



# distributed hash

## the first year in review



*JANUARY 2023*  
distributedha.sh

# They were the best of times...

Hindsight is always 20/20. Or in our case, hindsight was 2022.

There were many days over the course of the year that the distributed hash partners looked at each other with concern, and had to figure out (in short time and with a constrained startup budget) exactly what to do to survive.

Our earliest informal planning began late 2021, price was soaring above \$60,000USD, everyone was wealthy and irrational, and we were seeing a massive hole in the market around privacy and security in the hosting space.

By the time the ink had dried on our formative documents, dated January 13th, another immense retrace in price had occurred, and we were beginning what would become an incredible deflation across the entire industry.

It is often said in Bitcoin that 'Hard times create strong men,' and after a year of industry innovation, we feel that we have become far stronger for our work in this space.

In the pages that follow, we will review our major achievements from the last 12 months, and how we transitioned our mandate from being a simple privacy oriented hosting company into what we believe is the top business for developing hosting best practices, leading industry research, and consultation for customers establishing operations.

Our hope is that you may review our founding story to determine a path that sets you up for success in the mining space. At the end of 2022 we could not be more bullish, and we're excited to share with you why.

As always, knowledge is power.

-the distributed hash team

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What follows will closely mirror the chronology of the founding, establishment, and electrification, of distributed hash via our flagship 1MW facility.

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# Establishment and Funding

distributed hash was officially formed January 13th, 2022 as a four person partnership. Each partner bought in an equal amount of Bitcoin to be held as company reserve and collateral. We formed the company without any expectation of profit taking for at least 18 to 24 months. Our expectations were that all revenues generated would be poured back into improvement and expansion over the course of the following years.

Additionally, distributed hash took on outside capital in the form of interest bearing debt from friends and family, and an Unchained Capital collateralized loan (collateralized by the partner buy-ins).

We learned two lessons almost immediately. The first was that we had brought on a partner who was not vision aligned, and the second was that our apparently comfortable position in our Unchained Capital loan would be threatened by market turmoil.

Both were expensive lessons.

After full team discussions, three partners bought out the fourth, non-aligned partner using additional personal Bitcoin. Our Unchained Capital loans would be threatened with margin calls, which we would resolve with additional capital and Bitcoin.

Both of these occurred in the earliest months of construction, and operation, and would not have been surmountable had it not been for the entrepreneurial experience of the team and their expert capital management.

## Major Lessons:

- Self-funding and debt were the most appropriate financial tools for our founding, which allowed us to move quickly to remove a partner who was not vision aligned.
- Using any form of leverage is a risk. We experienced this via margin calls we had to cover. The Unchained Capital tools are excellent, our timing was not.

# Site Planning

Our site location was researched and chosen for a few dominant reasons. Distance from major metropolitan areas, stable supply of base load power, favorable electrical rates, and favorable geographical risks with positive year round climate conditions.

Our flagship facility is a modified commercial warehouse. This proved to be our best beginning option for a number of reasons. We were able to utilize the mining facility for additional storage, shipping & receiving, and as a troubleshooting and repair center. Additionally, we were able to build out a facility that uses metered electrical rates instead of a fixed PPA. This protected the business, allowing us a 'ramp-up' period where we would only be charged for electricity consumed (up to transformer capacity). In the long run, however, a PPA is the more favorable arrangement.

Physical buildout was a challenge. Had it not been for 20 years of commercial building experience from one partner, we would have struggled greatly to get our facility approved and operational in a reasonable timeframe.

Her skills in coordinating with inbound materials suppliers for transformers, disconnects, and HVAC needs, as well as the City, Inspectors, and all required contract labor was masterful and is the main reason we are approved and operational today.

Our air cooling system is a 'room within a room' structure that passes through the length of our facility. Cooling is facilitated by both maximal inbound airflow, as well as large commercial exhaust fans, which continuously draw out hot air. All of this is networked via redundant internet systems and a monitored security feed and third party security company.

## Major Lessons:

- Experience matters in commercial building. Do NOT underestimate the value of these operational skills.
- Your initial build is not your final build. Your operation will grow and optimize over time. Expect this.

# Customer Offering

Our initial business thesis was that customers hashing with major companies were making serious compromises when it came to the risks of data breaches, and doxxed flows of sats. In the bull run, privacy was an afterthought we believed was underserved by the hosting market.

We shaped our initial language around a few key business principles, namely, respect for customer privacy, minimization of customer risk (via email lists, CRM lists, internal systems), and total transparency in customer experience (customers receive a private vLAN they can VPN into and personally audit the operation and performance of their hash at our facility).

We discovered very quickly that we had mis-identified the core market problem within hosting, namely, **absolute transparency** was the highest customer value we could provide. We discovered the hosting market was rife with operators who took customer money and delivered very little of what they promised in hash, uptime, or customer service. A fiat-minded, growth at all costs mindset, was creating a market that hurt small and medium sized miners.

In fact, our flagship facility was launched, in part, via our first customer. They were promised space for 100+ machines by an operator, but when launch date came, that operator hadn't completed their facility (In fact, it would be months until that facility was operational).

We leaned in on our value of absolute transparency and have operated since with the mindset that mining should never be 'plug and play', but should rather be treated like a complex business problem that we are solving with customers.

## Major Lessons:

- Customers DO care about privacy, but they care about absolute transparency and high quality customer service even more.
- Most operators during the 2020/2021 bull run over promised and under delivered.

# Research Begins

When we launched distributed hash we had no idea that we would soon be producing industry leading research in the space. Already, in our first short year of operation, we have built entirely new products for the industry (SEE: [Hashrate Assurance Program](#)) and piloted efficiency and longevity solutions with publicly traded mining companies (SEE: [The Effect of ASIC Exhaust Mining Pants](#)).

All three of the current distributed hash partners have a history of either academic or professional research, so treating our flagship facility as an opportunity to 'crunch the numbers' and optimize for various performance metrics came naturally.

We didn't know how our existing customers would respond to our inquiries to test new products and settings on their machines, but with the full transparency mentioned previously via VPN access, customers were universally excited to have distributed hash as a partner in making their operation function as efficiently and effectively as possible.

Our research operations could fill a short book with what we've learned over the last year. Our current thesis on research in the space is that every major operator has *someone* responsible for machine function and optimization, *however*, those individuals are typically so overwhelmed with simple deployment and up-time that they rarely, if ever, have time to experiment with various parts of the mining farm (whether that is HVAC efficiency, tuning, cabling, networking, under/over-clocking).

Our belief is that the importance of industry research will grow exponentially in the coming years, as farms turn their focus from getting up and running, to optimizing performance under various market conditions.

## Major Lessons:

- Customers want to know that you, as an operator, are running their machines to the fullest extent possible.
- Industry research is lacking, but growing massively in value.

# Management Tools and Implementations

Our research production over the year taught us that setting up an operation and making every machine hash is merely the first challenge of running a mining operation.

Once your transformers are powered up, networking, monitoring, outside partnerships for maintenance and repair, and internal innovation and tool building come into focus. We estimate current facilities that have not invested deeply in operational efficiency may be losing substantial amounts of capital, somewhere on the order of 25%–50%.

Our flagship facility was intentionally outfitted with extremely robust and already tested industrial switchgear (from Cisco), as well as multiple connectivity backups. Additionally, we utilize the open source tool PYASIC as the foundation of a custom facility monitoring system (a self built GUI and bot) that allows us continuous remote monitoring, that unlike existing third party tools, doesn't incur additional operational costs.

To solve the issue of machine part failure and replacement, we developed a relationship with the supplier, Kaboomracks, to both send us bench stock of common parts on hand for rapid repairs, and provide us with Hashrate Assurance machines. These machines can re-allocate hash to customers to maintain their total hashrate, even while a machine of theirs is down for repair.

After this year, we feel strongly that **all** upstart hosting operations (or even self mining operations), must begin to implement best practices around maintaining customer uptime, facilitating repairs, and utilizing the proper monitoring suites for maximal robustness and efficiency.

## Major Lessons:

- There are substantial gains to be made in facility efficiency.
- Third party relationships that provide meaningful ancillary services to customers should begin to take hold as industry best practice.

# The Future

While this year has been a substantial startup challenge, we wouldn't trade it for anything. These tightening conditions have allowed us to rapidly prototype the most necessary solutions for successful farms and happy customers.

It has been a gift to build in the bear market.

Presently, we see a mandate for 2023 to set the highest standard of customer service in the industry, and to establish ourselves as THE industry experts in site deployment, optimization, and management.

Our existing research and product developments are leading us into relationships with both large, publicly traded operations seeking efficiency, as well as small and mid sized operators looking to implement best practices and de-risk their operations. While it may appear on the surface otherwise, we believe this industry has leaps and bounds to go in both professionalization and operational efficiency.

We plan to lead the charge on both of these fronts with best in class research and product development.

## Major Lessons:

- Our mandate for 2023 is to set the highest standard of customer service in the industry, and to establish ourselves as THE industry experts in site deployment, optimization, and management.
- Industry professionalization and best practices will begin to take hold in 2023. We will work to establish these standards and best practices and improve overall operational competence in this space



## summary

*We hope the above helps to equip you with some of the knowledge needed to successfully identify growing trends in the mining and hosting industry.*

*Our belief at distributed hash is that customer education is the most valuable tool in this early market. Our goal is to help builders determine their particular goals effectively and to grow a business that works for them.*

*Whether you are home mining, setting up your own on grid operation, sending your machines to a host, or partnering with an oil and gas operator to buy stranded natural gas, you should work hard to fully understand the trends in this industry, and how they fit into your personal and business goals as a bitcoin miner.*

*Knowledge is power.*