IT Technologies
Cloud, services, servers

What does it do?

The current state of Cloud Services show that enterprises are continuing to embrace cloud strategies and move away from traditional on-premises services, "citing the higher-than-expected cloud usage was attributed to the COVID-19 pandemic restrictions throughout 2020" (Luxner 2022), which saw a large global shift towards remote working. Cloud-based services were a critical part of ensuring businesses were able to quickly adapt to the changing work environment on a global level. The current state of the technology provides reliable and secure access to IT resources over the internet. Some examples of this are Email Services, File Storage and Sharing, ERP systems, CRM systems, Project Management systems, Messaging and Communication services. Many of these services are also easily accessible from a smartphone device. From a consumer perspective, Cloud Services are continuing to seamlessly intertwine with our daily lives such as social media, Messaging and Communication services, Audio and Video streaming services.

In the next 3 years, we are likely to see continued adoption of cloud services in our professional and personal lives and impact it to the point where it becomes almost a necessity in our daily lives. There are two key areas of development in the next few years, firstly to extend the reach of Cloud Services to a wider population with improved Internet access, and secondly with advancements in Edge Computing we will see scalability to meet growing demands of new technology and applications on the Cloud, particularly in the field of IoT (Internet of Things).

Cloud Services will become more accessible with advancements in Internet Access to a larger global population. Traditional cable internet connections require a trunk of underground network cables, meaning many larger rural areas and low-income nations don't have access to cost effective high-speed internet which is required for access to many of the Cloud services. It is currently estimated that half of the world's population does not have access to the Internet. With developments in low earth orbit satellites aiming to provide Internet access through projects such as Starlink, we will see Internet access become more readily available to even the most remote locations and deliver Cloud Service solutions to a wider population.

Advancements in the Internet of Things (IoT) field will see newer technologies developed directly into Cloud Services. The continued development of more IoT applications and services will become vital for our everyday lives. According to Innovecs "The total number of IoT connected devices over the globe is predicted to be more than 75 billion by 2025." (The Future of Cloud Computing: Benefits and Trends, 2022). As IoT devices become more advanced and increasingly relied upon, this places a higher burden on bandwidth, performance and latency expectations on the Cloud Services these devices connect to. This is driving the concept of Edge Computing.

Developments in Edge Computing will bring information processing and data storage closer to the source of the data (IoT devices) will help alleviate performance issues. Edge Computing brings "applications closer to data sources such as IoT devices or local servers. This proximity to data at its source can deliver strong business benefits: faster insights, improved response times and better bandwidth availability." (What Is Edge Computing, 2022). An example use case for Edge Computing would be in self-driving cars, where real-time data processing is critical. If the car had to send data to the cloud to be processed and wait for a response to be received, it would be far too slow to prevent

many fatal accidents. Edge Computing will process and maintain time-critical data directly in the car with little or no network latency, providing fast enough responses to prevent many accidents. The Edge Computing device will then only send and receive non time-critical data to the cloud, this leads to a reduction in the amount of data travelling over the network and reduced cloud storage, which in turn, increases data security and lowers the cost of bandwidth.

What is the likely impact?

There is likely to be a substantial economic impact with improvements in Internet access to remote regions and low-income nations. It will provide this population with the ability to access cloud services that many of us currently take for granted and use on a daily basis such as online banking, e-learning, government, and healthcare services. These regions would also have the opportunity to earn an income by offering products or services online, or simply getting access to education through online resources to increase their chances of attaining future employment. With an online presence, this could lead to new jobs in previously offline regions as it provides these regions with the ability to create new online business or expand existing businesses with an online presence. While I don't believe this will make any current technologies redundant, it will increase the level of competition with current Internet Service Providers which should lead to a reduction in the cost of Internet access and further increase the level of accessibility.

Edge Computing will allow the rapid development of IoT devices to continue, particularly devices that have a critical requirement on extremely low to no network latency. We are likely to see more IoT devices seamlessly intertwined within all of our daily lives. With the Edge Computing market "growing rapidly at a CAGR of over 30 percent and is expected to reach almost USD 7 billion within the next five years." (Edge Computing: The Next Big Thing, 2018), this will inevitably create new jobs. As we continue to see more IoT devices developed this is likely to create new jobs as there will be an increased demand for technically skilled individuals. On the contrary if existing industries or manufacturers don't begin exploring adding smart functionality in their products or services, they run the risk of being replaced or made redundant if an equivalent IoT enabled device or service becomes available.

How will this affect you?

As we continue to see more applications and services created or move to the Cloud and more enterprises and businesses embrace Cloud Services for their operational activities, it opens up the option of a remote workforce. This will increase the reliance on a reliable and fast Internet connection as we will undoubtedly see increases in data traffic. While I don't see the improvements in Internet access via low earth orbit satellites affecting my daily life, nor the daily lives of my family and friends, I do however see some of the potentials that it does open up. Such as the opportunity to continue my current employment in a remote location and stay connected with family and friends through online services such as social media and online communication tools. Locations that were previously not accessible through traditional broadband infrastructure.

As new IoT devices continue to be developed with the support of Edge Computing, it will start to affect all of our daily lives as we become more connected and reliant on these smart devices. One area where I see this already affecting my day-to-day life is with Smart Home type devices, currently with voice assistants, smart doorbells, smart cameras and smart lights, I am already starting to see times when bandwidth and network latency are an issue with delays in notifications for doorbells and cameras. As the list of devices continues to grow with additional IoT devices, it is likely to raise

more performance issues. Integrating Edge Computing with more IoT devices will be critical in ensuring our smart devices continue to work in a seamless manner.

References

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