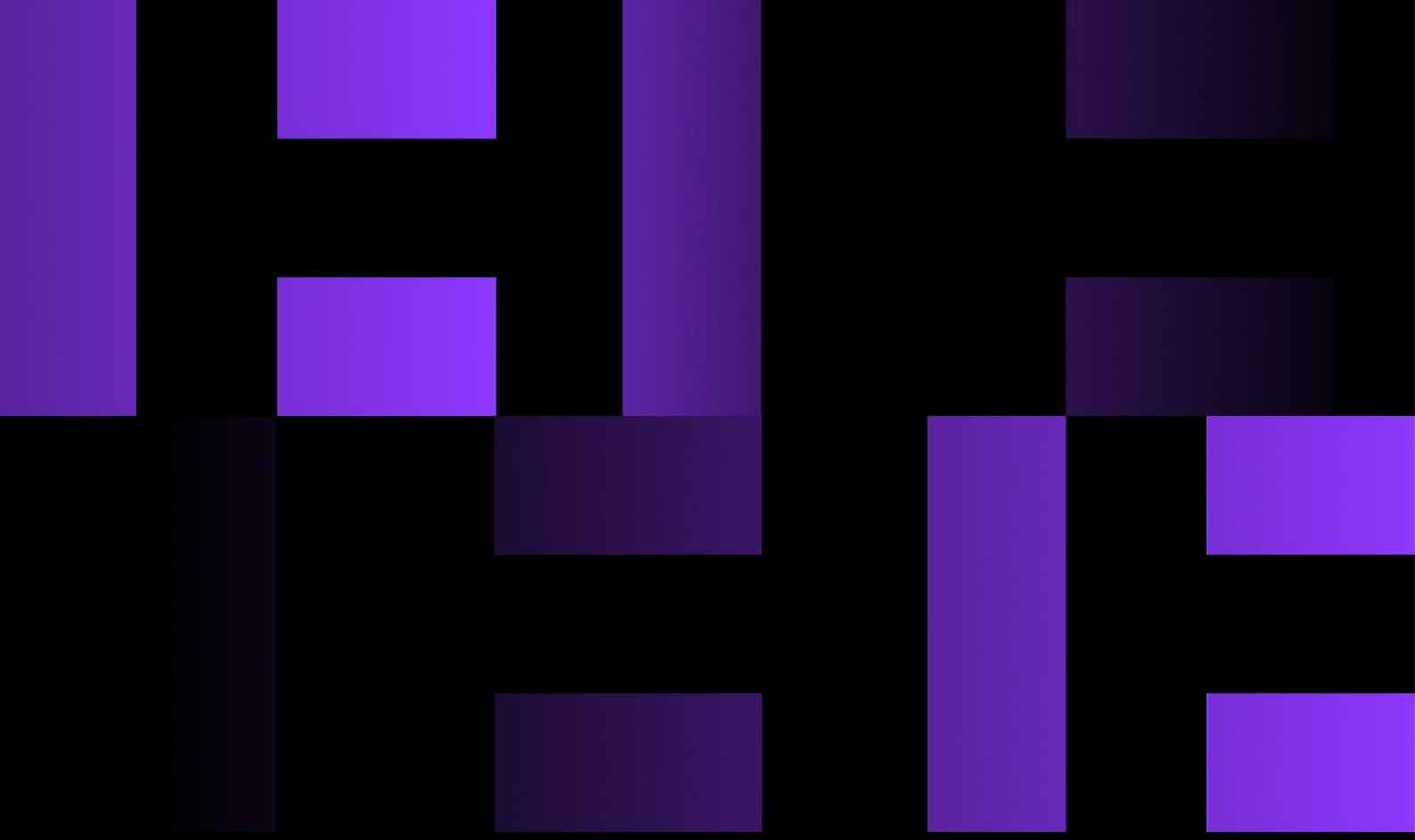

HATHOR LABS

2021 Annual Report

hathor

To our community,

Hathor reached many milestones in 2021. More than 80,000 non-fungible tokens (NFT) were issued on Hathor; 9 use cases launched their platform; more than 30 NFT collections were created; the Brazilian Securities Commission approved the first STO platform to run on Hathor; dozens of projects reached out to us to learn how to build on Hathor, and more than 400,000 transactions (we recently passed 600,000) were executed on the network. These numbers reflect what we value most: attracting use cases to our ecosystem.

But we are still in the early days of blockchain. Today, entrepreneurs seek amazing apps that can execute innovative business models on top of blockchains. Tomorrow, industries will reinvent themselves, and the largest companies in the world will be powered by blockchain. Hathor has the technology to be the backbone of these companies.

We have the opportunity to be the first choice among builders, considering larger players are still offering complex and expensive platforms. Our competitors have been working on innovation, but they have yet to deliver simplicity and low costs. Our goal is to consolidate and expand our digital assets position while further enhancing our network's features. We see valuable opportunities in the market we target, and excellent execution is the most important thing for establishing ourselves as a leading platform.

IT'S ALL ABOUT USE CASES

We understand that the best measure of our success is to be chosen as the premier blockchain platform by builders. It directly results from our ability to provide a solid and reliable platform where use cases can develop proof-of-concept and production-ready solutions in a cost-efficient and timely manner.

Hathor's vision is to be the first choice for builders when it comes to blockchain technology. We are here to simplify blockchain technology and push digital solutions further, offering better performance for use cases to reach larger audiences and attain higher profits.

Our decisions have always been consistent with this vision, and we measure our performance using metrics that are attractive for builders and use case growth. We have invested and will continue investing in expanding the number of use cases by providing the proper infrastructure to ensure builders a smooth and safe integration of their solutions with our blockchain.

Focusing primarily on use cases profoundly impacts how we weigh tradeoffs and make decisions. Here are the fundamentals behind our decision-making processes:

- Use cases come first! We always focus on delivering the most easy-to-use tools and supporting the use cases being built on Hathor.

- We consider network security to be the most critical aspect of the network. No use case, especially within large companies, will build their products on a protocol that does not

have a track record of reliability. Hence, network issues are always a top priority.

- We constantly invest in improving our technology, working hard behind the scenes to provide new features, tools, and pieces of software that increase our use cases' competitive advantage.
- We work silently on new technologies and announce them when they are real. We love to underpromise and overdeliver, surprising everyone with distinguished products.
- We love telling stories that inspire people and can be tested and executed right away.
- We direct our grant programs towards builders who show sustainability and profitability, supporting those that deliver consistent, successful work. We learn from both their successes and failures.
- We choose long-term growth rather than short-term market reactions.
- We focus on hiring the best and most talented people. We know our success depends on our team being capable of excellent execution.

The above reflects who we are and what we believe to be the best way to establish an enduring blockchain business.

INFRASTRUCTURE

During 2021, we upgraded our infrastructure to support our growth and improve our service levels:

- Our team grew from 6 to 19 people; we also enhanced our hiring and onboarding process and strengthened our management team.
- Our capacity for receiving new use cases grew significantly after setting up new processes and training material.
- We grew on the education front, releasing new pieces of documentation, preparing a GitBook to keep developers and use cases up to speed, releasing a video highlighting why Hathor is scalable, and finally preparing lectures which we presented at MIT in December of 2021.
- The network reliability for use cases grew considerably with a significant increase in the hash rate, and we became the third-largest among all sha256d proof-of-work networks. The hash rate reached a fantastic all-time high of 24Eh/s; f2pool, to date the largest mining pool globally, announced merged mining with HTR; other pools have already started integrating with us, and they will make their announcements at their own time.
- We vastly expanded our network monitoring to both support our enterprise and our use cases. This work behind the scenes is precious for builders and developers but, more often than not, goes unnoticed by the community.
- Hathor's full node was improved in many ways after releasing 12 new versions. These improvements covered new APIs for use cases, security updates, and tools for integrations, among other improvements, all crucial for use cases since they must run their own full nodes for integrations.

- The ecosystem available for builders has grown in many areas. Ledger added support for HTR tokens; Simplex announced VISA cards backed by HTR tokens; Parfin added support for custody of tokens created on Hathor; we joined the Messari Registry, and Ankr started offering cloud-based Hathor full nodes for builders.
- Hathor Wallet Headless, used mainly by use cases and exchanges, has continually evolved to fulfill the constantly changing needs of developers. We added new APIs and support for NFTs, empowering many use cases to integrate platforms with Hathor.
- Making sure the network was up and running smoothly took a significant part of our working time in 2021, and we will keep investing in this task in the years ahead.

All these deliverables present a more reliable and trustworthy platform for use cases.

COMMUNITY RELATIONS

Respect for our community is fundamental for sustainable growth. Our community supports us in many ways, and we are very thankful to have you with us. You trust our capacity to execute well and deliver technologies that will empower future industries. You also promote Hathor, increasing awareness and bringing more builders to the community.

We have been learning from our community since Hathor's mainnet was launched in January 2020. Since then, we have already experimented with several types of reports, but we feel most of them missed the mark. Ultimately, these reports concentrated on technical aspects instead of communicating what Hathor is all about: bringing value to builders. Even though our innovative technology is at the center of Hathor, we are driven by delivering high quality services to use cases. From now on, we will concentrate our reports in that direction.

You can expect to see quarterly and annual reports. Quarterly reports will be published within 45 days of the end of the quarter, and annual reports will be published within 90 days of the end of the year. Therefore, there will be three quarterly reports followed by an annual report.

NANO CONTRACTS

We understand and agree Nano Contracts are a highly expected feature, and we would like to take this opportunity to bring everyone up to speed on their development status.

We worked on initial designs and proofs of concept for Nano Contracts in 2021. Due to business opportunities that emerged during the year, requiring us to dedicate more of our resources to other areas, we temporarily paused the Nano Contracts development.

Doing so was strictly a business decision, and it did not hurt any use cases. On the contrary, we have onboarded and supported many projects that didn't need Nano Contracts and were already building on Hathor. If we hadn't prioritized as we did, we might not have had many of the use cases that we all love.

We agree that Nano Contracts are a piece of innovation that will help attract even more projects to Hathor. And we are looking forward to making them real just as much as

you do. To help us achieve this, we have grown our team with product managers and engineers who can take good care of our current builders and features while we have the time to work on Nano Contracts.

In 2022, I will work closely with a product manager to create the best tool for our builders. We have already started onboarding selected use cases who would like to use Nano Contracts to get their inputs and requirements. If you know about any projects which need Nano Contracts, particularly for DeFi related purposes, please ask them to get in touch with us.

OUR TEAM

Hathor's success in 2021 is the product of hard work from a talented and dedicated team. I'm honored to be part of this team and work side-by-side with such motivated people. Hiring and developing the best has been, and will always be, the key to our success.

It's not easy to work for a quickly expanding blockchain company. Expectations are high, and pressure can rise rapidly. On the other hand, we are building a blockchain platform that matters to our community, a technology that could transform industries, and a story worth telling. I'm thankful for our team's passion for Hathor.

GOALS FOR 2022

We are still learning how to bring more competitive advantages to our use cases through blockchain technology. Our goal remains to continue growing these use cases and delivering tools to support the builders behind them. This requires investment in education and development of key partners while we grow our ecosystem. We plan to provide new features to expand what can be built on top of Hathor and attract a broader range of new projects. A big part of our challenge is prioritizing our efforts and investments to deliver compelling value for builders.

We have learned so much since the launch of the mainnet in 2020. There are many challenges and risks ahead to make our long-term vision for Hathor a reality. However, we believe the impact of blockchains will be tremendous and will redefine entire industries. We feel optimistic about the future and very excited about what we want to achieve.

2021 was an incredible year where we laid the groundwork for the future. We are grateful for our community's support, the builders' trust, and our team's hard work. I feel great things are on the horizon.

Respectfully yours,

Marcelo Brogliato
Founder & Chief Technology Officer
Hathor Labs

March 2, 2022

HATHOR LABS
2021 Annual Report

BUSINESS

Disclaimer: *This Annual Report and the documents incorporated herein by reference contain forward-looking statements based on expectations and projections as of the date of publication. Actual results may differ materially from those expressed in forward-looking statements.*

Hathor Labs was incorporated in April 2019. We coordinated the launch of the Hathor Network on January 3, 2020.

Hathor Network is a public, distributed, and decentralized blockchain network that **we do not control**. It has no single point of failure, no single source of truth, and no one alone has the ability or power to make changes to the data stored on the blockchain.

Hathor Network has a native token called HTR. The HTR token is a utility token with two purposes: (i) it is a core part of the incentive structure that keeps the network secure, and (ii) it is used to access services provided by the blockchain. The HTR token is listed on several crypto exchanges around the world under the symbol "HTR".

Hathor Labs contributes to the continuing development, implementation, and maintenance of Hathor Network by designing and implementing different pieces of software, including but not limited to the full node, libraries, wallets, APIs, tools, utilities, and documentation.

As used herein, "Hathor," "we," "our," and similar terms refer to Hathor Labs unless the context indicates otherwise.

GENERAL

Hathor Labs is a blockchain technology company whose mission is to empower every organization in the world to achieve a competitive advantage using the Hathor Network blockchain.

We seek to be the first choice of blockchain technology for use cases, where three principles guide us:

- Finding legitimate use of blockchain in business models rather than for marketing purposes.
- Passion for invention.
- Simplifying complex technologies.

We serve builders and enterprises, miners and mining pools, exchanges, partners and developers, and our community. In addition, our primary product is the full node, which is a piece of software used to connect and interact with the Hathor Network blockchain.

Builders & Enterprises

We serve builders and enterprises through pieces of software used to integrate Hathor's blockchain technology with the enterprise's IT infrastructure. We design our daemons, libraries, and applications to support enterprises on the whole software development lifecycle, from the proof of concept to the production-ready solution.

Builders and enterprises that experiment with blockchain technology face a complex technology to master, expensive software engineers and technical staff, and unpredictable operational costs.

We seek to offer enterprises low entry barrier solutions to explore new business opportunities using blockchain technology as a competitive advantage. Hathor Network offers low-cost transactions, while our tools are designed for a fast learning curve with no need to understand the internals of blockchains.

Miners & Mining Pools

We serve miners through the full node and mining tools that allow them to mine blocks in exchange for HTR tokens, confirming new transactions and keeping the network safe and immutable.

Miners usually organize themselves into mining pools and are a fundamental piece of our ecosystem, being responsible for providing superior hash rates and protecting the network from attackers.

Hathor Network has a fast block propagation architecture, reducing the number of orphan blocks, therefore reducing energy waste and increasing profits for miners and mining pools.

Merged mining is a technology supported by Hathor Network that allows miners to mine HTR and a native token from another network simultaneously and without additional mining costs. For example, one can mine both HTR and BTC at the same time using the same equipment without having to dedicate ASIC mining hardware for only one network. With the same costs, they mine both HTR and BTC. Bitcoin is by far the most used network for merged mining with Hathor Network.

We seek to offer miners and mining pools easy setups, efficient mining operations, and higher profits, without cost increases thanks to merged mining.

Exchanges

We serve exchanges through the full node, safe wallets for custody, support from our integration team, and monitoring tools that allow them to quickly and safely integrate their infrastructure to the Hathor Network blockchain. This integration is a critical part of every listing of the HTR token.

Exchanges are an important part of Hathor Network's ecosystem, offering healthy and fair trading environments, hence increasing liquidity and providing an efficient market for the HTR token.

Partners & Developers

We serve partners and developers with training, educational content, and software development tools that drastically reduce their learning curve to implement safe integrations with Hathor Network.

Partners and developers offer their clients the ability to use Hathor Network and benefit from a safe blockchain with feeless transactions, reducing their clients' operating costs.

Community

We provide our community with safe wallets to store their tokens, free transaction mining services, and educational material.

HUMAN CAPITAL

Our team is critical to our mission of being the best blockchain for use cases. As of December 31, 2021, our team had 19 people on a full-time basis. Additionally, we utilize community leaders, moderators, and advisors to supplement our workforce.

As we started 2021 with a team of six people, we more than tripled our workforce throughout the year. We enhanced our capacity to recruit, develop, and retain world-changing talents, while we strengthened our administrative and management processes to keep our operations efficient.

A GLIMPSE OF OUR STRATEGY

We created Hathor Network to enable mass adoption of blockchain technology. We are still very early in this process, and only a few technically savvy people use blockchain today.

In our view, mass adoption will only happen when major companies with large user bases integrate their products with blockchains. In most cases, their users will not even notice using this technology, and they will only experience the benefits of blockchain, such as transparency, cost reduction, or superior efficiency.

That is our vision of the future and the primary reason Hathor was created.

We see two major problems in current blockchain platforms: scalability and complexity.

Scalability Challenge

Hathor Network was born out of our CTO Dr. Marcelo Brogliato's Ph.D. thesis on the scalability of blockchain. But how does the lack of scalability affect the final user? Simply put, higher transaction waiting times and fees rise when the in-flow of transactions is too high.

The blockchain industry has already experienced this problem even though it is still in the early days of adoption. A symptom of lack of scalability is the fact Ethereum's fees often surpass $30 per transaction.

In a future where most companies adopt blockchain technology, the volume of transactions will be much higher, and, as a consequence, so will waiting times and fees. This cost imposes a high entry barrier for most business models, especially given the unpredictability of fees.

Hathor's innovative scalable architecture allows transactions to be free[1] [2] . It allows blockchain technology to be adopted by a much larger fraction of the companies by solving the scalability problem.

This is the first hurdle we solve, and it is aligned with our goal to allow mass adoption of the technology.

Complexity Challenge

The complexity of current solutions imposes another high entry barrier. Current solutions are highly complex, and they are becoming more and more complex with so many workarounds to keep growing.

For enterprises, this complexity imposes two challenges:

1. Labor: Competition for qualified software engineers has been intense and increasing every year. In this context, hiring blockchain developers is an order of magnitude harder. Hence, developing a blockchain application, even the simplest ones, has become more and more expensive.

Thanks to Hathor Network's easy-to-use blockchain technology, companies can get developers with no blockchain background and quickly get them trained. There is no need to hire blockchain specialists.

2. Risk of loss of funds (hacks): The complexity of current solutions, particularly smart contracts, exposes applications to a large attack surface. In 2021 alone, $1.3 billion was stolen from DeFi projects[3]. These projects are not amateur or low-budget applications. On the contrary, many of them had the code audited by leading security companies. Solana's Ethereum bridge, which was hacked for over $300 million[4], certainly had funds and access to the best blockchain developers and audit companies worldwide. However, the problem is not with the personnel but rather in the original design of these smart contract platforms and their very high complexity.

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[1] How Hathor Scales: www.youtube.com/watch?v=6s3Hkog7bdc

[2] Hathor – Scalability Analysis: hathor-public-files.s3.amazonaws.com/Hathor+-+Scalability+Analysis.pdf

[3] www.coindesk.com/business/2022/01/13/funds-lost-to-defi-hacks-more-than-doubled-to-13b-in-2021-certik/

[4] www.cnbc.com/2022/02/02/320-million-stolen-from-wormhole-bridge-linking-solana-and-ethereum.html

Most enterprises surely cannot be exposed to this amount of risk; a bank or insurance company cannot risk having their assets permanently stolen. Hence, the negative impact is clear: the complexity and its associated risks drive use cases away from blockchain technologies.

With Hathor Network, we seek to reduce the complexity, thereby reducing the attack surface. Our tokenization feature is a good showcase: every token created on the network has the same safety standard as the network's native token, HTR. Token creators do not have to worry about it. This philosophy is present in all features available on the Hathor Network blockchain.

Obviously, there's a trade-off between flexibility and security. We do not support all functionalities existing in Ethereum, nor do we intend to. This requires a lot of complexity at the protocol level and is what exposes the network to attacks. We are counting on Pareto Principle here: 80% of the use cases will use only 20% of the features.

Our goal is to support the most relevant functionalities that most use cases will need. And by adding simple and native support, we reduce the complexity and attack surface of the applications running on top of the blockchain.

To sum up, Hathor fixes two major problems in this market:

- Scalability, which impacts confirmation times and transaction fees.
- Complexity, which impacts the security of blockchain applications and development costs

HATHOR NETWORK

Hathor is a scalable and easy-to-use blockchain for digital assets.

Hathor Network is a public, distributed, and decentralized blockchain network. It uses Proof-of-Work (PoW) as its consensus algorithm. It has no single point of failure, no single source of truth, and no one alone has the ability or power to make changes to the data stored on the blockchain.

Hathor Network has a new architecture, based on concepts from both directed acyclic graphs (DAG) and blockchain technology combined. This new architecture was created under heavy scientific and academic scrutiny, originally a research paper written by our CTO Dr. Marcelo Brogliato, and published as part of his Ph.D. thesis.

Hathor Network has the following main features:

- High scalability thanks to its novel architecture.
- Native support for token creation, i.e., users can create their custom tokens in less than a minute and without any technical background. The network also offers administrative tools for the token owner.
- Native support for atomic swaps. Multi-token transactions can be used to exchange two or more tokens at the same time. If the transaction is executed, the tokens are exchanged. Otherwise, the tokens are safely returned to their original owners. No risk. No intermediaries.
- No fees for regular transactions. Users can exchange tokens without paying a penny.
- Users can store their tokens in individual wallets using P2PKH addresses.
- Users can store their tokens in multisig wallets using P2SH addresses. A multisig wallet allows a group of people to control tokens together, requiring multiple signatures in order to transfer the tokens.
- Support for merged mining with sha256d-PoW networks, allowing miners to mine for two networks at the same time with no additional cost. Most miners use merged mining with Bitcoin, mining HTR and BTC simultaneously.

USE CASES & ADOPTION

Our vision is to be the first choice for any solution that wants to leverage blockchain technology. Supporting ongoing and in-development use cases is an essential part of our work to fulfill this vision.

Our business development and engineering teams have actively supported a number of projects that reached out to us, each in different stages of development. Some were still on the idea inception, while others had developers working on integrations.

In 2021, we reached ten use cases built by entrepreneurs on top of the Hathor Mainnet. These use cases trusted our technology to be a core part of their business models. To serve them, making sure the network is reliable and running without outages is a top priority for our team. One which requires constant work that many times goes unnoticed.

Fuelled by use cases, network usage grew significantly. In 2021 alone, there were 380,981 transactions and 143,094 tokens created on the network. Compared to 2020 (26,615 transactions and 444 tokens), that represents a growth of ~15x and ~3200x, respectively.

For comparison purposes, the average Ethereum transaction fee in 2021 was $28.60, meaning that the total number of transactions made on Hathor in 2021 would cost around $109 million on fees in Ethereum.

NON-FUNGIBLE TOKENS (NFTS)

The whole blockchain space experienced a fast-growing number of Non-Fungible Token (NFT) projects from creators worldwide. NFTs dominated the crypto space during 2021 and went mainstream, with several personalities purchasing NFTs from the most famous collections.

We took advantage of this trend by anticipating NFT support on Hathor Network. This decision paid off as we managed to capture a share of this market. About 140,000 NFTs were created on Hathor Network in 2021, and five marketplaces were launched to connect sellers and buyers.

For companies and entrepreneurs who plan to use NFTs in their business models, the Hathor blockchain offers easy-to-use tools that help create, manage, and display NFT's content.

The NFT creators that chose Hathor could benefit from meager costs for minting tokens (0.02 HTR per NFT), tools to automate tasks (from minting to delivery after payment), and feeless transactions. Users can audit these NFTs through Hathor Public Explorer, and the tokens can be safely stored in both software and hardware wallets.

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[5] NFT collections do not count as a use case in this instance. There were dozens of collections created on Hathor Network, but we only count the platforms as use cases.

There were a few notable collections launched on the network in 2021. 9Block started the NFT segment in Hathor Network by launching a collection from its co-founder and influencer Felipe Neto. Six unique NFTs were launched over the course of six weeks, with the final and rarest NFT quickly selling out its 50 units.

Later, the Anubians were the first 10,000 NFT generative art collection created on Hathor Network; a model made popular by CryptoPunks (on Ethereum). They were sold out in less than three days. Originally with a mint price of 40 HTR, one Anubian was later sold on the secondary market for 20,000 HTR.

The HorusNFT collection also had 10,000 unique pieces and was likewise sold out in 3 days. It was developed by the team behind HathorMarketplace. Besides the digital art collectible, HorusNFT owners are also rewarded 6.5% of the markeplace's fees.

The HTRPunks project deserves a special note here. It was created to compensate all community members who purchased the previous HathorPunks NFTs, whose team failed to deliver on the promises made. This shows the strength and good spirit of the Hathor Network community. Its public sale was also a success, with the 5,834 publicly available NFTs sold out in a record eight hours. An HTRPunk reached a record price of 4,200 HTR on the secondary market.

9Block also released a collection honoring the Brazilian medalists of the Tokyo Olympic Games. Ten of the athletes had their Olympic feat eternized on the Hathor blockchain. The artworks were created by renowned Brazilian artists in the comics universe, such as Mike Deodato, responsible for the traits of superheroes such as Hulk, Thor, and Spider-Man; and Luke Ross, whose main works include the comics Spectacular Spider-Man, Justice League and also the Star Wars line.

NFT Market Places

9Block
Play9 launched the non-fungible-token (NFT) platform 9Block. They chose Hathor Mainnet as the blockchain to create their NFTs and certificates. In 2021 they released eight collections totaling 53 NFTs issued on our Mainnet.

Play9 was co-founded by Felipe Neto, one of the most successful Brazilian digital influencers, with 43.9M followers on YouTube and 14.5M followers on Twitter.

HathorMarketplace
The first and one of the leading NFT marketplaces created on Hathor Network, HathorMarketplace was created by a community-led team.

It currently has over 3,000 NFTs listed and has transacted more than 1,000,000 HTR from the start.

Users can easily list, trade, search, and filter NFTs by features. The marketplace also displays valuable metrics for each NFT collection, such as floor price and highest sale price, and ranking the collections by trade volume.

Kickoff Music

KickOff Music is a platform for creating new and exclusive digital experiences in the music industry. It was born from the vision of professionals with more than 20 years in this industry.

On KickOff, artists can create:

- Music NFTs, exclusive and certified digital items;
- Fan Tokens, items that link the artist's promotional actions to their marketing actions;

NileSwap

Nileswap, one of the main NFT marketplaces on Hathor Network, was created by a community-led team following the successful launch of the Anubians NFT collection.

In 2 months since launch, there have been over 4,000 NFTs sold in its secondary market, more than 350,000 in volume, and the highest bid was 4,200 HTRs for an NFT.

The platform also offers a launchpad, where projects can easily mint an NFT collection and conduct a primary sale seamlessly. Throughout 2021, it concluded successful launches, including the sold-out Anubians and HTR Punks collections.

Dropull

Dropull is an NFT marketplace for digital collectibles. It started by creating exclusive drops representing in-game items in Cidade Alta, Latin America's largest GTA V RolePlay server.

Several large enterprises have created marketing campaigns inside the game, including iFood, Outback, Trident, Brahma, Tinder, and Jeep.

Dropull decided to build on Hathor Network not only for the low cost of minting NFTs and the gas-fee-free transactions, but also for easy and fast deployment of their solution. Their team quickly integrated their platform without any previous blockchain knowledge and experience.

Since their launch in October 2021, they have released three NFT drops, with 50, 100, and 500 items each.

DIGITAL ASSETS & OTHERS

Vórtx QR Tokenizadora (STO platform)

Security Token Offerings (STOs) combine blockchain technology with the requirements of regulated securities markets to support the liquidity of assets and wider availability of finance. STOs are typically the issuance of digital tokens in a blockchain environment in the form of regulated securities.

The Brazilian Securities Commission approved the first STO platform to run on Hathor Network. A key aspect of this STO is that it went through a lengthy analysis by the securities commission, including but not limited to an in-depth review of our technology.

Hathor Network will be used as the underlying blockchain technology for the tokenization of private bonds and other financial instruments. This platform is being developed by two relevant players in the Brazilian financial market, Vórtx and QR Capital.

The companies leading this process will release more information on the launch date, issued assets, and participants in due time. Hathor Labs remains involved to assist in designing, developing, and testing their integration with the Hathor Network blockchain.

This approval attests to the capacity and security of Hathor Network to support robust financial applications.

Affero Flow
Dubbed as the "Instagram of learning," Affero Flow was created by Afferolab, one of the leading South-American educational consulting groups focused on the innovation process for institutional clients.

Affero Flow offers content curated by experts and relevant research and content produced by Afferolab itself with machine learning recommendations for users.

Using our easy-tokenization features with no transaction costs, users will receive tokens for their participation on the platform, allowing Affero to map soft skills and use them to create customized learning experiences for the users.

Hathorswap
Developed by the team at HTR/FDT, Hathorswap is a peer-to-peer swapping tool built on top of Hathor Network. Their liquidity pools have token pairs with the HTR token.

Users can interact with Hathorswap in three ways:

- Create new liquidity pools for any token available on Hathor Network;
- Add liquidity to an existing liquidity pool, profiting from trading fees;
- Buy and sell their tokens through an existing liquidity pool;

Hathorswap is the first dApp to integrate with HathorPay and provides an easy-to-use experience for its users. For further information, visit their documentation page.

HathorPay
HathorPay is a web wallet for Hathor Network that is built and maintained by the team at HTR/FDT. It is compatible with Chrome, Brave, and Opera.

Web wallets, popularized by MetaMask, are an easy and convenient way to interact with web3 websites and dApps, including Hathorswap. Any platform can integrate with HathorPay and offer a seamless experience to their clients. All of this is powered by Hathor Network.

Faucet
A community member created the first HTR faucet following a grant application. It is available for both Hathor Network's mainnet and testnet.

Hathor Faucet allows users to receive HTR tokens for free. For newcomers, it is an excellent doorway into the universe of Hathor. Users can experience instant and feeless transactions coming straight to their wallets.

An open-source C# / .NET Client for Hathor Headless Wallet was created as part of the development.

ECOSYSTEM

Creating a striving blockchain ecosystem equals creating and connecting the building blocks to provide builders with all the tools to use the technology for what matters: immutability, transparency, and accountability.

Security is a top priority for us. Therefore, we were delighted to work alongside Ledger to have Hathor's token HTR secured by the world's number one hardware wallet.

Hardware wallets store all the sensitive data needed to access and transfer user funds in a secure way, isolated from the internet, computer, or smartphones, which are devices often targeted by hackers. That is why the Ledger integration is such an important piece of our ecosystem, so users can store their HTR tokens and NFTs in a safe device.

Speaking of custody, Parfin provides another fundamental piece to the Hathor Network ecosystem. They are one of the leading custodian agents specializing in connecting traditional and digital finance through API-based crypto brokerage services for digital banks, investment platforms, and OTC desks.

For companies that handle high-value assets, having a custodian is highly desirable. And for use cases in regulated markets, custodians are often required. Having a compliant custodian in our ecosystem is essential to enable these use cases, such as the STO platform, to run on Hathor Network.

After being added to CoinMarketCap, CoinGecko, CoinPaprika, and TradingView in 2020, we made sure that all data from Hathor Network would be available at Messari. This exposes Hathor to a range of institutional and financial analysts, with a specialized and sophisticated audience of over 100,000 blockchain enthusiasts that use the platform daily.

Messari is the number one source for investors, regulators, and the public to make sense of cryptocurrencies. It offers data tools to drive informed decision-making and investment for a very strategic audience for Hathor Network.

Our partnership with Ankr provided full nodes as a service to any builder who wants to develop on Hathor. It empowers users and use cases to spawn a dedicated full node with one click and no need to do monitoring and maintenance.

Last but not least, Simplex announced VISA cards backed by HTR tokens. Akin to a regular bank account, anyone can spend their coins directly from this debit card, simply converting HTR to EUR using the app. It will at first be available for European countries in Q2/2022.

Simplex also integrated Hathor as a fiat on-ramp platform. It is already available on our website, bringing a whole new wave of liquidity to Hathor. This means that anyone can get their HTRs directly to their wallet without the hassle of accessing an exchange.

A partnership with Simplex was a remarkable milestone for us. Simplex is one of the leading companies of fiat to crypto infrastructure, providing services to industry leaders such as Binance, BitPay, and Paxos. A highly compliant partner in this segment was necessary given the risks of crypto regulations.

2021 also marked an increase in community participation in creating tools and improving our code. Maurício Nunes, from our Brazilian community, submitted an improvement and a fix for our mobile wallet. On top of that, he created a fantastic Unity plugin to send HTR or custom tokens from within games.

After successfully launching many NFT collections, creators were excited to have more features when launching new NFTs. One community member proposed an enhancement in our NFT RFC standard to empower new collections in Hathor Network. The proposal would add new standards for royalties and collection references for the metadata of an NFT. There is also a very useful NFT focused python package that allows users to easily mint NFT in batches. And also a fork for Hathor Network of the famous HashLips Art Engine for creating generative art.

On the education front, there were significant developments. Apart from our team's direct support to use cases and builders, we improved our documentation. The key piece in this initiative was our GitBook, a central hub where the most relevant topics for use cases are dissected, as well as containing detailed guides for running the key pieces of software when building on Hathor Network. This should greatly reduce onboarding time for new developers.

We also released a video explaining Hathor Network's innovative architecture and how it scales compared to traditional blockchains. The video has a visual representation of how transactions are verified and confirmed in the Bitcoin and Ethereum networks, highlighting the limits that these blockchains have. It then explains how the same process happens in Hathor Network. In around 3 minutes, the video can illustrate years of study behind Hathor Network's whitepaper and why its innovative architecture scales.

Finally, our CTO, Dr. Marcelo Brogliato, presented two lectures at MIT in December of 2021, which are available online (lesson 1 and lesson 2). The first lecture is an introduction to blockchain technology and how it can be applied. In the end, an NFT for the lesson was created using Hathor's easy-to-use wallet feature. The second lecture dives deep into more advanced blockchain concepts and how to develop a proof-of-concept on Hathor Network. It ends with a comparison of Hathor, Bitcoin, and Ethereum architectures and how they scale.

Grants program

2021 marked the first edition of our Grants Program. The goal was to promote and support projects that could help accelerate Hathor Network's growth and general utilization.

A secondary but fundamental goal was learning, as this was the first program where Hathor Labs would financially support other projects. We wanted to understand how to attract suitable projects and builders and how to follow up on development.

The program received 20+ applications. From those, two projects had clear visions, schedules, deliverables, and a good fit with our Grants Program and, therefore, received a grant.

Faucet

The first project was the Hathor Faucet. Faucet websites are standard for crypto projects, where users can get a small amount of the token for testing purposes (fun fact: the first BTC faucet would give away 5 BTC per user).

A community member also involved with the NileSwap project, Michiel Post, developed this project by himself.

When applying for the grant, Michiel said: “Hathor is a user and developer-friendly blockchain project. We want to support this vision and make the distribution of custom tokens accessible to everybody. The faucet is the first step, but we’re planning on more ways to distribute your tokens.”

The faucet is online at gethathor.com and works for the mainnet and testnet. The code is open source, which might be a reference for projects that want to integrate with Hathor. And as part of the development, a C# / .NET Client was created for the Hathor Wallet Headless.

WorkAxle

WorkAxle is a workforce management software that specializes in medium to large enterprises. They tackle complex workforce management rules and provide innovative scheduling models and labor forecasting, labor optimization, and advanced time and attendance offerings.

WorkAxle applied for a grant to develop a rewards and recognition component. It enables their existing client base to create and distribute company tokens via an automatic rule builder. Later, users can redeem those tokens in an in-app store for items.

According to the applicants from WorkAxle: “Extending and modernizing rewards in the workforce management space was always desirable. Same-day payout using blockchain and crypto has been the company’s long-term goal, but there were always issues regarding fees for our end users where the model was unsustainable. We had discovered Hathor over a year ago and have decided that everything was finally possible using the Hathor Network as our experience in the app will be seamless and feeless due to speed and ease of use.”

By the end of 2021, the integration with their existing management software is still ongoing. An initial implementation is ready, but WorkAxle plans to do a refactor before releasing the blockchain integration publicly.

A few use cases talking to our business development team were also an excellent fit for the Grants Program, although they needed better structuring and fine-tuning of their ideas. To help them, we executed a business structuring workshop collaborating with Herman Bessler, Co-Founder, and Partner of the venture studio Templo Ventures.

After the workshop, projects continued collaborating with our business development team. Two use cases were able to develop their projects better and benefited from our support on the Grants Program, even if not directly with funding: KickOff Music and Quizzard.

KickOff is live, and we presented the company in the use cases section of this report. Quizzard is still under development and consists of a platform for engaging with fans through tokenized rewards for their interaction.

LISTINGS & EXCHANGES

Listings are crucial for Hathor's ecosystem development, increasing awareness of Hathor's blockchain and providing liquidity to miners, use cases, and traders.

Exchanges serve as liquidity providers not only for traders but also for use cases and ecosystem partners. They are a necessary gateway for use cases that need to purchase HTR to create custom tokens on Hathor Network. Other ecosystem partners might also require liquidity providers for their solutions.

A good example here is Simplex, which offers a fiat on-ramp solution that depends on instant liquidation across several exchanges.

Exchanges also help building awareness for Hathor Network, as the HTR token is featured on marketing campaigns run by the exchanges. These campaigns expose Hathor to new communities, strengthening our brand and reputation.

In 2021, the HTR token was listed on seven other exchanges: KuCoin, AscendEX, CoinEx, Coinmetro, Bitrue, Gate.io, and CoinSpot. The following pairs are available among these exchanges: HTR/USDT, HTR/BTC, and HTR/EUR. Together with previous listings on qTrade.io and ViteX, the HTR token is available in nine exchanges worldwide.

Being listed in two of the top-10 global exchanges positions HTR as a solid digital asset in the space.

All these exchanges that listed HTR are ready to also list any custom token created on the Hathor Mainnet,reducing the listing effort for partners and use cases who would like to have their own tokens listed on exchanges.

In 2021, Kucoin was the most relevant exchange for the HTR token. It was where most of the trading volume happened. In December, following a strong trading volume, HTR was placed in the KuCoin's Plus area.

Hathor Network reached the mark of being among the 200 most valuable blockchains during the year (in terms of market cap), reaching an all-time high daily volume of $40M and a market cap of $450M, according to CoinMarketCap.

COMMUNITY & COMMUNICATIONS

Hathor Network blockchain is not the only thing that we designed for scaling. 2021 represented a crucial year for the Hathorian community. We dedicated a significant level of importance towards implementing new systems that provide our community with a more in-depth experience and help it scale to greater heights.

By hiring our first Global Community Manager, we began the construction of the framework that will allow us to reach every corner of the world. It was important to develop several key actions that will be fundamental for the next phase in expanding our community.

Our initial step was to create Community Management manuals to help onboard and prepare our channel admins. These manuals are the go-to, updated references for our admins to offer timely and accurate responses to our community. This makes for great consistency in customer support. We want to make sure the community has the clearest set of knowledge about Hathor as well as reliable answers to all of their questions.

With the launch of our first Community Program came another level of community growth and interaction as we were able to commission dedicated Community Leaders to drive our newly opened regional channels. We now have contributors from many areas, including translators, article writers, and community leaders, to help advance our mission to make Hathor Network a global community.

In 2021, we expanded our presence in Spanish, Russian, French, Turkish, and Indian channels. Together with English and Portuguese, we can proudly say that our Community Leaders are part of vivid communities in seven languages.

By implementing internal workflow systems, we made sure that our team was in synergy to provide our community with updates regarding all relevant areas in Hathor. We built unique initiatives to keep our community informed, engaged, and excited about what we are building, including but not limited to Hathor Theme Weeks, Hathor Sessions, and Snapshot.

Hathor Theme Week (HTW) is a community event that brings deep discussions regarding the biggest trends in the blockchain and crypto space. It comprises an entire week dedicated to a topic where we present a unique, engaging activity to generate a daily buzz in our channels. The aim is to educate the community about the chosen topic and relate it to the building experience on Hathor. We were delighted to present an NFT Week on Hathor for our first edition.

With the boom of NFT projects currently being built on Hathor, there was no doubt that this was the best choice for our first edition of HTW. Community members poured in to participate in the activities each day on our Discord, Telegram, and Twitter. We are still having fun going back to some of the memes submitted for our NFT Meme War competition, where the three most community-voted memes were awarded a special first-ever Hathor Network NFT.

The highlight of this wonderful week goes to our Hathor Sessions episode on Discord Stage with 23 NFT projects building on Hathor. We had the honor of hosting a live interview with

each of the builders behind these great collections. The event was such a success that our room was full for over three and a half hours of continuous discussion.

HTW and Hathor Sessions are great initiatives for active members of the community that spend a great deal of time in our chats. We also offer Snapshots, a quick and fun periodic community letter covering everything happening on Hathor, written by our Community Manager. We go the extra mile to ensure people do not miss a thing from Hathor.

We also structured our Social Media and Content Management department, which led to an almost 10x growth of our Twitter in one year. In addition to this, we introduced an Instagram account providing visual content about Hathor, while developing longer and deeper educational content for our Youtube.

Fostering a vibrant community is one of the cornerstones for the adoption of Hathor Network and setting these frameworks in place is only the beginning of a great future.

We have come a long way to over 13,000 members on our Telegram channel and 8,000+ members on our Discord from several places around the globe, including an unofficial Chinese channel. Our team has an enormous appreciation for the members that have been with us since the beginning of this incredible journey, and we are constantly working on continuing this expansion.

Source	**Followers** Jan/21	**Followers** Dec/21	**Interaction**
Twitter	7,520	57,330	**June-Dec**: 16.1M impressions, 561,186 engagements.
Linkedin	189	1,008	**Jan-Dec:** 58,135 impressions, 4,514 engagements, 2,062 clicks.
Instagram	N/A	1,631	**Jan-Dec:** 39,047 impressions, 3,001 engagements.
Youtube	200	2,000	**Jan-Dec:** 51,200 views, 1,500 watched hours, 349,500 impressions.

MEDIA PRESENCE

Hathor Network was featured in various respected media outlets in 2021. They covered our technology and scalability potentials, use case releases, new products, ecosystem partnership and other initiatives like Hathor Green.

There were over 40 publications in the format of video AMAs, spotlight articles, podcasts, press releases and social media outreaches, giving more strength to our main brand concept “Blockchain Made Easy” in the global market.

We have made a selection of these main media clippings in cryptomarket, such as Yahoo! Finance, Business Insider, Cointelegraph, MarketWatch, BeInCrypto, Bitcoin.com, Block Talks, Folha de São Paulo, Valor Investe, CNN Brasil, Investing.com, Exame Future of Money.

International

- Cointelegraph
- Weixin
- Bixiao Bai
- Weixin
- Blockonomi
- BeInCrypto
- Bitcoin.com
- BusinessInsider
- NewsBTC
- TechBullion
- BitcoinerX
- AMBcrypto
- Yahoo
- Bitcoinist

Brazil

- BlockTalks
- Digital Money Informe
- CNN
- Investing.com
- Estadão E-Investidor
- Terra
- Folha de São Paulo
- Exame Future of Money
- CoinTelegraph [1]
- Tecnoblog
- Investing.com
- Valor Investe
- MegaWhat
- CoinTelegraph [2]
- CoinTelegraph [3]
- Yahoo E-sports
- Be in Crypto
- CointeTegraph [4]

MINING & NETWORK SECURITY

Being a proof-of-work blockchain, the network hash rate is essential for Hathor Network's security. The higher the hash rate, the harder it is to revert transactions and disrupt the network.

In 2021, there was a significant increase in the network's hash rate, and Hathor Network became the third-largest among all sha256d proof-of-work networks. The hash rate reached a fantastic all-time high of 24 exahash per second (EH/s).

This mainly came following our partnership with F2pool, a top-3 mining pool globally, which added support for merged mining with HTR. This is a substantial accomplishment for Hathor Network. Miners can now mine BTC and HTR without any extra software or hardware configuration by using one of the most trusted mining pools in the world.

2021 also marked the network's first halving event, on January 5. Block rewards reduced from 64 to 32 HTR per block, drastically reducing the amount of new HTR entering in circulation.

Another halving event happened on January 7, 2022, further reducing rewards to 16 HTR per block. The third and last halving event will take place in January 2023, when block rewards will drop to 8 HTR per block. From 2023 onwards, block rewards will remain at that level.

HATHOR GREEN

Environmental concerns surrounding crypto mining were a hot topic of discussion in 2021. Many pointed out that the use of energy for this purpose, especially BTC mining, is harmful to the planet. Crypto supporters, on the other hand, responded that the energy used is still a fraction of what's used by other industries, while increasingly moving towards the use of clean energy.

Hathor Labs has remained neutral in this debate. For starters, Hathor Network already has a very low carbon footprint by using merged mining. As explained before, this technology allows miners to secure Hathor Network's without extra energy usage.

However, one thing we do agree on is that increasing the use of clean energy in crypto mining is positive. If that can be done without harming the network security, all the better.

Hathor.Green is the first public initiative in the Environmental, Social, and Governance areas (ESG) from Hathor Labs to foster and support clean and renewable energy practices for Bitcoin and HTR mining. Hathor Green provides extra rewards to HTR miners who can prove they use clean energy sources.

This program targets two audiences:

- Miners, who can increase their revenue by earning extra HTR tokens.
- Use cases, who more and more want to make sure they are building on an environmentally-friendly network.

ENGINEERING & TECHNOLOGY

Our engineering offers a wide range of services, applications, APIs, infrastructure, libraries, tools, and monitoring to support a healthy and safe growth of Hathor Network and its ecosystem and community.

Hathor's ecosystem interacts daily with products and services developed and maintained by our engineers. They are classified into four categories: (i) full node, (ii) wallets, (iii) public explorer, and (iv) integrations.

In 2021, we significantly improved our IT infrastructure, processes, documentation, standard operating procedures, monitoring, alerting, log manager, continuous integration, continuous deployment, infrastructure as code, Kubernetes, and response time to incidents. We have also accelerated the onboarding of new engineers from three months to one month.

FULL NODE

The full node is the piece of software used to connect to and interact with Hathor Network. It executes all tasks necessary to synchronize with other peers in the network, validate blocks and transactions, and run the consensus algorithm.

In 2021, we can group the full node's projects into four categories: (i) synchronization protocol version 2, (ii) security improvements, (iii) infrastructure, and (iv) integration tools and tests. We released 12 new versions of the full node.

The synchronization protocol version 2 was the main project for the full node. This project is essential to keep up with the blockchain growth. Its benefits include reducing the time to synchronize fresh full nodes, reducing CPU and memory usage, and better managing the mempool. It is a long project, and we are close to getting it supported on Hathor mainnet. During the rollout, some full nodes will support both versions 1 and 2, working as a bridge for transactions and blocks to synchronize correctly.

The security improvements were focused on preventing DoS and DDoS attacks. Many protections were included to prevent malicious transaction scripts from consuming 100% of the CPU and freezing the network. Other protections were added to full node's APIs, timing out on slow response, limiting memory use, and improving the throttling mechanism.

On the infrastructure side, we considerably improved the deployment and monitoring tools for full nodes. These tools are used by exchanges, partners, use cases, miners, developers, and others who need to run a full node.

One of our primary goals is to provide tools to make Hathor Network as decentralized as possible. Reducing the minimum requirements to run a full node invites more and more people to run their full node and join the Hathor Network blockchain. With this in mind, we worked on a project to reduce overall full node memory use. More technically, the project moved some internal indexes from memory to disk.

Another project aimed to reduce the initialization time of full nodes. This project is important because the time to initialize a full node currently grows linearly with the blockchain. After it is deployed, the initialization time will be executed in almost constant time. These changes will be a major improvement for IT operations since it currently takes around 30 minutes and will be reduced to less than a minute.

Last but not least, the integration tools are useful to let builders securely integrate their pieces of software with the full node, keeping their database always in sync with the blockchain. We also developed a network simulator for integration tests where builders can deterministically run testing scenarios and validate if the integration is working correctly.

WALLETS

Our engineering team develops and maintains wallets for both desktops and mobile devices. The mobile wallet is currently available for iOS and Android; the desktop wallet is available for Windows, macOS, and Linux.

Both the mobile and the desktop wallets were fully refactored to add support for a new wallet service. We also added support for A/B testing with feature flags, allowing us to test new features properly before rolling them out to all of our users.

The desktop wallets gained support for NFT creations. As most NFTs created on Hathor Network used the IPFS to store their assets, we developed an integration between the desktop wallet and the IPFS network. This integration has evolved into an internal service to improve our users' experience when loading digital assets. Thanks to it, users can see their NFTs on a gallery inside the desktop wallet.

Due to some users experiencing a long wait to load their big wallets, we designed and implemented a new wallet service. The long wait happened because the wallets currently have to download all transactions every restart. This download gets slower and slower as more transactions are sent or received. The service was designed to allow any wallet to load almost instantly no matter the number of transactions and download only a few transactions. This project was a big one and is close to completion. It is currently under production tests and will be rolled out to our users after tests are completed.

We have finished the high-level and low-level design of atomic swaps for the desktop wallets; we have figured out all the technical details and are ready to implement it. Atomic swaps will enable users to safely exchange tokens among them without intermediaries. For instance, if Alice agrees to sell an NFT to Bob for 10 HTR, they can safely do it from the wallet without escrows or exchanges. For clarity, the Hathor Network has supported atomic swaps since it was launched in 2020; our libraries also already have support for atomic swaps. This design focuses on adding a user-friendly user interface to enable users to create atomic swaps directly in the desktop wallets.

Our wallet's implementation depends on a public transaction mining service to be able to send transactions. After a few unexpected downtimes, we designed and implemented a more reliable, stable, and scalable public transaction mining service infrastructure.

Support for Ledger

Even though we had developed and submitted the Hathor app for Ledger in February 2020, it took so long for Ledger's team to start reviewing it that we had to develop it all again from scratch in 2021.

The first version of the Hathor app had support to receive both HTR and custom tokens, but it could send HTR tokens only. It was approved by Ledger's team and was available for all of Ledger's users.

Then, we developed a second version with support for sending custom tokens as well, including NFTs. Ledger's team approved this version in January 2022, and it is already available for all Ledger users.

PUBLIC EXPLORER

The public explorer is a web view of the Hathor Network blockchain. It shows information about the network, peers, transactions, blocks, and addresses.

In 2021, we added support for NFTs, improved the network page, and improved the public explorer's scalability.

We added support for media visualization directly on the explorer. Users can see NFT images, videos, and documents directly from the token page on the explorer. This enabled a more friendly experience for NFT creators and holders on the network.

As most NFTs created on Hathor Network used IPFS to store their assets, we have developed an integration between the public explorer and the IPFS network. This integration has evolved into an internal service to improve our users' experience when loading digital assets.

The network page originally collected its data from one full node only. We have implemented support to collect data from multiple full nodes and present them individually or aggregated to the users. It is like a BGP Looking Glass but for full nodes.

INTEGRATION TOOLS

Integration tools are techniques, libraries, wallets, and applications used to develop and maintain external systems integrated with the Hathor Network blockchain. It is used by exchanges, partners, use cases, miners, and developers.

Our engineering team developed and maintains the following applications and libraries for integrations:

- Headless Wallet: it is a full-featured wallet without a user interface. It is fully controlled by an API HTTP.

- Wallet Library for Node.js: it comprises a set of utilities used by developers to create and modify transactions and blocks, communicate with full nodes, manage UTXOs, and do other tasks.
- Common Library for Python: it comprises a set of classes and utilities used by developers, similar to the Wallet Library for Node.js.

In 2021, our engineering team supported many integrations such as:

- Listing with KuCoin, CoinMetro, and AscendEX.
- The token custody with Parfin, enabling them to offer regulated custody services for HTR and custom tokens.
- The infrastructure provider Ankr, allowing users to spawn a full node with just a few clicks.
- The 9Block NFT marketplace, integrating with their Shopify store to automate the distribution of NFTs after payment is confirmed.

We have enhanced our applications and libraries to support all the above integrations. We have also produced snippets, guides, and training material. Our tools were improved so one can create a fully operational wallet connected to the testnet in a few minutes.

The Headless Wallet has continually evolved to fulfill the constantly growing needs of developers. It gained new APIs, more debugging tools, protections to prevent operational mistakes, Docker images, and support running on Kubernetes. It also gained full support for NFTs creation — and it was used to create hundreds of thousands of NFTs.

The Wallet Library for Node.js was refactored and reorganized to offer better interfaces and classes for developers. It gained classes to manipulate transactions, addresses, blocks, and manage UTXOs. We also added support to the creation of atomic swap transactions.

Both the Wallet Library and the Common Library for Python were enhanced to support NFTs.

Finally, we have prepared a high-level and low-level design to develop a bridge between Hathor Network and Ethereum. The design covers all the details to safely implement a bridge that would allow users to send and receive tokens between Hathor Network and Ethereum. A partner has been working on the development of this design since then.

NANO CONTRACTS

Our goal is to make Nano Contracts simple and safe — in our opinion, this represents what most smart contract solutions today are not. In line with our company vision, we will make Hathor Network the first choice for builders, and with the UX-focused approach that we are taking with Nano Contracts, we are broadening the current definition of a builder.

In 2021, we worked on documentation and high-level designs for Nano Contracts. Our RFC presents a technical overview of the solution, covering basic concepts such as blueprints,

fund control, state, validation time, and interaction between Nano Contracts and regular transactions. It also describes a couple of use case examples.

This high-level design for Nano Contracts answers many technical questions about the internals of Nano Contracts. It covers essential aspects of the interaction between the UTXO model of transactions and the account-based model of contracts.

There are pending design decisions that impact how Nano Contracts will work. These decisions will be made as we evolve towards a low-level design and a proof-of-concept testnet.

Here we present a more detailed view of what is inside our minds regarding Nano Contracts and the future.

Complexity vs. functionality

We believe that by reducing the complexity level, we are opening the doors to lots of experimenting, and we are excited to see what new use cases will emerge from this! We believe our community of builders and users will appreciate the new creator tools at their disposal.

Feature creep can be dangerous if we allow it into our product. As some of the older blockchain networks are now beginning to realize, an ever-increasing protocol complexity is difficult to stop, almost impossible to reverse, and could eventually become a serious threat to the network because adding complexity adds risk. Creating workarounds to temporarily solve scalability issues to keep growing as a network adds complexity and, thereby, also risks.

EVM compatibility and Turing completeness are needed if a Network aims to support every use case out there. However, both features are responsible for adding complexity and risk to blockchains.

At Hathor, we want to move in the opposite direction from most other networks. We believe there is a gap in the market today that we can fill by striking the right balance between complexity and functionality and delivering a user experience that far exceeds what is available today on other chains.

To achieve this, we need to minimize complexity and risk while still building useful solutions to most people. This requires difficult and constant tradeoffs between complexity and protocol functionality. However, we believe that we have a good understanding of our main purpose and that we can manage our complexity accordingly.

What are Nano Contracts?

Our vision at Hathor is to be the number one choice for builders in blockchain technology. What does that mean? Moreover, who are the builders? To ensure that we are all on the same page, let's start by explaining the concept of Nano Contracts.

Nano Contracts are simplified smart contracts that will require little or no coding knowledge to set up in their simplest form. We seek to offer an easy-to-use and intuitive user interface in the wallets to enable anyone to configure a contract.

There will be a set of pre-made Nano Contract blueprints that anyone can configure. A Nano Contract is an instance of a blueprint like an object is an instance of a class in object-oriented programming languages.

These blueprints will be like Nano Contract templates, and using them will be as simple as selecting a blueprint and configuring the variables for your contract. There will be a selection of blueprints available catered toward different use cases.

Nano Contracts will be natively built into the protocol itself, like custom tokens on Hathor Network. Having native tokens and contracts means you get the same level of security for all assets issued on the network, mitigating the risk of bugs and security issues that we see too often with custom development on other platforms.

The level of transparency and pre-configured native functionality that we aim for leaves a lot less room for exploits and developer blunders, creating a safer and more user-friendly ecosystem for all participants.

The legacy industries

Perhaps most importantly, we believe this approach to smart contracts will be a door-opener for risk-averse legacy companies looking for a safe way to explore blockchain technology.

These are businesses operating across different industries and sectors, usually with limited technical resources and understanding of the technology. They often find themselves in an exploratory phase, seeking information about blockchain and how other businesses are using it to solve problems similar to their own.

Often uneducated and with tight budgets, they prefer to do as little development as possible and focus only on their core activities and business value. The technical complexities and operational overhead involved in creating, configuring, and operating a blockchain integration and maintaining its infrastructure often create barriers for these companies.

Launching their project in Hathor's low/no-code environment lets these less technical businesses launch an MVP with minimal hassle to test their hypothesis quickly. They can experiment with how their software integrates with a blockchain at very low and predictable costs and where the intersections could lead.

Who are the builders?

Going back to our vision of attracting builders to Hathor, with Nano Contracts, it seems clear that the definition of a builder is about to be expanded. A builder on Hathor is no longer just the engineer working at a big enterprise or the hobby developer working out of his mom's basement, but it is any crypto enthusiast who owns some HTR and has downloaded our wallet.