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Evaluating The Diffusion & Adoption of Bitcoin: Through Network Effects, Public Sentiment & Self-Fulfilling Expectations Equilibrium

Context / Relevant Resource: https://techcrunch.com/2022/11/08/binance-signs-letter-of-intent-to-acquire-ftx/

We know from the course textbook that "when network effects are present, a consumer's willingness to pay is determined by two things: intrinsic interest, and the number of other people using the good – the larger the user population, the more she is willing to pay."

Over the course of bitcoin's history, there are two main "normal distributions" of price that one could identify (marked with horizontal blue lines). One critical takeaway is that the price bottom (the floor) is rising and holding in each successive distribution.


***As of Nov 9, 2022 at 12:04**

This holding of the current floor (based off of the previous distributions' ceiling) aligns well with bitcoin's S-curve. For context, the Adoption S-curve is "the cumulative rate at which a population adopts a new technology or product" ([Source](#)). Below, bitcoin (BTC) is tracking right along with many other innovations.
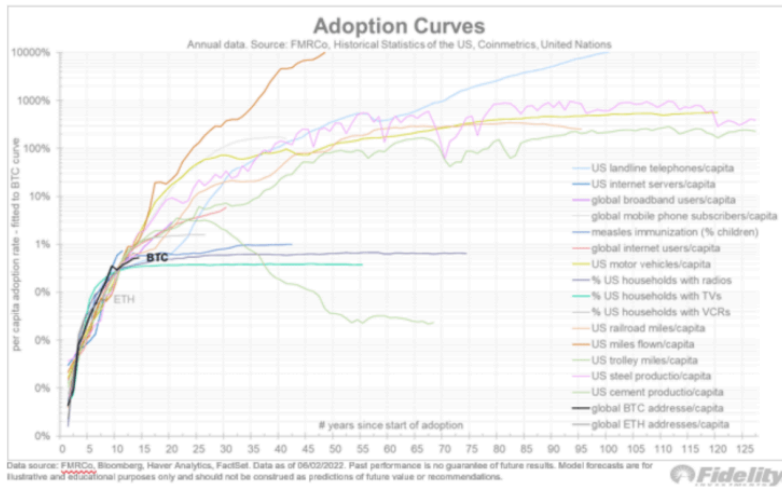
Now to see more clearly and for additional context, here are the S-curve's of many other technological innovations. You'll notice that it took electricity about 60 years to reach 100% adoption in U.S. Households, and it took 43 years to reach 50% adoption. Bitcoin is only 14 years old. In innovation, public sentiment is acquired gradually, then suddenly.
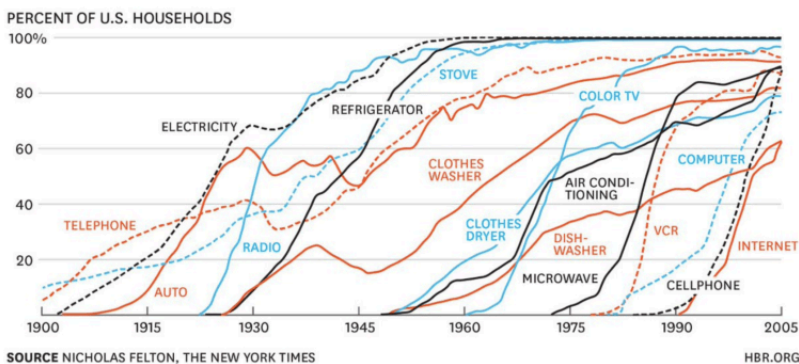
Now, looking more closely we can see what percent of the population has currently adopted bitcoin. Representing the consumers as the set of all real numbers in the interval between [0,1], we see that currently X is at about 130MM/ 7.7B = **1.68%.** Furthermore, adoption is expected to reach 10% by 2030 (Source).
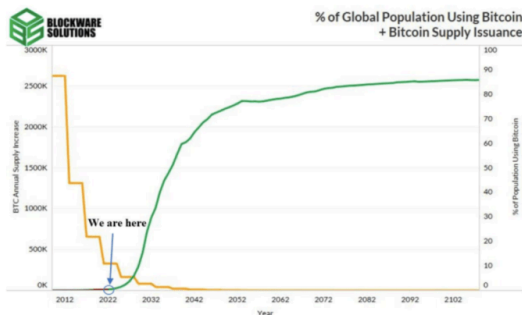
As we can now see from this graph above and the graph charting the 2 normal distributions, bitcoin's price may fluctuate, but as its price steadily increases, so does adoption. Given that adoption is predicted to steadily increase, I believe we are over the tipping point, z*, but not far from it.

From the s-curve it is clear there is upward pressure on the price. However, this is still very susceptible to public sentiment. For instance, in very recent history, we can see how quickly sentiment changes and how the **self-**

fulfilling expectations equilibrium comes into effect.

On November 8th, it was announced that the largest Crypto Exchange, Binance, would be acquiring another Crypto Exchange and their rival, FTX, after it was leaked that FTX was insolvent to avoid a huge collapse if all consumers pulled their funds out of FTX. An analogy could be the Panic of 1893 when people raced to withdraw their funds, leading to the failure and downfall of banks. A similar occurrence happened during the financial crisis of 2008 after the burst of the housing bubble.

*As of Nov 9, 2022 at 12:10

Despite bitcoin and other crypto currencies being incredibly different, bitcoin's price dropped dramatically from 21,000~ to 17,000~ (as shown with the blue trend line which is drawn slightly off for visibility).

In a case such as this, people who own crypto *should* realize the value of bitcoin even more compared to tokens such as FTX's FTT, but that is not the case. Consumer sentiment falls. This result is where the importance of marketing comes in and how you have to differentiate truth from falsehood, as was mentioned in class.

In a time like this, the population should be reminded of the information below. "Marketing" such as the following is the information that is hidden but that has the power to change public sentiment.


Examining Equilibria: What price will achieve z** equilibrium?

Currently, we still have a minority of people that have adopted bitcoin; however, it took 43 years for 50% of Americans to adopt electricity, so only 14 years into bitcoin, this is to be accepted. While I don't know what price point will be stable equilibrium z**, bitcoin, finite with only 21MM coins, is going up in price forever.

As previously mentioned, given the fact that the floor price of bitcoin is holding (off of the previous ceiling price), we are over z* and between z** because there is trending upwards pressure on the price. Given that the price of bitcoin is going up forever, people who see the value of bitcoin have a reservation price of bitcoin consistently higher than the current price, contributing to the upward pressure. There are also people who aren't as knowledgeable yet, or perhaps have a limited budget to spend and have a reservation price lower.

Fidelity Digital Assets predicts each bitcoin to be worth 100MM dollars by 2035. When mass adoption occurs, when the "then suddenly" happens after lots of "gradually," people who have a lower belief in bitcoin will raise their reservation price and purchase bitcoin, "collectively push[ing] the audience size up to the higher equilibrium at z**, showing the self-fulfilling expectations equilibria come true.

However, a paradox arises. We know that when the price is lower, "the equilibrium audience size" is more likely to increase "to a much larger value."
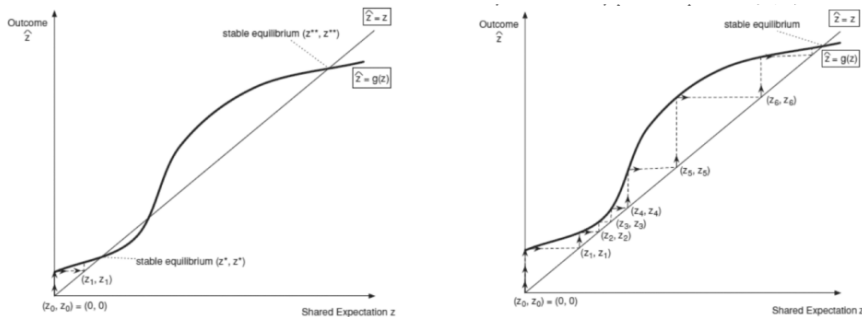
But, people want to own something when they think it's valuable. Lots of people think bitcoin is risky despite it being the most secure asset you could own. So, adoption, the self-fulfilling expectations equilibrium, and the diffusion of innovation must rely on promotion and education, to increase the value of bitcoin, lowering the threshold and leading to continued upwards pressure. Given bitcoin is perceived as a "high risk" investment for some, the high level of trust in their ties is crucial for adoption. Luckily, bitcoin, unlike any other crypto, is rooted in trust, truth, and inclusion.

November 11, 2022 | category: Uncategorized

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