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# Confessions of a Bitcoin believer: One former miner's journey from zealot to skeptic

Shawn Tully ⋮ 13-16 minutes ⋮ 2/7/2021

Alex Pickard was the ultimate Bitcoin believer. At age 27, he joined the revolution, quitting a lucrative trading job in Southern California to mine Bitcoin from multiple garages in a central Washington state hamlet best known for its cheap electricity and plentiful apple orchards. As the cryptocurrency soared on the promise it would evolve into digital cash for everyday purchases, Pickard's farm of ASIC-driven mainframes was harvesting several thousand dollars a day.

But his adventure was as much about changing the world as making money. "Bitcoin was controlled by a computer protocol that limited its supply, not by a government that could create more, that was the appeal," he told *Fortune*. "Its value couldn't be eroded the way printing more dollars or Euros causes inflation. I believed opening a Bitcoin wallet to buy video games at Amazon and airline tickets on Expedia at pennies in fees—directly, no dollars in-between— was the future."

A huge appetite for electricity overwhelmed the local grid, closing Pickard's mining operation just before the 2018 crash. He's relocated to the Golden State as a Vice President at Research Affiliates, a firm that oversees methodologies for $145 billion in mutual funds and ETFs. In his new role, he undertakes such tasks as researching returns on different asset classes, and strategies that minimize trading costs. From his vantage point in mainstream finance, Pickard is shocked by how far Bitcoin has strayed from the original vision. "Bitcoin never became an online cash system because of mistakes made four years ago that hugely increased transactions costs," he says. "Now, it's supposed to be a store of value, a digital gold that provides inflation protection. But it's much too volatile to be a store of value. Proponents of that theory are completely ignoring the data."

Alex Pickard.

Courtesy of Alex Pickard

What astounds Pickard is how Bitcoin could flop at its original mission as a currency for every day spending, yet soar to fresh heights not for anything it can be used for—even gold is a staple in jewelry manufacturing—but as a vehicle for speculators. "Bitcoin's only value is one speculator's conviction he can sell it to another speculator at higher price," he says. For Pickard, Bitcoin's current jump from $10,500 to as high as $40,000 since October constitutes a "bubble that's bound to explode like all the past bubbles, only worse 'cause this one's been the biggest by far." Pickard wrote an excellent piece recounting his careening fortunes as a Bitcoin crusader for the Research Affiliates website, and he also talked at length with this writer.

## Bitcoin 101

A mechanical engineer by training, Pickard started trading Bitcoin in 2013 while working at a quant investment firm in balmy Newport Beach, California. By early 2017, he decided to roll his windfall into equipment for mining the surging cryptocurrency. He spent $300,000 on around 100 computers equipped with specialized ASIC chips that served one function, mining Bitcoin. He scoured the map for the locale offering the lowest rates for the item that, other than equipment, accounts for a miner's biggest costs, electricity. He found a great deal in Wenatchee, Washington, an enclave of around 30,000 nestled in a crop-rich valley that's a three hour drive east of Seattle. Wenatchee bills itself both as "The Apple Capital of the World" and "The Buckle of the Power Belt of the Great Northwest." The latter title describes its location in the middle of the "belt" of hydroelectric dams on the Columbia River.

Wenatchee's giant hydro plant was selling electricity at 3 cents per kilowatt hour, the lowest rates in the nation. He packed makeshift wire racks holding 22 mainframes each into his garages, and started mining. At the time, 12.5 bitcoin in were being released "block rewards" to the winning miner every ten minutes, valued at the mid-2017 price of $2500 to $3000 at around $200,000 per hour. Pickard's computers were generating millions of "hash functions" every ten minutes consisting of long strings of letters and numbers, starting with a varying number of zeros. He joined a group of other miners who pooled their computing power. When the pool beat rival miners by "solving for the hash" on a new block, Pickard would share in the rewards.

## The great boom

Those wins got bigger and bigger as the coins relentlessly rose in price during the great boom of 2017. That year, Bitcoin went on a moonshot, vaulting more than 20-fold to $20,000. Pickard recalls that his computing power was a fraction of 1% of the overall market, and his gains, as usual with miners, mirrored that share. Still, he was making $4000 to $5000 a day, or what would have been $1.8 million on an annual basis, had the boom continued. It was then that Pickard began worrying about a speculative craze. The run-up was far outside the normal fluctuations of a reliable currency. It was the start of Bitcoin's transformation from a fledging medium of exchange for consumers en route to widespread acceptance, into a digital casino.

Early on, Pickard believed that as Bitcoin became more and more popular for transferring money and buying everything from smartphones to groceries, its price in dollars would become relatively stable. The idea was that over time, Bitcoin would actually appreciate versus the greenback because it's impervious to inflation. Bitcoin also provided a faster, cheaper way of sending money, and promised to lower the 3% merchants paid on credit card transactions to pennies.

Pickard loved showing buddies just how cheap and easy Bitcoin was to use. "In 2013 and 2014, when I'd go to a bar in Newport Beach part of the fun was asking friends to buy me a round of beers, and say I'd pay them with Bitcoin," he says. "I could even show them how to download the Bitcoin wallet right there on their iPhones, and the payment would show up in seconds." At the time, it could cost $50 send money by a wire transfer that could take days, and such sites as Venmo, Zelle, Cash App, and Apple Cash didn't exist or were in their infancy. Pickard's happy hour crowd were swapping digital cash in milliseconds at one cent a zap. "You could feel the magic," he marvels.

In the early years, it indeed looked as though Bitcoin could become a titan in online payments. It appeared en route to fulfilling the vision of its creator, who famously wrote the treatise that launched the cryptocurrency under the pseudonym Satoshi Nakamoto. The main purpose of his brainchild, Nakamoto allowed, was to "enable small casual transactions," and greatly lower the costs of those purchases. Starting in 2014, a number of retailers including Dell, Expedia and video game-seller Steam began accepting payments in Bitcoin.

But between the December of 2017 and the summer of 2018, those players and most others that took the plunge dropped the cryptocurrency. "At the height of the craze at the end of 2017, the fees for paying on sites like Expedia with Bitcoin had gone from 20 cents to $50," says Pickard. "Even now, the cost of transferring money from wallet to wallet is around $10." In scrapping Bitcoin, Steam cited "skyrocketing" transactions costs and the token's extreme volatility. And new payment tools such as Venmo and Zelle were doing what Bitcoin used to do, zipping cash over the internet at minuscule fees.

## Overload

Pickard's Bitcoin bounty didn't last long. In December of 2017, the local utility shut him down for overloading the grid. He left the wilds for California, and held onto his Bitcoin, but the collapse in 2018 mostly erased his winnings. He sold his equipment at a loss.

How did the Bitcoin he so revered go so wrong, so fast? Bitcoin, notes Pickard, "needed huge commercial adoption to become a liquid and stable currency." But a fundamental overhaul to its architecture effectively rendered it unusable for buying cars, airline tickets or cartons of milk. A pivotal event in August of 2017, says Pickard, so transformed Bitcoin that "Neither Amazon nor any other online merchant could adopt it as medium of exchange."

The mining community, he says, was determined to stick to the rule that limited the amount of data stored on the "blocks" added every ten minutes to one megabyte. Each block contained data on around 2200 transactions. Included in that data were the digital addresses of the seller and of the buyer to whose wallet the Bitcoin was being sent. A crucial component was the digital "signature" of the seller that verified his or her ownership of the coins. But because miners and speculators were trading at such a rapid rate in the 2017 explosion, it was clear that the one megabyte limit would cause a bottleneck.

So the miners decided to save space in each block by eliminating the sellers' signatures. That shift is known as "SegWit," for Segregated Witness, the process of separating the seller's signature from the data in the block. Not all transactions eliminate the signature. That helped to effectively double the maximum allowable transactions per block.

"Nevertheless, there was a large demand to transact, and a limited amount that can occur given even those expanded limits," says Pickard. Eliminating the signature was supposed to increase Bitcoin's capacity for transactions by a factor of 3 or 4. It didn't work. "Shortly after SegWit was enacted, demand increased by a factor of 100," says Pickard. The change, he says, undermined the founding rules for Bitcoin. "Nakamoto said, 'We define an electronic coin as a chain of digital signatures,'" he explains. "After August of 2017, the signature was no longer part of the transaction, or on the blockchain, it was effectively in a separate file."

The change posed two negatives for retailers. The first was a loss of confidence. The signatures showed the chain of ownership of the Bitcoin, assuring those being paid in the tokens, for example, that the seller wasn't fronting for a money-launderer. Scrapping the signatures raised a retailer's risks in accepting the rookie currency. The second downer was a huge jump in fees. As the number of transactions rose, the volumes exceeded, and still exceed, the capacity in each block. So payments addressed to stores or transfers destined for a contractor's wallet sat a queue called a "mempool," waiting to be entered into a block.

Each transaction then had to be "authenticated" or "confirmed" by a miner so it could join a block, and so that the retailer or contractor to get paid. The sellers competed to get their transactions into the next block, forcing them to pay the miners higher and higher fees to get to the front of the line. It's that bottleneck that's driven fees from one to ten cents in the mid-2010s to as much as $50 in peak periods, and about $10 today.

"That shift changed the face of Bitcoin by taking it out of everyday purchases and transfers," says Pickard. Today, he says that Bitcoin's new fans are deluding themselves in casting the cryptocurrency as a store of value and hedge against inflation. "They claim it's 'digital gold,'" he says. But gold's value over long periods does stay even with inflation, because it's a commodity with real uses, and the cost of mining it, and hence the price, tends to wax and wane with overall prices—though with lots of jumping and cratering in-between. To be sure, gold's also a favorite of speculators. But in recent history, its largest move was the 40% spike from $1476 an ounce in November of 2019 to $2067 in August of 2020, since moderating to the current $1857. From mid-2013 to mid-2017 it traded in a narrow band from approximately $1100 to $1300.

## A growing disconnect

While gold's trajectory is bumpy, Bitcoin is riding the craziest of roller-coasters. As Pickard points out, its spikes and collapses are totally unrelated to investors' view of a future surge or fall in inflation. In 2018, notes Pickard, while Bitcoin dropped 83%, expected inflation over the next half-decade (as measured by the 5-year Breakeven Inflation Index) remained anchored at 2%. Then, when Bitcoin surged seven-fold from the depths of year-end 2018 to the close of 2020, the BEI was once again signaling no danger from fast-rising prices, finishing at the same 2%. Inflation expectations flatlined while Bitcoin went crazy.

"Bitcoin's extreme volatility means it's not a reliable store of value," concludes Pickard. "It no longer has a use as a medium of exchange. In the biz, they say it's a great asset to 'hodl,' meaning 'hold.' Speculators have nothing to point as proof it's a good investment but the price chart." In the early, supporters hoped that they would no longer have to exchange Bitcoin for dollars, but could buy everything directly with their Bitcoin. "Now, in order to buy anything with your Bitcoin, you first have to exchange it for dollars via Coinbase or another exchange, and pay trading fees on top of the mining fees."

As Pickard points out, every other Bitcoin boom has ended in grief, just where this one, he expects, will finish as well. "It no longer has a chance of transforming society and improving peoples' lives," he says. The magic Pickard felt years ago in that swapping coins that Newport Beach bar has morphed into another kind of "magic" that will be looked back on as madness.