3 Major Crypto-Mining Challenges and How to Conquer Them

Everything from high costs to security vulnerability can be mitigated.

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Crypto mining is the process of releasing cryptocurrencies into a network by completing a given set of mathematical computations. And just like any other mining industry — gold, data, etc.— it comes with a unique set of challenges.

For the uninitiated, cryptocurrencies are underpinned by a technology known as blockchain. Blockchains are digital ledgers that permanently store information. More precisely, they are strings of blocks containing verified data joined together by "hashes." Hence, to create a blockchain, data has to be processed and verified. This is where crypto miners come in, verifying data and earning cryptocurrency rewards in return.

Originally, you could easily mine with your personal computers. However, this isn't the case anymore, especially with an increase in the number of crypto miners. Theoretically, each crypto has its own "block time." For Bitcoin, it takes about 10 minutes to mine a block, and for Ethereum, it takes about 20 seconds. With this in mind, it means single computers or PCs are disadvantaged. As such, miners are forced to adopt faster processors. To beat the heat

of competition, many miners now adopt a special machine known as an application-specific integrated circuit (ASIC).

All in all, crypto mining can still be a readily profitable business venture, but it’s very important that you know the three major challenges crypto miners face and how they can be mitigated.

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High Energy Costs

To maximize successful mining chances, you’d need to combine hundreds of ASICs together to solve one problem. Consequently, this would require extremely high power output, which will cost you exorbitantly high electric fees. A CBS News report revealed that Bitcoin mining consumes more energy than 150 countries. But here are possible ways in which this challenge can be solved.

1. Crypto miners can opt for less power-intensive protocols. One of them is the Proof of Stake (PoS) consensus that secures networks through the staking of crypto. Currently, Ethereum and Cardano are leading this shift. (Note: This does not solve the centralization problem, as higher stakes attract more interest. Only those who can afford to hold their crypto, and substantial amounts at that, benefit from the protocol.)

2. Running your mining activities on mining facilities and mining data centers that are powered by renewable hydroelectricity and solar energy. Mining companies like Hydrominers and Burency mitigate high energy costs by powering mining activities via hydroelectricity, and their mining plants are found around colder regions to reduce heat-dissipation costs.

Vulnerability to Cryptojacking

Beyond creating a democratic space, the essence of decentralization is to assure security, right? Well, hackers are getting more sophisticated at tapping your resources. In fact, in 2017, Auguard reported a 31 percent growth rate in in-browser cryptojacking. Meanwhile, power concentration is not only susceptible to malware attacks, but cyber thieves are now adopting a ransomware-like tactic to remotely mine cryptocurrencies from people's computers.

There is no conventional solution to tackle this problem per se, but an improvement to PoS adopted by DigiByte, which uses a hybrid of five protocols on its blockchain platform, is a strong means crypto miners can use to defend against this form of attack. Meanwhile, it is interesting to know that each protocol contributes only 20 percent to secure the platform in this case. So, if one system is under threat, 80 percent remains unaffected. In the same way, this hybrid model helps counter centralization. At any given point, a miner will only control 20 percent of the network, even if they were responsible for 100 percent of mining in a given protocol.

Centralization

ASICs have proven adept at solely mining a specific cryptocurrency. They are so powerful that once a coin-specific ASIC is released, it's sometimes challenging to mine without one. While this is a great development in the crypto industry, it is also perceived as a problem, because many crypto miners are influencing the way and manner in which ASICs are being created or designed. And since there are very few ASIC manufacturers, the mining space will eventually be centralized. However, there two possible ways to address this problem: Decentralizing the manufacturing process of ASIC miners, and putting into effect a new hash algorithm that would effectively wipe out all existing ASIC miners.

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It’s not too late to start mining. Just be sure to keep your costs down and defenses up, and then reap the rewards.

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