IT Technologies

Clouds, services, servers

What does it do? (600 words) What is the state of the art of this new technology? What can be done now? What is likely to be able to do be done soon (say in the next 3 years)? What technological or other developments make this possible?

Cloud technology is a combined set of servers which are networked together to either store data, run/execute applications, or use the web browser as the interface to run applications. In many ways we have being using cloud computing without having realised this, applications like Gmail, Outlook (online), Facebook, OneDrive, DropBox, Netflix, Amazon Prime and other streaming services. The network that runs the cloud is the internet.

Cloud technology can be broken down into 3 categories. Infrastructure as a Service (IaaS), Platform as a Service (PaaS) and Software as a Service (SaaS).

IaaS is where the entire infrastructure is hosted on the cloud, this where the hardware, compute, memory storage is held on servers and networks outside of business premises. The organisation/ business doesn’t bear the cost or responsibility of housing the physical infrastructure. It connects to servers (on the cloud) and runs its workload (Oracle 2022).

PaaS – can be confused and often mixed up with SaaS (software as a service) however the differences are based on the applications and type of complicated work/tasks required to perform. With PaaS this is mostly related to software development, testing and deployment. Commonly platforms are Google cloud, Microsoft Azure, AWS (Amazon Web Services), IBM Cloud. These offer the ability to develop in the most common programming languages Ruby, Python, Java, Scala, Clojure, Node.js, PHP, .NET, Ruby, Go and Docker. (Oracle 2022).

SaaS – is an application run via the cloud without the need for installing the software on your location machine. These includes Customer Relationship Management, Enterprise Resource Planning, Accounting, Project Management, Human Resources and Payment gateways as examples of SaaS. (Oracle 2022).

Cloud computing is also broken down to three types, public, private and hybrid.

Public – this where the computing infrastructure is hosted at the location of the cloud provided and services are delivered via the internet. Customers pay for all the physical and computing power and don’t bear the cost of running their own infrastructure. (Oracle 2022).

Private- this used exclusively by enterprise organisations and businesses. This is dedicated to the organisation. The resources requested and paid by organisation or business is only dedicated to them, this includes the compute, data storage and run time and not shared by other organisations. This designed to fit the organisational which require high security, high levels of internal compliance with local and national laws. These are usually for organisations that have the capacity to fund high budget technologies (Oracle 2022).

Hybrid – This is a combination of public cloud and private, where organizations and business house data, applications and compute on the private cloud and allow the public cloud to host second tier applications or data (Oracle 2022).

The future of cloud computing will only likely grow from a market size of 429.5 USD in 2021 to 1025.7 USD in 2028 covering the major regions of North America, Europe, Asia Pacific, Latin America, and the Middle East & Africa (Fact & Factors 2022). The global market is mostly driven by new technologies big data, artificial intelligence, and machine learning. SaaS generated the biggest revenue, compared to IaaS and PaaS (Fact & Factors 2022).

The prime motivation to move cloud is the ever-increasing amount of data being generated, business and organisations desire to be customer centric with a focus on customer satisfaction (Fact & Factors 2022). Key issues are also driving business being protecting sensitive data, disaster recovery and compiling with local and national laws and regulation (Fact & Factors 2022).

The key regions for growth will be South East Asia, with China and India. India has very strong investments in industrial and IT industries which has created a strong cloud computing sector (Fact & Factors 2022).

What is the likely impact? (300 words) What is the potential impact of this development? What is likely to change? Which people will be most affected and how? Will this create, replace, or make redundant any current jobs or technologies?

The impact would for organisations to require more IT professionals to manage the cloud services. It will also require the upskilling of current staff to operate the applications and services by cloud providers. Routine tasks may become automated, and administration may become obsolete. This would require staff to be retrained or deployed elsewhere (Zdnet 2021).

The requirement will also be for advanced skilled IT professionals who are trained in cloud technologies will increase with the ability to migrated from a physical on-premises to a cloud-based location (Zdnet 2021). The issue that organisations face is that do not have the right suitable pool of qualified talent to fulfill this requirement of running cloud services, this is already on top of companies struggling to find IT professionals who other tasks.

As per Govekar "I was talking to another organization recently who said, 'The moment I upskill and train my person in AWS and Google or Azure, or anything else, they are [offered] more somewhere else -- I am literally training them up for someone to grab” (Zdnet 2021).

The impact for me personally would be along the lines of slowly moving from a desktop PC which houses a lot of hardware, graphics card, a very CPU (intel i-7-8700k) RAM, and data storage to a much smaller device. This could be a NUC (next unit of computing) and is considered a bare bones PC, it houses the usual hardware, but not a high-end scale set-up. I could then potentially run all my applications from a cloud service. This cloud service could compute and run applications, games, and professional programs. I would need to have strong security, a good payment gateway to use the benefits without having to upgrade or manage my files when moving to a new PC or laptop at home.

For professionals programs like data visualisations tools this would be very beneficial as the heavy computing can be done on the cloud without the danger of crashing the system if running a large file.

This could change the way gaming is now delivered as enthusiasts have always loved purchasing and build PC’s. This may now allow a new type of gamer to be involved without the need for a high-end PC build. Medium or high-end gaming could be delivered on the cloud.

My Mum would be able to run programs via a subscription model without having the need for downloading software. She is a very traditional user who has always been used either a CD copy or now downloading a program and installing this. All files and documents can easily be stored on the cloud. However, there is the danger of bad use of the internet or security password usage allowing hackers and ransomware to installed on her system. Mostly a change in her thinking around password and website usage would be required and how to operate home based 2FA services.

Reference List:

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