**Blockchains/Cryptocurrencies:**

**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?

It is difficult to say exactly what is the state of the art of cryptocurrencies as the technology acts as more of a platform which is built on top of in different ways and directions by each currency. For example the original currency which invented blockchains; Bitcoin is still considered by many to be the best of the bunch due to its robustness, large amount of specialised mining ASICS that secure the network and the ecosystem surrounding it. While other currencies achieved success by improving on the basic cryptocurrency mould. For example Etherium added advanced functionality which allows users to code “smart contracts” which are executed on it’s blockchain while its mining algorithm favours graphics cards. Or in case of Monero it allows users to perform fully private transactions unlike Bitcoin where all transactions are traceable while it’s mining algorithm prefers CPUs.

Today a user can actually own their money by being their own bank. A blockchain allows a currency to exist and function without being controlled by a government an individual or company instead users agree on the rules which are then supported by miners who invest a large amount of money in ASICs which produce them money, this is the main difference between blockchains and other decentralised projects; those who secure the network are incentivized to continue to secure it and are punished by the network if they try to undermine it. Using Bitcoin and a BIP39 mnemonic anyone can escape persecution or a war torn country with all of their wealth just by storing 12 basic words in their head. Anyone can transmit any amount of money to anyone in the world for an under 1 cent transaction fee with BCH just by knowing the recipients wallet address. With Ethereum anyone can create their own tokens and or cryptocurrencies on top the ETH blockchain. Using something like memo.cash anyone can store information on the BCH blockchain and even have conversations with other users without the fear of being censored or their comments being removed. In the next three years some currencies will see increased usage and acceptance as payments for goods and services, most likely a very streamlined and or user friendly currency or application will popularise the technology by reducing the difficulty of using cryptocurrencies for the average layperson. A cryptocurrency will either be created or improved upon to match or exceed the benefits of using physical money while having a minimal amount of drawbacks and resources needed to maintain it.

There are two major technologies that allow cryptocurrencies to function. The internet is of course required as without it the blockchain would not be able to be accessed by anyone outside the local network, this would greatly impact the utility of the blockchain. The second is Proof of Work(PoW) which uses cryptography to verify that a user spent time finding a hash which allows them to create a valid block, this is hugely important as without having proof that someone spent clock cycles and electricity on securing the network would mean that the network is only as secure as long as every participant is honest.

**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 potential impacts of cryptocurrencies will be and are massive. People will start to use cryptocurrencies to do things that were impossible or just uneconomical such as overseas money transfers or fully secured and automated trades or bets. The financial sector especially will be impacted as cryptocurrencies will change how money can flows in the world. The people who should be the most affected by this technology are the poor who are currently not served by a bank. In less developed countries without a stable national currency or a strong banking system currently suffer without financial security, cryptocurrencies will allow them to maintain and secure their wealth especially in time of crisis. The banking systems in developed countries will also be affected due to people having the option to entirely bypass them when storing and or sending their money. Cryptocurrencies will both create and make many jobs redundant. If cryptocurrencies succeed in replacing a significant chunk of the financial system then two things will happen: A large amount of software based jobs and startups will be created to build on top of existing blockchains and to provide blockchain based services and products, as well as hardware sided jobs and companies which will fulfill the demand for miners and other utilities such as hardware wallets. However a large amount of jobs will become redundant such as some security services, many banking related jobs and perhaps even casino workers and stock brokers.

**How will this affect you? (300 words)** ​In your daily life, how will this affect you? What will be different for you? How might this affect members of your family or your friends?

I would most likely never get a bank account as I’d be able to store and send my money with cryptocurrencies. For example if I wanted to buy something from the US amazon site I could pay for a product directly with a cryptocurrency for a <1 cent fee, while if I wanted to do the same thing traditionally I would have to pay a fee to transfer money to my paypal account, then another fee to change my AUD to USD and then I would pay a defacto fee of 3% which is reflected in the price due to the merchant having to pay a 3% fee to paypal. I would most likely participate in some kind of a decentralised social network instead of the current social networks that are controlled by one company. I would contribute to open source blockchain applications and perhaps even build some of them perhaps as my job. Blockchain applications will affect my family and friends as such technology will reverse the trend of the internet centralizing under companies, these people would most likely participate in distributed services, applications and or networks instead of current traditional services that are built and managed by a few people, groups or companies. The way they transact on the internet and in person would also most likely change with internet payments perhaps being completely replaced with cryptocurrency transactions.