CLOUD COMPUTING

In this report, I’m going to write about an IT technology called cloud computing. Cloud computing has been around for a decent amount of time, enough for people to see its potential and influence on the IT industry as well as other fields. So far, it has done a lot for us in terms of increasing the convenience in accessing resources, reducing the budget, providing storage and much more. However, there is still room for further development, so I expect a bright future for this technology due to its impact on our lives.

Cloud computing is a technology which offers multiple IT services hosted in the cloud as the name suggest. More specifically, “cloud computing is a method of providing shared computing resources, including applications, computing, storage, networking, development, and deployment platforms as well as business processes. Cloud computing makes computing resources easier to use by providing standardization and automation.” (Judith S. Hurwitz and Daniel Kirsch 2020, p. 8). This means that the technology can be made useful in multiple contexts as long as it is computer-related work. For consumers, cloud computing provides 3 main services model, which are software as a service (SaaS), platform as a service (PaaS), and infrastructure as a service (IaaS). SaaS provides a completed software with user interface while PaaS is for developers, so it provides the developer tools, environment and systems so that they can test and create the application. IaaS is also made for developers, but it is much more advanced compared to the other two. Kris Jamsa (2012, p. 7) defined that “The infrastructure as a service (IaaS) model provides a virtual data center within the cloud. IaaS provides servers (physical and virtualized), cloud-based data storage, and more. Within an IaaS solution, developers must install their own operating system, database management software, and support software.”. Thanks to the variety of services and benefits, many people and corporation are using cloud computing for their own purposes. There are many examples regarding the diversity in the application of cloud computing. Some of the most common uses of cloud computing are hybrid cloud, test and development, Big Data analytics, cloud storage, disaster recovery and finally data backup. Hybrid cloud “is a computing environment that connects a company’s on-premises private cloud services and third-party public cloud into a single, flexible infrastructure for running the organization’s applications and workloads. This unique mix of public and private cloud resources provides an organization the luxury of selecting optimal cloud for each application or workload and moving workloads freely between the two clouds as circumstances change. Technical and business objectives are fulfilled more effectively and cost-efficiently than could be with public or private cloud alone.” (IBM Cloud Team 2020, para. 4). Another favourite use of cloud computing is Big Data analytics, for businesses to take a deeper look into their customers to make better products, “Retailers and suppliers are now extracting information derived from consumers’ buying patterns to target their advertising and marketing campaigns to a particular segment of the population. Social networking platforms are now providing the basis for analytics on behavioral patterns that organizations are using to derive meaningful information.” (IBM Cloud Team 2020, para. 9). Next is the cloud storage, a very popular use of cloud computing. Cloud computing “offer you the possibility of storing your files and accessing, storing, and retrieving them from any web-enabled interface. The web services interfaces are usually simple. At any time and place, you have high availability, speed, scalability, and security for your environment. In this scenario, organizations are only paying for the amount of cloud storage they are actually consuming, and do so without the worries of overseeing the daily maintenance of the storage infrastructure.” (IBM Cloud Team, para. 11). In the future, probably within the next three years, cloud computing can be used parallel with fog computing. Cloud computing has many strengths, however it comes with certain weaknesses, such as low responsiveness, low security, limited mobility and so on. Fog computing, however, “extends the Cloud Computing paradigm to the edge of the network, thus enabling a new breed of applications and services” (Bonomi et al.2012 p. 1). It can support cloud computing’s weak spot by offering traits such as high responsive time, high security and high mobility.

Along with the robust development of cloud computing, many things will be affected, most of them will be businesses and data related jobs. With its resources, cloud computing is powering computing activities by providing users with storage without having to own additional hardware for that purpose. Therefore, people can do they job more efficiently and not have to worry about installing extra memory in the long run. Moreover, for businesses, before cloud computing appears, companies have to put a great amount of effort into physical servers. Specifically, companies have to worry about wasting financial resources on servers they will not use as well as the maintenance of servers in operation. But now, with cloud computing, companies have the freedom to only pay for the cloud capacity when they need them, and adjust the capacity according to their demand, which allows businesses to scale easily. Also, cloud computing provides automation, which is useful for companies as they can focus more on their agenda and leave the maintenance to the cloud provider. For developers, this technology opens a new door to test and build larger projects with less time. As it provides applications, servers, and storage with significant amount, Big Data analysis and artificial intelligence are going to be significantly more powerful. Hence, data related jobs and businesses are going to make a big leap in terms of efficiency, demand and profit. With this direction, we may see a future where the cloud would absolutely replace all physical servers, and most of our activities will be more agile by using cloud-based services integrated with other existing technologies. However, this development of technology would likely reduce the need for the installation and maintenance of physical servers and hardware for memory. Therefore, computer storage devices and servers’ maintainers and producers are on the verge of unemployment in the future.

As for myself, I am not using cloud computing right now. However, in the future I would love to work as a data scientist. Therefore, I would like to get used to the work environment by practicing working with big datasets and getting access to online resources as I need them. So, cloud computing would assist me significantly on my way to my dream job. As for one of my relatives, my uncle who is an artificial intelligence engineer, he has been using cloud computing for work, more specifically for data storage and managing his training models. Since using this technology, his job has been more convenience and easier in terms of increasing productivity and delivering products for customers.