

IT Technologies (Clouds, services, servers)

What does it do? (600 words)

Cloud services refers to the sharing of resources, software and information via a network; namely, the internet. The nodes which share the resources, software and information are known as servers. Examples of current cloud technology is iCloud - which is Apple's implementation of a information/data sharing solution between devices, Google's Gmail - a solution created to allow access to people's emails, attachments and such hosted by Google servers over the internet, and also Google's Drive - also a cloud-based file sharing and storage solution built to allow users to store, read and write these files hosted on Google servers over the internet. Cloud services, services themselves and servers are all huge elements that make up the backend side of any site or complex function on the Internet. It is in this way that they are all very important. Without these technologies, we could all still have access to the internet, but we would still be so much less "connected". These technologies are the foundation and the basis for real connectivity and functionality over the internet.

Modern uses of Cloud, services and server technology is foundationally and basically as it was when it was introduced. These technologies are still used to connect a series of nodes over the internet for the purpose of the sharing of resources, software and/or information. The modern implementation of these has changed in the efficiency and the effectiveness. It has also changed because these technologies now have a significantly greater scope in terms of reach, and user base.

In 3 years, I believe the amount of use, efficiency and effectiveness will continue to grow at a high rate until almost everyone on the planet has sufficient access to the internet to be able to use these services. In 3 years, I believe that clouds, services and servers will be able to connect every single person on the planet with any possible data, resource and information they need, within the bounds of the law of course. In the information superhighway that is the internet, and in the world of technology that we live in today, there are bound to be more and more services that require cloud hosting, and servers. The only downside to this would be to have to account for the growth of use in these services by making sure that solutions that implement this technology is able to scale to the maximum population, as it could be possible in 3 years that every individual has internet access.

There are several technologies and other developments that have contributed to the rise of clouds, services and servers. One of the first developments that have contributed to the rise of clouds, services and servers is the development of wireless internet technology. Wireless technology made it considerably easier to be able to access the internet, as you could now access the internet on more mobile devices such as laptops, tablets and smartphones. With this, internet access was not anymore limited to non-portable PC units. The greater scope of internet access gave more people the power to be able to use the internet. With most, if not all, services that can be reached via the internet using any or all of the cloud, services and server technologies. Another technology that I believe has contributed to the further development of cloud, services and server technologies are fibre optic cables. With the higher bandwidth and speed capabilities, fibre optic being used in more places will allow for the next generation of cloud, services and servers to be implemented, that can fully utilise the capabilities of these cables.

What is the likely impact? (300 words)

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

The potential impact of this development is ultimately the connectivity of each and every internet-enabled system. I believe a network that consists of every single device all sharing their resources to achieve some goal that any device wants to achieve would serve to be a huge benefit to everyone. In terms of a short term potential impact, I believe that this technology is here to shape the future, forging a way forwards leaving developers and solution designers to consider how a solution can use “connectivity” to be able to increase efficiency and effectivity.

What is likely to change is the growth of the use of this technology. As access to the internet gets more and more acquirable by the day, more and more individuals will be using cloud, services and servers when accessing the internet. The growth of this technology will need to be accounted for, as mentioned previously. The people to be mostly affected by this is internet users who are using functions that require the connection of specific nodes in order to share resources, information and software.

In the future, as more and more cloud services, services and servers are being built, I definitely think that this will introduce and create more jobs. Several jobs such as, but not limited to, infrastructure designer, infrastructure and server maintenance, software engineer and also database designer will need to be filled for almost each new cloud, service and server that will come into fruition.

In terms of technologies, I believe that the growth of cloud services, services and servers will result in the creation of new technologies. This is largely attributed to the fact that these elements (cloud, services, servers) are fundamental components of a reliable, robust backend service. As better standards and implementations are discovered for cloud, services and servers, new technology can be developed to match the new standard of solution of the cloud, service and server technologies.

How will this affect you? (300 words)

In my daily life, the implementation of the cloud, services and server technologies affect me greatly. On a daily basis, when I wake up in the morning, I ask my Google Home unit what the weather looks like for the day ahead. This in itself uses a voice module service hosted by Google servers which uses a service to find the information that I need. After this, I usually take a shower while playing music on Spotify. Music on spotify would be hosted on a huge number of servers, all working to share the load. These two things alone already show that the technologies of cloud, services and servers play a huge role in my daily life. Another example in my life where I commonly use these technologies is for university. RMIT has a Google Drive, which I use constantly for note taking, and file creation. I also use it to share files among peers, and to store other files. Google Drive itself is a cloud-based service which uses Google-hosted servers to store and share information among themselves for the user.

As this technology grows, there will be more and more powerful functions that are achieved using this technology. I will certainly be using some of those services in the future. I am looking forward to the things that we will be able to accomplish using this technology as the foundation.

My family and friends all use the internet to achieve things like browse and send email, store files and to browse entertainment sites for videos and music, and etc. Therefore, the development and creation of this technology has also greatly affected the lives of my family and friends in a positive way. Shared resources via a network allows us all to accomplish many tasks on the internet much easier, and much quicker.

Project Idea (Free Parker)

For our project idea, we decided to use a project created by one of our members. It is called Free Parker. Free Parker will be a voice module which can be added to a Google Assistant or Amazon Alexa system. It uses data which is provided by Melbourne Data, which gets refreshed every 2 minute to give the user an idea of where they will be able to park for free. It will be able to give predictions on parking, and also give updates on parking spots. This allows the user to ask questions such as "Will I be able to park here at this time?", "Can I park here right now?" and "Find a spot near me". Further down the line, this can be expanded to a website or even an app, however a voice module interface would work best in a vehicle.

We believe that this is a viable solution in partly tackling the growing problem of overpopulation, in particular, the high amounts of people that drive to work that will need parking. According to the Australian Bureau of Statistics, in an article published by The Age in October 2017, featuring data taken from the Census in 2016, 74.4% of Melbournians drive to work by car. According to the 2016 Census, that's 1,274,268 individuals. With this many driving to work, there is sure to be a high percentage of these users struggling to find parking especially in busy areas. Finding parking is an activity done while in the car. When driving, your hands and your eyes are busy, which means the Voice interface is a perfect for Free Parker.

Free Parker will use data exposed by Melbourne Data which pertains to the status of several parking bays and parking sensors. Using an API endpoint provided by Melbourne Data, Free Parker will be able to track and provide the location of free parking spots. Using the data given to us, we will be able to monitor the results that are given for a given time. We can then use these results to calculate the probability that there is at least one free parking spot at any location at any time. In this way, we will be able to provide users with the service of Predictive Free Parking. This will allow drivers to know where to drive to in advanced, based on the fact that they want parking there. Since the data returned by the API gets updated every 2 minutes, our predictions can also be filtered to that level of specificity. This means that drivers will be able to ask "Find me a free spot in this place in 5 minutes", allowing them to change their trip accordingly, due to the specificity of the API. The Voice interface is important because the main users of this program will be drivers who are currently behind

the wheel, or passengers riding in a car. It could also even be used by people who are just about to leave their houses. This is perfect, because the Voice interface is meant to be used for "hands-busy eyes-busy" situations, exactly like driving. Being a voice module, it can also easily integrate into any Voice service vendor, e.g. Google Assistant, Amazon Alexa, Samsung Bixby or Apple's Siri. Since most cars these days have some technology that allows the phone to connect, simply connecting your phone should be enough to be able to fire off the service. For example, most Android phones are capable of launching Google Assistant. Given the phone is connected to the car, the same Google Assistant can be used to start the Free Parker voice module. This way, the service will work regardless of device. Phone, computer, car, watch will all be able to run Free Parker as long as they have some sort of Voice agent.