1. Value of Bitcoin by the end of 2022?

* Bitcoin is a digital currency, and a type of cryptocurrency that does not have any central controller for managing all the transactions, and cryptocurrency generation its values have increased a lot in the following years. The high liquidity associated with bitcoin makes it a great investment vessel if you’re looking for short-term profit. In 2011 Bitcoin’s worth was just 1$ but it increased over the years.
* Prices between 2011 to 2022

2010- 1$

2011- 5.27$

2012- 13.30$

2013- 770.44$

2014- 313.92$

2015- 434.46$

2016- 997.69$

2017- 13,412.44$

2018- 3869.47$

2019- 7,188.46$

2020- 29,391.78$

2021- 47,743$

* Majorly price of bitcoin fluctuates due to demand and supply and user sentiments involved in it, availability, and competing cryptocurrencies.

Major competition to Bitcoin is Ethereum, Dogecoin

Number of Bitcoins minted per day = 900

Number of Dogecoin minted per day = 14.4 million

Number of Ethereum minted per day = 49,315

User sentiments may vary from -1 to 1 (1 being very good sentiments).

Availability of coins in the year = 900\*365 = 328,500

The demand ratio band can be taken from 0.1 to 1

Formulae for Calculation/Prediction:

% Change in value of bitcoin currency = ((Previous Value \* User Sentiments\*Demand Ratio Band) / (Availability of coins in the year)) \* 100.

User sentiments can be assumed anywhere from -0.2 to 0.5 since this is the average range of people’s sentiments

The demand Ratio Band varies from 0.1 to 0.5 since only influential people trade in it.

Now since the availability of the bitcoins in the year is 10,800 and if demand increases then the value of the currency also increases.

% Decrease in Value of bitcoin = ((47,743) \* (-0.2) \* (0.1) / (328,500)) \*100 = -0.29%

Predicted Value 1 = 47,604 $

% Increase In Value of bitcoin = ((47,743) \* (0.5) \* (0.5) / (328,500)) \*100 = 3.3%

Predicted Value 2 = 49,318 $

* Since the value of a currency is unlikely to change between 47,604$ and 49,318$ we will assume the mean of two values which is 48,461$. By the end of 2022 value of 1 bitcoin will be approximately 48,461$.

1. Problem Statement: By which year will EVs or Electric Vehicles replace (80 % - 90 %) of Diesel and Petrol vehicles in India.

Now to analyze this we have to consider several things, firstly we have to find how many registered vehicles are there in India, and how many of them are already electric vehicles, what are the user sentiments related to electric vehicles, how is the demand ratio, how is the supply ratio.

No. of Petrol / Diesel Vehicles is approximately 300,000,000 in 2022.

No. of electric vehicles is approximately 20,000,000 in 2022.

Growth of Petrol / Diesel Vehicles every year 8,000,000.

The growth of electric vehicles every year is 10,000,000.

Sales of Electric vehicles are more since not only cars and public conveyance are running from electricity but there are many two-wheelers that children below 18 years can’t drive to solve this problem we have e-bikes.

Since many companies like Tata, Mahindra, Hyundai, and Ashok Leyland are launching electric cars, bikes, and e-rickshaws.

The growth of electric vehicles is evident everywhere.

Demand ratio for e-vehicle to that of petrol and diesel vehicles = 70:100

Public Sentiments are highly based on low cost and high quality which are made available to consumers through e-vehicle since the charging cost is also low so we will assume the public sentiments ratio of e-vehicles to that of petrol/diesel is = 60:100

80% vehicles will run on electricity after x years.

(20,000,000 + x (10,000,000)) / 0.8(300,000,000 + x (8,000,000))

= (70 \* 60) / 100\*100

x = 11.05 years

90% of vehicles will run on electricity after x years.

(20,000,000 + x (10,000,000)) / 0.9(300,000,000 + x (8,000,000))

= (70 \* 60) / 100\*100

x = 13.38 years

This data may vary on consumer sentiments but that will be overcome by the demand ratio since petroleum reserve will dry in the next 2 to 3 decades, and India is currently facing a scarcity of petroleum.

According to this model by the year 2035 or 2036, India will witness a 90% rise in e-vehicles and they will replace the current petrol-driven vehicles.

1. For understanding the technological monopoly of Microsoft, Apple and Google we must know what is monopoly.

Monopoly is a term used in a business that denotes control of an industry or service by only that particular company, business monopolies can be understood using the variable extraction, in this, we will classify the types of monopolies

* Firstly, there can be a natural monopoly like all the giant companies like Google, Microsoft, and Apple are the leading product-based companies which were first of their kind, so they had no competition in the market at the time they were launched.
* Secondly, there can be state monopolies in which government either regulates or control the entire service, like in China government has banned much-imported technology.
* Thirdly, there is an Un-Natural monopoly caused by the introduction of new ideas or the developed ideas of the available product, cost-effectiveness of the new product also plays a pivotal role for the new product to flourish because the less costly product is viable to be purchased by consumers.
* Fourth, the Consumer market is highly influenced by their trust and sentiments, so the main goal for any product is to satisfy the consumer, and all the Tech giants listed above like Microsoft, Apple, and Google have built the trust of their users over the years which is very hard to change for any new technology even if it is good enough to compete.
* Fifth is the market capitalization which is very huge in all these companies, pumping too much money into any start-up even if launched by big companies or even thinking of getting funding is very difficult, which makes them difficult or impossible to compete with.
* Sixth is the Branding or the brand value or face of the product, no new product can challenge the brand value which is developed by these companies for their product over the years.
* Seventh, Marketing is very hard since the existing products were already received with due content by all the users. They won’t switch fast, even if the cost is low since there are other factors too.
* Eight, even if the product receives funds and is well received by the audience what is more likely to happen is the missing of expertise and market understanding which is deep-rooted in the Tech Giants, but is merely seen in the new start-ups.
* Ninth is the ever-increasing development of technologies like Microsoft, Google, and Apple develop at every instant, technologies which make it quite impossible for new start-ups to reach their levels and standards.
* Tenth is the Market Acquisition by Company Acquisition, even if there is a good technology that they feel, will take time to produce in the future by their companies, they buy that technology or that company by offering them the Capital or by funding them by taking major equities of that product, thereby merging it with them.
* Eleventh can be strategic planning to make competitors out of business with an efficient approach and business skills, like Jio did in India.

These all factors and variables make these Tech Giants the major stakeholders and thus developing their monopoly over the global market.

1. Why there are only 2 CPU chip manufacturing companies AMD and INTEL.

* It all began in 1981 when the first IBM Personal Computer integrated Intel’s x86 Instruction Set to power up their computer. This personal computer was an enormous success in the consumer market due to its simplicity and ease of use. Followed by this, programmers began working on codes and applications for this x86 system. That eventually pushed other competitors out of the market. But due to rising demands, INTEL distributed the license of the x86 system to companies like AMD, Cyrix, and IBM. Problem aroused when AMD improved upon its x86 model and backstabbed INTEL with its x-64 instruction set.
* Currently there are 2 major competitors in the market which are AMD and INTEL. AMD’s Ryzen is giving heavy competition to INTEL Quad Core processors since both of them have taken to CPU chip manufacturing units. Both INTEL and AMD are working hard to build a healthy competition, which pushed other manufacturing companies out of the race.
* It’s not that there are no other companies but companies like Cyrix which built upon the x86 model weren’t able to satisfy the consumer market and therefore were way too unsuccessful.
* Talking about other giant rivals, we also have Apple’s M1 chip, which has superb efficiency while performing heavy workloads, but it is exclusive to Apple devices, and since apple devices are costly its usage is limited. Looking at the mobile market, Snapdragon is currently in high demand among smartphone users as they mostly prefer it over other chips. But then again, it is limited to the smartphone industry.
* Although plenty of CPU companies exist in the market, they can’t be compared to what Intel and AMD have in their stores for the consumers. Also, years of expertise, and a loyal fanbase has built a nice reputation for these two companies forever.