security risks implied, the downtime is often a problem. In our today's society, with the progress of technology, there are more and more opportunities for companies to easily offer their services on the web with the use of the available cloud platforms. A comparison is made for explaining how cloud services help reduce the amount of work needed to achieve one's final goal, and whether it is or not profitable.

Keywords: IoT, Digitalization, Cloud, Servers, Business

Introduction

With the continuous development of technology, businesses first started creating an online presence, hosting their websites on on-premises servers. However, this was costly as it would imply that each company should have to acquire their own equipment, provide maintained for it often go outside their purpose to be able to reach people. In addition, there were security risks implied, the downtime is often a problem. Going to the root of the problem, we will discover that this paradigm fails because everybody is making an individual effort to achieve something big at a company scale, but not big enough for the web scale. On the contrary, the problem would be solved by having a system of a larger scale, that could be shared by everyone while also accounting for security and privacy, something that could be the result of joint effort aiming for a higher quality product. Soon the concept of cloud would emerge and evolve to the way it is now. In today's society, with the progress of technology, there are more and more opportunities for companies to easily offer their services on the web with the use of the available cloud platforms. A comparison is made for explaining how cloud services help reduce the amount of work needed to achieve one's final goal, and whether it is or not profitable.

Technical analysis of cloud technology

"Cloud is just someone else's computer," says the internet. To better understand how the cloud works, figure 1 explains the 4 different levels of the services provided. on-Premises server, meaning an in-house type, and three different levels of cloud management, customizable for the need of the users.

On-premises servers are simply put any machine that the business owner acquires and uses to provide a website/web application to its audience present on the internet. This requires the owner to be able to maintain the machine, in conditions optimal for running. The advantages of this model are that it provides for a great privacy solution since all the data will be held on your side.
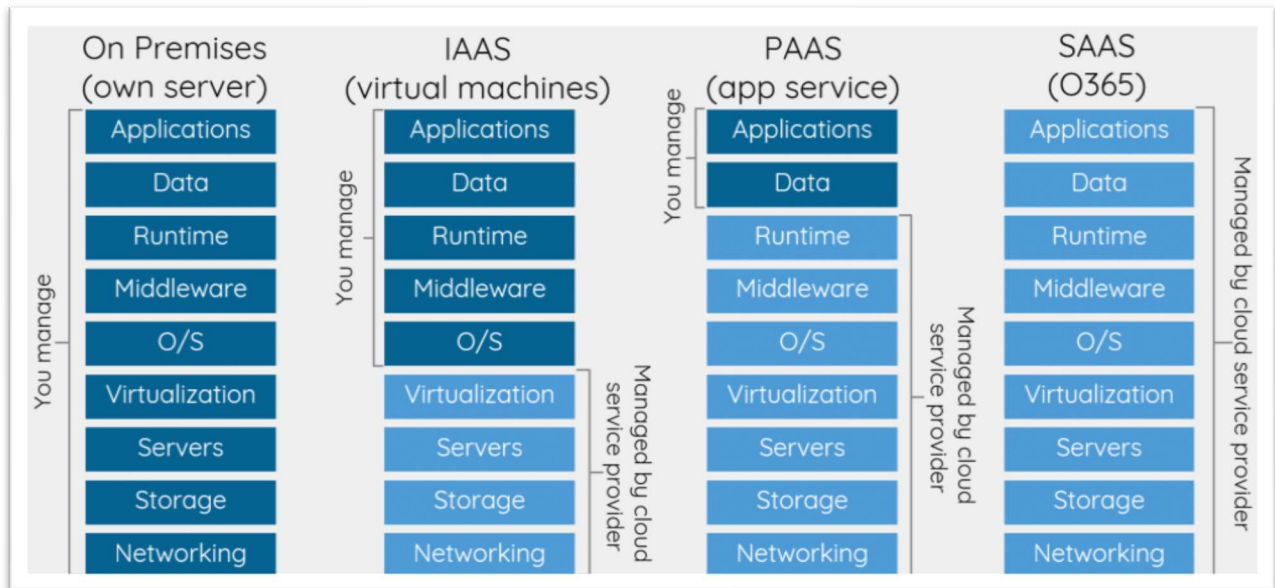
Figure 1. Cloud services

(Source: (Watts & Raza, 2019))

However, there are major problems that require attention to both hardware and software. Hardware wise, it is important to know that in order to provide a service with minimum downtime, it is mandatory to take into consideration inconveniences such as power surges, natural disasters (floods, fires, earthquakes, etc.), that neglected will lead to a serious negative impact on the business's image. Furthermore, if working with sensitive data, the server owner needs to be able to provide a secured environment for storing it, while still allowing authorized access to process the information. In addition to this, the owner also needs to manage himself, compatibility issues, any required software, starting from windows level, and ending with an application level.

Stepping into the cloud world, we have three different levels of management: IAAS, PAAS, SAAS.

Infrastructure as a Service | IaaS

Infrastructure as a service is the layer of cloud that's most near to the on premises. The differences are made by the fact that one does not own a physical server anymore but pays the cloud provider to take care of the maintenance and in exchange receiving access to a server or more depending on the needs. With this strategy in place, the business owner does no longer have to worry about the hardware aspects of creating an online presence and can focus on the application he is trying to deliver. Usually, this layer is chosen by business that requires a custom OS[6] for their solution and have a complex set of services/application.

Platform as a Service | PaaS

Platform as a service is one layer above IaaS. This means that in addition to the physical aspect, the OS drivers and other important software aspects are also managed by the cloud provider. (Repetition) In other words, the business owner wants to be able to have a place to deploy an application without having to worry about its dependencies, operating system and anything outside their purpose. This layer is the most popular among business that seeks to digitalize their activity and/or create an online presence as it provides the support needed to go online, without the hassle of owning or configuring a server.

Software as a Service | SaaS

The final layer of the cloud paradigm is Software as a service which is any of the previously mentioned scenarios seen from a client's perspective. Software as a service refers to consuming a web service readily available for us to accomplish our purpose. A common example of this is the platform Office 365, that provides an online version of the Microsoft Office Suite.

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[6] OS -Operating system

Main cloud providers

The main competitors on the market as a matter of now are Azure, the cloud service offered by Microsoft, AWS – Amazon web services and Google cloud.

From a business perspective, there are several limitations when using cloud-based systems, for example storing sensitive clients outside a country's borders is illegal, and concerns related to data privacy.

Conclusions

Cloud services nowadays are a game-changing technology as far as digitalization is concerned. The power of it lies in the fact that it frees the business owner of the need to have and maintain his own system, but rather provides a readily available scaffolding for building the application, website or any other form of an online presence.

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