Cyber Security

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**What does it do?**

**Cybersecurity** is the protection of computer systems, networks, hardware and software from malicious damage. There are many different techniques currently used to combat threats to major companies relating to their data. Some of the major techniques are Cryptography and Steganography. **Cryptography** is the practice of writing codes and solving codes for secure communications which only allows the sender and the intended recipient of a message understand it. Whereas, **Steganography** is the practice of concealing data with some other non-secret data to avoid detection. There are four different types of Cybersecurity - **Network Security** which includes taking physical and software measures to protect the network infrastructure by creating a secure environment, **Application Security** which is the process of checking the security flaws in the application and increasing the security of the application which mostly occurs during the development stage, **Information Security** also referred to as Data Security keeps the data secure from unauthorized access during storage and transmission of data and **Operational Security (OPSEC)** which is the process of assessing and protecting public data. Cybersecurity has something new every day, but attackers are really quick to learn techniques to keep up with them. Xerox PARC as a result of a development project for the USA’s Pentagon Defence Advanced Research Projects has created a chip that can self-destruct itself within few seconds when a bright light falls on it after the circuit inside the chip is turned on. In September (2019) last year Google has announced that it has achieved “quantum supremacy” which is a quantum computer that can easily crack encryption. It says that this can affect the encrypted data for many years to come if the computer falls in the wrong hands. Another major improvement in this industry was the use of Artificial Intelligence (AI) which is becoming more versatile. According to John Shin the managing director at RSI security, the future of this industry is decided by the hackers which he currently thinks is more inclined towards the Health and Wealth sectors which allows them to get hold of private and sensitive data of billions of people. “Welivesecurity” states that the next big thing in cybersecurity is the implementation of Machine learning to make a lot of tasks simpler. By 2023 the **Australian Cyber Security Growth Network** **(ACSGN)** estimates the cybersecurity industry to be worth US$ 216 billion and by 2026 a whopping US$ 270 billion, whereas its currently estimated to be US$ 173 billion. This is predicted due to a mountain of factors; criminal cyber activity is on the rise as they use many different strategies to invade the company’s networks and to combat this companies are spending millions of dollars to protect their company. According to IBM just within the span of three years from 2016-2018 over “11.7 billion records and 11 terabytes of data was leaked or stolen in publicly disclosed security incidents. Due to the cyber attacks like these a lot of companies will concentrate on improving their information security which will further allow technological developments like the implementation of AI into cybersecurity. FaceApp which is an example of a major company which has more than 150 million users has become quite popular in a short span of time this uses AI to change the way people look in the photos they submit to the app and currently has more than 150 million faces in its database, though multiple sources claimed that the app is safe the FBI has warned people that Russian app is a major threat to the national security. With the technological development Google or Apple can focus on eradicating such apps.

**What is the likely impact?**

The further development of cybersecurity saves companies a lot of money. Cybersecurity improvements could positively affect companies that seek help of information security technologies to protect their data. One major development this will achieve is the confidence in people, as an example in the light of recent months millions of Australians are worried about their data privacy with CovidSafe app developed for the country and people are refusing to download this app. But, with better technology the app could gain millions of downloads allowing the country to be safe. The eCommerce sector also plays a major role in the development of cybersecurity as with new and everyday used companies like amazon and eBay the user and sellers need to have safety to their data and should trust these companies. In the next seven years the growth for the cybersecurity market is strong and the demand for more software is to increase at an average annual rate 9.5% which is the strongest growth in the security operations sector, and this is just for the software tools. For the hardware IT protection, the demand growth is projected to be at a rate of 6.5% per annum which represents a US$ 98 billion growth according to the **Australian Cyber Security Growth Network.** Hardware production currently supports roughly 4.6 jobs for every US$ 1 million revenue and the software supports an average of 4 jobs for every million dollars generated, both of which are expected to increase with the current demand. According to CISCO in the year 2019 there were approximately 6 million job opening in this industry. In this modern world cloud computing is the major business driver where an increased number of companies on a daily basis are moving towards cloud storage for their data this reduces the need for companies to employ cybersecurity agents but generating more demand for security operations to manage the cloud. This will not impact negatively on the past technologies as they will be only used to develop new technologies.

**How will this affect you?**

Improved cybersecurity technologies would make my life much better as it would be one less worry about my data being stolen. This will also further allow me to purchase many more internet of things devices and also while I am on the internet it helps me stay protected from unauthorized user entering my devices and also keeps malware, ransomware and phishing away. This also improves my confidence in other products such as software’s and eCommerce. Cybersecurity also helps develop certain aspects of Augmented reality which would make experience with apps such as snapchat better and my search history with google safe. Friends and family might likely share the same affects as myself as they also currently use many devices which are connected to the internet and many of them are worried about the security issues in their devices.

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Appendix:

