# TOP 50 REPORT 2021

**ZUG, 25TH JANUARY 2022**

The blockchain industry in Crypto Valley, Switzerland and Liechtenstein analyzed and visualized.

pwc

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# CRYPTO VALLEY, THE GLOBAL LEADER

# SUMMARY

### Key Data

- Crypto Valley Top 50 companies have a combined value of $611.8B (December 2021)
- The valuation of the Crypto Valley Top 50 increased by 464%, from $108.4B (December 2020) to $611.8B
- Total number of firms in Crypto Valley is 1,128, an increase of 18% from 960 (December 2020)
- In Crypto Valley (Switzerland and Liechtenstein), total employment by blockchain companies increased to 6,002. This is a substantial growth of 16% from 5,184 (December 2020)
- The Top 50 companies in Crypto Valley have 1,010 employees, a change of 22% from 829 (December 2020)
- Crypto Valley now counts 14 Unicorns (i.e., projects valued at more than $1B) up from 8 at the end of 2020
- Of these there is 1 Hectocorn ($100bn+) and 3 Decacorns ($10bn+)

## KEY TAKEAWAYS

The adoption of cryptocurrencies in financial services and the emergence of new digital assets as investment classes, including DeFi and NFT offerings, have significantly increased the valuations and expansions of companies within Crypto Valley.

The thesis of Web 3 is that decentralization will drive economic activity, efficiency, and not yet anticipated business models in finance and other industries. Web 3 has been a key driving force of investment across the sector. The valuation increase of protocols, layer 2 solutions, and venture funding has been extraordinary.

In addition to large funding rounds, there were some significant first acquisitions; a crypto company by a legacy firm and a protocol acquisition by another protocol.

The attractive nature of Crypto Valley's regulatory framework and the expanse of crypto and blockchain experts, service providers, and academic institutions continue to drive flourishing activity within the region. Global businesses are choosing Crypto Valley as a home for their organizations. As a result, there has been an increase in the number of firms and employment within the region.

2021 saw the enactment of the DLT Law (distributed ledger technology) in Switzerland and the first listings of security tokens on regulated secondary markets.

Protocols in the region continued to push technological boundaries. As a result of the push forward, some protocols experienced a blackout because of "resource exhaustion," resulting in the denial of services to customers. Other protocols managed to succeed and are currently delivering on their roadmaps after years' worth of development activities. Switzerland and its legal system have continued to be attractive for layer 1 protocols, resulting in many successful raises which enable the development of robust interfaces with the real world.

The financial sector has seen a significant increase in the interest in digital assets by traditional investors. Financial firms in Europe and globally have recognized the importance of having a presence in Switzerland or Liechtenstein. Firms take advantage of Crypto Valley's regulatory landscape to achieve business models that are not possible in other jurisdictions.

Strong investor interest in the key players of Crypto Valley resulted in large financing rounds and acquisitions. In addition, the expansion of global players with personnel in the market was significant. The newly enacted DLT Law will drive further expansion of the sector. Some of the largest DeFi protocols globally have made their home in Switzerland and recorded tremendous growth.

In other industry sectors, the news certainly was NFTs. In art, gaming, and certain physical goods, the deployment of NFTs as the ultimate bearer instrument has driven adoption for the broader public. While the largest exchanges in this area do not have their HQ in Switzerland or Liechtenstein, it can be expected that the traditional areas of strength in custody, security, and decentralization will ultimately make Crypto Valley a player in NFTs. Crypto Valley is already home to key creators and projects issuing and building NFTs.

In commodities, several firms have now deployed blockchain-based infrastructure. It is foreseeable that major global players

are placing their most critical applications and transactions in infrastructure built and run by firms in Crypto Valley.

The number of firms and employees increased significantly, with broad activities across all sectors as existing players add personnel and global firms establish local operations. Zug remains the heart of Crypto Valley, followed by Zurich and other clusters in Liechtenstein, Geneva, Ticino, Vaud, and Neuchatel. It is noteworthy that more than half of all Swiss Cantons now count more than 10 blockchain firms.

## ABOUT

The CV VC Top 50 Report is created by CV VC AG in collaboration with PwC Switzerland. The CV VC Top 50 is a periodical Report, now in its 7th edition. It focuses on market valuation developments from Crypto Valley, which includes Switzerland and Liechtenstein.

The report highlights the diverse blockchain and cryptocurrency ecosystem, which consists of startups, corporations, and government entities. The CV VC Top 50 Report and CV Maps are the authoritative curators of information on all blockchain companies active in Crypto Valley.



# EDITORIAL FROM MATHIAS RUCH

**Mathias Ruch,**
Founder & CEO,
CV VC

Crypto Valley reaffirms its standing as the most mature global blockchain hub with a record valuation of its Top 50 companies at over half a trillion USD ($611.8bn), boasting fourteen Unicorns. The CV VC Top 50 Report 2021 shows that Crypto Valley is flourishing because of its exemplary regulatory jurisdiction, an all-encompassing business environment, and a determined decentralized mindset.

Crypto Valley is not just a 'place' but, rather, a mindset. A mindset driven by a determination to transform the way the world interacts and transacts. It is exciting to show Crypto Valley's stable of 14 Unicorns to the world and to be part of a Swiss industry valued at over half a trillion USD.

Comparatively, the largest Swiss companies by market capitalization are valued at $2.2 trillion. Crypto Valley is closing in at nearly a quarter of this, and, for similar reasons, both are built with precision and determination. We are also very proud of the many Soonicorns currently grazing in the Alpine hills and welcome all of the new startups who, despite covid times, have continued to come and establish themselves here in Crypto Valley – the heartbeat of the global blockchain tech economy.

***Mathias Ruch,***
*Founder & CEO, CV VC*

# A BRIEF HISTORY OF CRYPTO VALLEY

The history of Crypto Valley has many known and unknown heroes. No single event or person can create such a thriving ecosystem, amend regulatory frameworks, or promote a location to hundreds, if not thousands, of entrepreneurs worldwide. Instead, many actions by individuals, government agencies, and companies helped create a unique set of historical circumstances over time. Crypto Valley is not just a 'place' but, in fact, a mindset. A mindset driven by a determination to transform the way the world interacts and transacts. It is doing so by enabling blockchain - the catalyst technology, to power global transformation.

In 2013, Bitcoin Suisse began as a trading company focusing on Bitcoin trading and moved its operations to Zug. Zug had long been reputed for its business-friendly atmosphere and still today, it remains home to many companies in commodities trading, pharmaceuticals, and finance. The arrival of bitcoin trading was just the beginning of 'Crypto Valley'.

A network of individuals from the Bitcoin and cryptography space soon joined this list. XAPO, the leading Bitcoin storage provider of the day, was the first company to take advantage of Switzerland's strong intellectual property rights protection and its rich heritage of financial security. Attracted by early Bitcoiners and the openness of regulatory authorities to enable technological innovation, a group of nerds rented a house outside Zug to complete the next generation of blockchain. Ethereum launched in 2015, creating yet another global technological disruption.

On May 3rd, 2016, the city of Zug announced that it would accept Bitcoin as a means of payment. The world took notice, and Zug subsequently became a prime location for doing business in crypto and locating blockchain-based companies. One of the key innovations on Ethereum is the ability to issue tokens with a specific function. The first use case for this technology was high-performance crowdfunding using programmable money. 2016 is also the year when the company publishing this report started its activities - CV VC with its ecosystem builder CV Labs.

The resulting "ICO boom" of 2017 and 2018 attracted many legitimate and, unfortunately, some not so legitimate projects. In early 2018, the Swiss supervisory body of financial markets (FINMA) stepped in, providing guidance and classifications for tokens, clarifying what was and what was not allowed under current law. This regulatory clarity spawned an entire industry of legal advisors, KYC/AML providers, brokers, financial intermediaries, custodians, and advisors.

In the financial services area, this development culminated in the approval of two crypto banks in Switzerland in 2019, Sygnum Bank and SEBA Bank.

Far from being content, a dedicated network of individuals, early-mover private firms, politicians, and vital public institutions set out to put in place the most advanced regulatory framework in the world. With solid support across the political spectrum and from the federal ministries of finance and economy, a new set of DLT legislation was drafted, which selectively amended fundamental laws and allowed the licensing of revolutionary new market infrastructure based on DLT.

These efforts resulted in the "DLT Legislation Act," which completes the digitization of Swiss Capital Markets. The result is the world's leading regulatory framework and stellar legal basis for issuing, trading, and owning digital assets, including securities.

In particular, the establishment of a new DLT trading license, which allows for issuance, trading, and post-trading under one license, has garnered the attention of many market participants. Notably, in the Swiss regulatory landscape, the Act includes the possibility for DLT Exchanges to signup retail clients. Thus, Switzerlands infrastructure for regulated secondary markets for digital assets and securities is now in place, with numerous mature players and tested rails. It appears likely that the world's leading regulated secondary markets for digital assets, including securities, will become a functioning reality in Switzerland.

The most recent developments with large exchanges announcing moves to Switzerland and early innovator firms being acquired by the most prominent players in the financial industry indicates that the history of Crypto Valley is just about to be written.

# VALUATION AND FUNDING IN CRYPTO VALLEY

In 2021, Crypto Valley saw a dramatic increase in valuations and strong activities around fundraising for new protocols. It also saw the continuation of the trend of fundraising in the financial sector (Sygnum Bank, SEBA Bank) and the first acquisition in the financial sector of an early adopter (Crypto Finance AG) through a large traditional firm, as well as the first acquisition of a protocol by another protocol (Hermez).

Overall, protocols saw a dramatic increase in valuations. The Crypto Valley Top 50 Companies are now valued at $611.8B, an increase of 464% from 12 months ago. Ethereum continues to be a large part of the valuation with $438.1B, an increase of 411%. Due to the regulatory clarity in Switzerland and Liechtenstein, several firms are building a presence, including Binance, Bitmex, Fireblocks, Copper, and others. It can be expected that, in addition to the strong basis for protocols, more firms in the financial services sector will establish entities in Switzerland.

The activities in protocol funding were significant. As blockchain technology finds more interest in broader application environments, we can see more projects for specific applications, e.g. privacy, oracles, NFTs, etc. Among the protocols which raised were Origyn ($40M), Anoma ($26M), Partisia ($20M), Aleph Zero ($14.8M), Nym ($13M), Radicle ($12M).

### Unicorns in Crypto Valley

The number of unicorns in Crypto Valley almost doubled in 2021, from 8 at the end of 2020 to 14 by the end of 2021. This reflects the strong appreciation of the market overall and that Switzerland and Liechtenstein continue to be the globally preferred jurisdictions for substantive projects. Protocols still dominate the list, but more traditional equity-based companies are nearing billion-dollar valuations.

## KEY VALUATIONS

| DECEMBER 31, 2019 | DECEMBER 31, 2020 | DECEMBER 31, 2021 |
|---|---|---|
| **$25.3B** Crypto Valley Top 50 | **$108.4B** Crypto Valley Top 50 | **$611.8B** Crypto Valley Top 50 |
| **$14.4B** Ethereum | **$85.6B** Ethereum | **$438.1B** Ethereum |
| **$10.8B** Top 50, excl. Ethereum | **$22.8B** Top 50, excl. Ethereum | **$173.8B** Top 50, excl. Ethereum |
| **4** Unicorns in Crypto Valley | **8** Unicorns in Crypto Valley | **14** Unicorns in Crypto Valley |

## 01 BLOCKCHAIN TECHNOLOGY

### Protocols

The blockchain trilemma (finding a balance between decentralization, security, and scalability) continues to frame the conversation in the developer circles. However, it seems that projects prefer speed above anything else at times. Many protocols have either touted fast block time or worked towards it. Seemingly, the market and developers placed reduced emphasis on security and decentralization, with very high developer activity and high valuations of somewhat centralized but high-speed protocols. This year also saw a more systematic and significant involvement of large Venture Capital at every stage of blockchain projects and their ecosystems.

Ethereum continues to be in its own category with continued high developer interest and a slow but steady roadmap toward its planned releases. Unfortunately, high transaction fees mean that many DeFi applications and NFT activities are no longer feasible when low-value transactions are involved.

After joining the CV VC Top 50 at the end of 2021, Solana has proven to be one of the hottest projects in the blockchain space. A large conference illustrated its fast-growing ecosystem. The optimism and confidence in this ecosystem seemed unbreakable: when Solana had to restart its network from genesis (i.e., the very initial), the price and engagement of the community increased.

Cardano has seen dramatic price increases during the year, and it released intelligent contracts on its chain in the third quarter. The project continues to be research-heavy, with many innovative ideas and a commitment to peer reviews.

Tezos is building several applications in the financial services and banking field, with the involvement of prominent players such as Société Général after having been selected by the Banque de France for its CBDC project.

Polkadot and its ecosystem, built by the Web3 Foundation, including Kusama (conceived initially as a testnet), have released parachain functionality and conducted auctions. This functionality represents the last core technology outlined in the original Polkadot Whitepaper almost five years ago.

Cosmos has attracted developer attention as the Tendermint consensus based chains started to scale. The promise of Cosmos chains connecting with each other in the original whitepaper is supposed to become a reality with the latest upgrades to the network.

NEAR has announced multiple programs to decentralize its validator network further and conducted its first large conference, NearCon. The protocol struck early deals on NFTs with several creators and offers easy-to-access resources for developers.

Internet Computer (launched by Dfinity), ICP, went live with its mainnet in May with great anticipation in the blockchain and investor community. It has since voted on improvements to its smart contracts infrastructure called 'canisters' and launched various grant programs.

Casper Network also launched in spring, with significant interest from a large community. The project focuses on the ease of integration of blockchain applications into existing application environments. The Casper Network, thanks to its ability to be upgraded and its key management features, has attracted numerous Web2 developers and enterprise applications.

Concordium successfully raised $36M (at a valuation of $1.45B) before its mainnet launch. The privacy-oriented blockchain provides an identity layer on the protocol level, working with the world's foremost security experts.

Skale has developed a following with integrators and Dapp developers, and the first dapps went live on its mainnet. The approach to offer a multichain solution in the Ethereum ecosystem to scale with its "Skale Chain" architecture is attracting significant interest.

It was only a matter of time until mergers and acquisitions would arrive in the blockchain space. Hermez, a layer two application focused on ZK-rollup privacy technology and scalability for transactions on Ethereum was acquired by Polygon (also known as Matic, a protocol) at an exchange rate of 3.5 Matic : 1 Hermez, valuing the merger at $250M on August 4, 2021.

Founding and fundraising activities in Crypto Valley for layer one blockchains continue to be significant (see above in Valuation and Funding). Switzerland and Liechtenstein continue to attract major players and teams of all sizes, and funding levels highlight Crypto Valley's critical role on a global scale.

Privacy-focused and security-focused protocols have a strong presence in Switzerland. Projects like hopr, Alephium, Nym, Concordium, Hermez, Veritic, Anoma, and other teams have taken advantage of Switzerland's solid academic and industry presence. In addition to Crypto Valley's focus on Blockchain, another cluster of world-leading companies has emerged in Switzerland - "Trust Valley," an initiative in Western Switzerland with large scale emphasis and investment in the Trust Economy by key players in security soft- and hardware.

NFTs (Non-Fungible Tokens) have taken the crypto world by storm in 2021. The application of blockchain technology to unique digitally secured representations of underlying digital code or files has proven to be an important use case. Almost all protocols provide infrastructure to deploy NFTs. However, technical and user experience challenges remain around security, storage, key management, retrieval, the linkage between tokens and underlying assets, etc. Many of these challenges are currently not well understood by the greater public and even technologists.

With the rise of Proof-of-Stake instead of Proof-of-Work blockchains (PoS vs. PoW), an entirely new industry has emerged that provides staking infrastructure and staking services in this area. Staking value is needed to secure these PoS networks. Compared to PoW mining, the speed of development of this industry is much faster, as the capital requirements are smaller than in PoW. Thus, it attracted significant VC investment in 2021 at elevated levels of valuation. Crypto Valley, one of the safest jurisdictions globally, seems to be a natural place for the staking industry to develop. However, at this time, only a few smaller staking players are currently established in Switzerland or Liechtenstein.

## 02 BLOCKCHAIN FINANCIAL INDUSTRY

The Financial Services industry has taken a significant step towards adopting blockchain technology. Traditional asset managers are adopting white-labeled solutions to offer their clients, legacy banks have started accepting clients with crypto wealth, and large incumbents are making their first acquisitions of crypto financial firms.

The new DLT Law will also enable structural innovation, including the emergence of new digital secondary markets where retail customers can be onboarded.

Bitcoin Suisse continues to lead the Swiss crypto-financial services industry, having achieved new all-time highs in terms of revenue and employees in 2021. Bitcoin Suisse is the leading Swiss broker and a key enabler of staking services, with over CHF 2 billion in assets staked. Their partnership with Worldline Global enables companies to use cryptocurrencies in their everyday payments.

SEBA Bank has built out key offerings to individual and institutional clients by launching an AMC (actively managed certificate) offering with GenTwo Digital. Its Earn platform allows clients to benefit from yield generating assets and staking. It plays a crucial role in CBDC projects as it was part of a project with the Banque de France and was named a finalist in a challenge by the MAS (Monetary Authority of Singapore). SEBA completed a large raise at the end of 2021.

Sygnum Bank expanded its offering as the first bank to offer ETH2.0 staking, new clients Bordier & Cie and VermögenZentrum, for B2B Banking Services and launching DeFi asset management on its structured products and trading platform. Sygnum tokenized a Picasso and a CryptoPunk NFT on its tokenization and secondary market platform. The Series B round closed in December 2021 and expanded Sygnum's Web3 offering and geographic reach.

Crypto Finance AG was acquired by Deutsche Börse Group, marking a significant milestone in digital assets entering the mainstream. A further signal on adoption is the ability to invest in the Crypto Market Index Fund by Crypto Finance through Finpension's solution for personal 3a pension assets.

21Shares continues to expand access to its wrapped products in various jurisdictions. After successfully launching a broad range of investment products in Switzerland followed by European exchanges, the firm now targets global expansion. Earlier in the year, one of the most prominent investors in the blockchain space, Cathie Wood, joined the parent company's board.

SwissBorg developed a sizeable retail customer base thanks to the ease of use of its app and anticipating the megatrend of investing in yield generating assets. In addition to its best price execution offering, it has developed on-chain optimization for profit. Of approximately $2B in assets on the platform, $1.2B is deployed on yield farming.

Legacy bank Vontobel continues to be a driving force in certificates, derivatives, and innovative products, providing exposure to the sector. Its expertise in structuring and infrastructure supports a large part of the market.

Swissquote, a leader in digital retail trading and banking, has successfully targeted the retail customer segment and is now offering its infrastructure to other banks. In addition, the bank has also announced the launch of its own native digital assets trading platform.

Early leaders in this space, such as Berner Kantonalbank and Hypothekarbank Lenzburg, are ahead in providing a tokenized trading venue (SMEX), which would complement the BEKB OTC-X trading venue. Taurus SA delivers the infrastructure for this and other key participants in blockchain-enabled capital markets. The company also has partnerships and commercial relations with MasterCard, Swissquote, and Aave.

Metaco, the provider of high security infrastructure, has acquired an impressive list of customers and investors alike and provides solutions to some of the largest financial services institutions and government entities exploring CBDCs.

Several players are entering the tokenized or DLT enabled secondary market space, and we can expect this trend to accelerate as the first DLT House Licenses are approved.

SDX has finally launched with a bond offering on its trading venue. Switzerland is showing its attractiveness as BitMEX has announced its move to Switzerland, mentioning all areas of crypto as their reason to do so. In addition, several other prominent global players are rumored to be following in their footsteps.

In the area of commodities, innovation may come much faster than anticipated. Axedras has quietly built an industry alliance and a productive solution that is already connecting and digitizing the precious metals industry. A collaboration between SEBA Bank and Argor-Heraeus resulted in the issuance of the SEBA Gold Token. Atomyze targets extensive commodity categories with its comprehensive platform to tokenize, track, and trade in commodities.

### Stablecoins

The discussion of stablecoins has taken many dimensions, and it is too large to be debated here. Following the heavy-handed approach by US Agencies and Legislators on any kind of private stablecoin issuance in Switzerland, it seems there is again movement and innovation.

Bitcoin Suisse has launched its stablecoin tied to CHF, the CryptoFranc (XCHF), which qualifies as a payment token and is usable as a transactional currency for the blockchain ecosystem. In addition, it also launched a payment network innovation together with Worldline to accept payments with crypto without ever touching crypto. Lightning payments are considered by many as the future of a bitcoin-based payments infrastructure. Over 85,000 merchants will have access to lightning transactions on a widely integrated platform.

Sygnum's Digital CHF (DCHF) stablecoin enables immediate settlement of transactions and reduces time, complexity, and the need for intermediaries. The DCHF has been used to settle electronic promissory notes, make e-commerce transactions, and leverage Sygnum's yield-generating DCHF fixed deposit product.

The SNB (Swiss National Bank) and BIS (Bank of International Settlements) worked on CBDCs and related transactions. "Project Helvetia" has been extended to include cross-border settlements called "Project Jura" with wholesale CBDC and tokenized commercial paper transacted on an SDX test platform.

### DeFi

Decentralized Finance, DeFi, has garnered a great deal of attention but is also fraught with risks. At this time, the financial applications of DeFi are mostly limited to (over-) collateralized lending and variations thereof. Crypto Valley is home to some of DeFi's most essential projects.

Aave Arc is the institutional access platform of Aave providing its technology and liquidity for whitelisted companies which operate in a regulated environment. Aave intends to bring its capabilities and liquidity to institutional players with this platform.

Curve.finance is one of the most prominent DeFi protocols. It provides liquidity with very low slippage. Like other DeFi protocols, Curve employs voting mechanisms to determine the distribution of rewards. The way decisions are made around the distributions of rewards and changes thereof has led to a phenomenon called "Curve Wars," which happen on several protocols over how the holders of governance tokens influence the rewards of specific transactions.

Liquity is a decentralized borrowing protocol, which lets users borrow against Ether and receive a payout in LUSD, the protocol's pegged stablecoin. Liquity attracted significant funds quickly, making it one of the top 10 DeFi protocols. The protocol is non-custodial, immutable, and governance-free.

## 03 BLOCKCHAIN OTHER INDUSTRIES

In the past years, applications for the supply chain seemed just about to be taking off for everyday use. However, 2021 turned out to be the year of NFTs, with prominent participants from the Crypto Valley Ecosystem. Still, commodities, art, gaming, and supply chain applications can be expected to impact existing business models and industry players fundamentally.

In NFT art, Hashmasks, a project with unique NFTs created and designed by a set of artists, garnered significant attention early in the year, quite a bit ahead of the general craze in NFTs.

Swiss artist Dario di Siena received a community-driven award at the NFT.NYC conference for his work in the space.

Swiss Post, supported by Inacta, a solution provider in data management and blockchain, issued an NFT combining traditional postage stamps with an NFT. The collection was sold out in three hours, making the launch an immediate success.

Blockchain Protocols have started to engage strategically with their communities and potential enterprise users to scale and drive innovation. Tezos is the infrastructure used by McLaren, the F1 Racing team, to launch NFTs for fans and collaborators. Casper Network launched its own set of CasperPunks to drive community engagement, and enterprise applications such as IPwe and Metacask have been built on its chain. NEAR Protocol has been providing learning resources to developers. Origyn Foundation, which uses the Internet Computer Protocol developed by the DFINITY Foundation, has announced applications around fine arts and NFTs.

Two large consortium-driven initiatives aim to change how industries operate as a whole. Atomyze aims to provide transformative blockchain-based applications to the commodity industry. Pharmaledger, an initiative that counts European-based pharma firms as members, is developing scalable blockchain applications in supply chains, clinical trials, and health data.

# THE BLOCKCHAIN TRILEMMA

**You've probably heard a variation on the old saying - "fast, good, cheap - pick two." If you're trying to get something built fast and cheap, it won't be very good; if it's good and cheap, it will likely take a long time to build; and if you want it fast and good, it certainly won't be cheap.**

Similarly, as decentralized distributed systems, blockchains have their version of this trilemma to deal with. The Blockchain (or Scalability) Trilemma, first postulated by Vitalik Buterin, states that blockchains would be decentralized, scalable, and secure in an ideal world. By decentralized, we mean that there should be no single entity or node which acts as an arbiter or source of truth above others; by scalable, we mean that it should be able to handle an increasing number of transactions in a reasonable timeframe; and by secure, we mean that the system should be able to continue operating as designed, without falling prey to malicious attacks or bugs. Note that just like the other trilemmas listed, none of these attributes are absolute, but rather degree. Sacrificing a little security for more scalability is possible. Doing so does not mean that the system is no longer secure or is infinitely scalable, but rather that it might be less secure or more scalable.

Much like the other trilemmas mentioned, having all of these features does not seem to be easily possible. A blockchain can be extremely scalable and secure, but naive versions usually depend on high levels of centralization. A large amount of control is often manifested by a centralized entity and/or very few nodes which can produce blocks. It is often the case that these nodes can only be run by authorized users. Increasing scalability can impact security - as a simple example, if one were to reduce the average Bitcoin block time dramatically, it would be easier to attempt a double-spend. This would make it easier to generate valid but non-canonical blocks and hide the canonical blocks from the user. Conversely, if one were to lengthen the time between Bitcoin blocks, it is easy to see how this would increase security but at the cost of scalability.

There are two main ways to cope with the Blockchain Trilemma. The first is simply to embrace it in one direction or another. This is how many first-generation blockchains dealt with the Blockchain Trilemma, even if they didn't have a word for it yet. Bitcoin, for instance, is very secure and stable. Still, at a cost of having very few transactions per second which sacrifices scalability for that security.

Many second-generation blockchains allowed smart contracts (allowing more attack vectors), reduced block production time, or made it more difficult for users to run nodes. These changes may have reduced security but increased scalability. While security is essential, there is such a thing as too much security. A congested network that only a few people can use is certainly not very useful. These networks were still embracing the Blockchain Trilemma but emphasizing a different element.

The other option to dealing with the Blockchain Trilemma is to find some clever way around it. This is how many third-generation blockchains are handling it. One method is to separate block production from verification - that is, having a smaller number of nodes that can produce blocks, but allowing another layer of nodes that can validate producers and ensure they are not cheating. This is the approach taken by optimistic rollups, for example, state, or payment channels, where some interactions between entities are kept off-chain and only the final result is applied to the blockchain itself. This is the mechanism used by Bitcoin's Lightning Network.

Another approach is changing the data structure from a traditional, linear blockchain.

An example would be the several decentralized systems using directed acyclic graphs (DAGs). Another possibility is the use of shards, where multiple blockchains all depend on a single blockchain for coordination. This is the approach taken by Ethereum 2.0 and Polkadot, albeit in different ways (homogenous and heterogenous sharding, respectively).

This is not an exhaustive list by any means, and blockchain developers are constantly thinking of and trying new approaches. Solving the Blockchain Trilemma promises to be an exciting area of engineering and research in the years to come.

**Bill Laboon**
Director of Education and Community,
Web3 Foundation (Polkadot)

# WHY SHARDING'S SECURITY, SCALABILITY, AND SIMPLICITY IS THE FUTURE OF BLOCKCHAIN.

**In little more than a decade since the whitepaper for Bitcoin was published online, the technology that underpinned this new type of network, blockchain, has given birth to thousands of new projects, ideas and communities collectively worth more than $2 trillion. But with such rapid success - the blockchain industry is now on par with some of the world's biggest economies - comes issues. Chief among them is scalability. As the popularity of a network increases, so do the demands placed upon it.**

In proof-of-work (PoW) blockchains like Bitcoin, there is a limit to how many transactions can be processed at any one time, collectively referred to as 'transactions per second,' or TPS. At times of congestion, networks using this model see considerable spikes in the cost of making a transaction on-chain. Since the introduction of proof-of-stake (PoS) in the last few years and its adoption by several leading blockchains, some energy efficiency and TPS issues have been mitigated. However, most popular PoS blockchains are still confronting high levels of congestion.

This means that users are frequently confronted with additional costs, which stifles a network's ability to scale. Some solutions have emerged, collectively referred to as 'layer 2' solutions, which look to process transactions separately, away from the main chain to alleviate pressure. But these too have limits to how many transactions they can handle. But in the decade since Bitcoin's whitepaper, an alternative vision for a blockchain has emerged - one involving fragmenting the blockchain or 'sharding' it to allow infinite scalability without compromising security. That solution is NEAR Protocol's unique sharded architecture, and it is called Nightshade.

## Infinite shards, infinite scale

In a sharded blockchain, instead of one continuous ledger, it is split into segments or shards. Each shard or segment is processed simultaneously, allowing for more transactions to be processed at once.

In some designs of sharding, part of the transaction is handed to a 'beacon chain', or central ledger that keeps track of all the transactions, but that can become congested and slow the network down.

Each shard processes transactions on NEAR's Nightshade design and keeps them together. This allows the NEAR blockchain to scale linearly with the number of shards, thereby satisfying the demand for transactions as more and more users start to use NEAR.

Ultimately it prepares NEAR for mass consumer adoption of billions of users.

## Sharding, but simple

In some sharded designs, developers have to re-formulate smart contracts to adapt to the new environment they sit in. This is not the case with NEAR. Similar to users, developers will not have to change existing processes to take advantage of the increase in speed and scalability.

Thanks to Nightshade's homogeneous design, developers are not exposed to the details of sharding from the very beginning, and they will remain unaffected by this upgrade. More specifically, cross-contract calls are the same regardless of whether two contracts are on the same shard or not.

## Dynamic efficiency

Critics have long argued that blockchain networks are inefficient, expending huge amounts of electricity, causing outages and even civil unrest in several countries worldwide.

NEAR, since its inception, has been designed with efficiency in mind. The network is officially certified as carbon neutral by the South Pole, a project that helps communities and companies reduce their carbon footprint. Sharding is designed to use only as much energy as it needs. NEAR is 200,000 times more energy-efficient than Bitcoin. For perspective, Bitcoin uses the same energy for 1 block - which it produces every 10 minutes - as NEAR does in 10 years.

Later this year, after a series of additional upgrades, the NEAR Protocol will dynamically adjust the number of shards based on demand. It will be able to scale up during busy periods and scale down during quieter ones.

In the first decade of blockchain, the technology helped re-imagine what could be achieved by a decentralized network. However, In the next decade, the bar will be set increasingly higher. Blockchains will need to deliver scalability, security, and simplicity to users while also being mindful of the environment.

The NEAR Protocol believes sharding is the key to meeting these expectations.

**Marieke Flament**
CEO, NEAR Protocol

# EMPLOYMENT IN CRYPTO VALLEY

Both the number of companies and employment continues to grow at a significant pace. The increase has been fueled by new companies relocating to Crypto Valley and existing players significantly expanding their presence. Both developments are encouraging as it indicates that the jurisdictions are highly attractive and that qualified staff are available and hired in the market.

Companies in Crypto Valley crossed the 1,000 mark for the first time and numbered 1,128 at the end of December 2021. This is an 18% increase compared to 960 the year prior, 168 more. The growth was driven in all areas, i.e., new protocols setting up shop, subsidiaries of prominent players in the financial sector, and other sectors benefiting from the advantages of Crypto Valley.

Employment grew significantly among the Crypto Valley Top 50 Companies. Overall, the number of Crypto Valley employees grew to over 6,000 at the end of 2022, a 16% increase over December 2021. The Crypto Valley Top 50 Companies grew employment to over 1,010 staff, an increase of 22% over December 2021.

Geographic distribution still shows an intense concentration of companies in traditional activity centers. However, blockchain companies are for the first time present in almost all Swiss Cantons, and more than half of all Cantons count more than 10 blockchain firms. Zug remains the heart of Crypto Valley with 528 companies, followed by Zurich with 204. The top clusters are Liechtenstein 85, Geneva 69, Ticino 50, Vaud 35, Neuchatel 27, Lucerne 22, Schwyz 19, St. Gallen and Aargau 12.

# REGULATORY ENVIRONMENT IN CRYPTO VALLEY

## Regulatory developments 2021 Switzerland

The Swiss Parliament approved the new Blockchain and Distributed Ledger Technology (DLT) Framework. Thereby, Switzerland has taken a further step to remain a key jurisdiction for FinTech, Blockchain, and DLT Technologies and respective projects. The new legal framework is expected to enter into force early in 2021.

This new DLT Framework delivers advanced regulatory solutions and specific amendments in key areas, namely Civil law, Insolvency law, and Financial market law, but also Anti-Money laundering regulation and International private law. These changes will bring increased legal certainty, remove obstacles surrounding blockchain applications, as well as reduce the risk of abuse.

In a nutshell, the core DLT activities that will benefit from the new DLT Framework are the following:

- (Security) Token Exchanges: Introduction of a new license type for trading venues focusing on digital assets (DLT Trading Facilities)
- Custody Service Provider: Clearer and lighter regulatory regime for digital asset custody providers
- Security Token Issuer: Introduction of a Civil law concept for digital securities ("asset token"), enabling the creation and transaction of digital uncertificated securities in a DLT ecosystem without legal uncertainties.

## Digital Security Trading Facilities

The first central element of the new regulation is a new license category for "DLT Trading Facilities" (DLT-Handelssysteme) introduced in the Financial market infrastructure law (FMIA). This new license type has been defined as a professionally operated venue for the multilateral and non-discretionary trading of Digital (DLT) Securities. The goal is to offer trading, clearing, settlement, and custody services with DLT based assets to regulated financial market players and private customers.

"DLT Securities" are securities suitable for mass trading that can take the form of either Uncertificated Register Securities or other uncertificated securities provided they are held in distributed electronic registers and grant the creditors the exclusive power over the rights. The system allows entry to entities that hold a license or recognition by the FINMA. Foreign entities are subject to an equivalent organ of supervision and even unregulated entities and individuals if they declare to act in their name and account.

Entities with a DLT Trading Facility license will be able to operate Organised Trading Facilities (OTF). This is notable as this was so far only possible for banks, securities firms, and other authorized or recognized trading venues.

The licensing requirements for the DLT Trading Facilities are largely modeled on existing requirements for traditional trading venues, with adjustments made with respect to the specificities the distributed ledger technology brings. To meet the expected needs of Fintech-start-ups and larger players alike, the DLT Trading Facility License can be applied for in two versions: A smaller, leaner license with lower requirements and a more comprehensive license type for higher transaction volumes.

## New regulatory framework for custody providers

The second major change brought by the DLT Framework is clarifying the regulatory treatment of custody service providers for digital assets. In a nutshell, the provision of (pooled) custody services without a banking license requirement is made substantially easier.

Due to changes in the Swiss Federal Act on Debt Enforcement and Bankruptcy (DEBA) (as well as the banking regulations), the treatment of digital assets in a bankruptcy event of a custodian is clarified in favor of the client. The new regulation

allows the segregation of the digital assets for the benefit of the relevant creditors or investors, provided certain requirements are met. If the digital assets are held by the custodian in a way that unambiguously allows the identification of the owner on-chain or off-chain (through a sufficient internal ledger), the property to the digital assets remains with the client. In such cases, banking regulations are not triggered, even if the digital assets of various clients are pooled within the custody solution of the custodian.

## New digital securities (DLT Uncertificated Register Securities)

Under the existing legal framework, the Civil law treatment of "security token" has created uncertainty. To solve this, the new law introduces a new type of digital securities, the so-called "Uncertificated Register Securities" (Registerwertrechte). Alongside, new rules for corporations looking to issue shares in a tokenized form are being released. The goal of the legislator is to allow for a stable and legally robust tokenization of rights, through the electronic registration of rights, that entails the same protection and functionality as a security.

To create those Uncertificated Register Securities, parties must meet a certain set of requirements put forth in the Code of Obligation: The register must, through technical means, grant only the creditors the power to dispose of their rights, excluding the debtors. The information regarding the register's content, functionality, and agreement must either be saved on the register itself or linked to the associated data. Similarly, creditors must be able to access all information concerning them in link to the register without the intervention of a third party. Most importantly, appropriate technical and organizational protective measures must be implemented to prevent any unauthorized changes to the register.

The creation itself is made by the parties through a registration agreement. The relevant right is entered into a "Register of Uncertificated Securities" and may exclusively be asserted based on and transferred via the register.

It is still possible to register the Uncertificated Register Securities with a custodian (Verwahrungsstelle), which will give the register the same value as a "traditional" book-entry security.

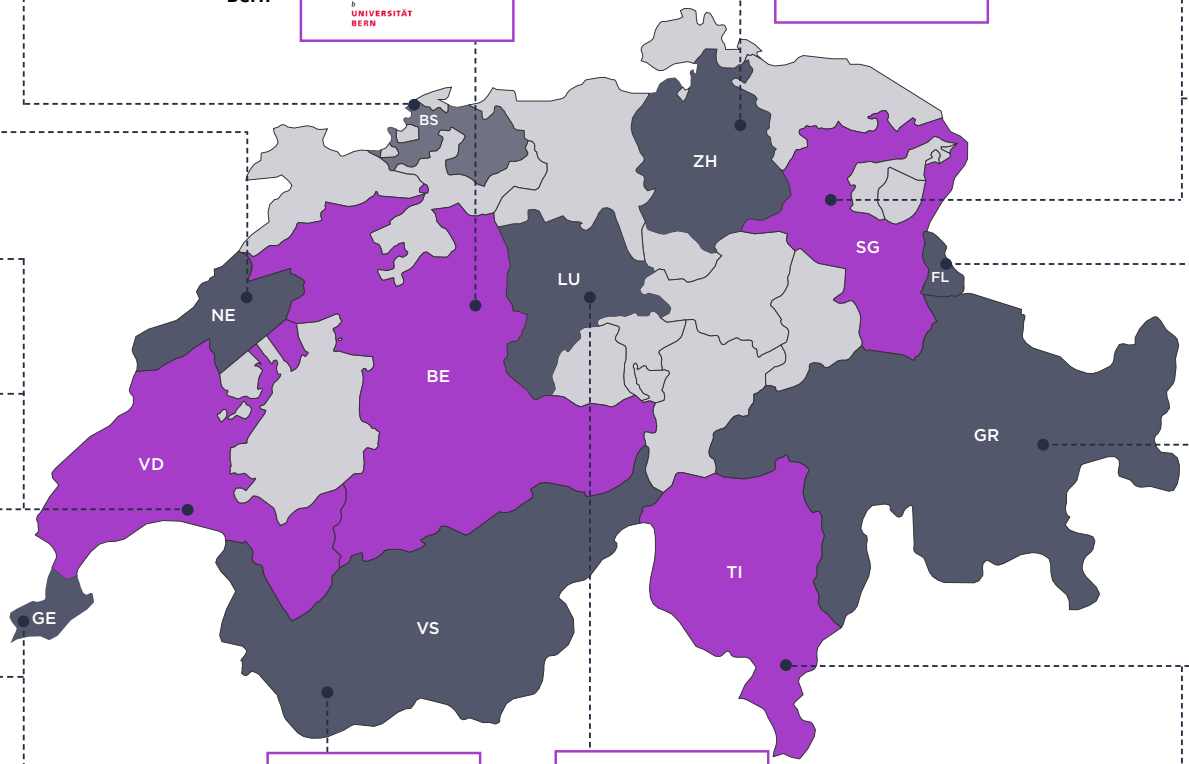
*Are you interested in getting more information on the new Swiss DLT Framework Regulations? Contact us or sign up for our newsletter.*

**Dr. Andreas Glarner**
Legal Partner, MME

**Dominik Hofmann**
Senior Legal Associate, MME

**Romedi Ganzoni**
Senior Legal Associate, MME

# UNIVERSITIES ENGAGED IN BLOCKCHAIN AND DLT




UNIBAS **Basel**

University of Neuchatel **Neuchatel**

EPFL **Lausanne**

Digital Finance IMD **Lausanne**

HEC **Lausanne**

Université de Genève **Genève**

Haute école de gestion **Genève**

FFHS **Bern & Zürich**

University of Bern **Bern**

HES-SO Valais-Wallis **Sierre**

HSLU Lucerne School of Information Technology **Lucerne**

HWZ Zürich **Zürich**

University of Zürich **Zürich**

ETH Zürich **Zürich**

University of St. Gallen **St. Gallen**

Ostschweizer Fachhochschule **Rapperswil**

HSR Hochschule für Technik **Rapperswil**

University of Liechtenstein **Vaduz**

FH GR **Graubünden**

SUPSI **Manno**

USI **Lugano**

# THE ART OF THE STARTUP

**As venture funding in 2021 broke all known records, the opportunity window for new ideas is wide open now. Startups could never get financed that easily. However, there are still lots of tricks for effective startup management, which may increase the value, funds collected, and project visibility. These tricks may turn a startup into a genuine success.**

## Crypto change the whole picture

The hardest part of the overall investment process is the seed phase. When a project is still under development, has no public acknowledgment, and lacks finance, it is hard to convince people to invest. So here comes crypto to refresh the total investment picture, transforming it into real art.

Crypto provides a new dimension of freedom for literally all projects. The tokens become immediately liquid after the listing and give a lot of opportunities to investors. If appropriately managed, tokens attract users and quickly spread information about the project. Thus, crypto solves two major tasks of every new project: **spreading info and funding.**

However, this is easy to understand but quite hard to realize in practice. Let us quickly highlight the most common strategy for a new token launch.

**Step 0. Institutional fund-raising.** This step is the beginning of a long road and not only about money but more about the right contacts, which can introduce a project to valuable partners and other good VCs, bring value and support the project in the future. There are a lot of different VCs on the market - proprietary, wealthy individuals, community-based, profit makers, and profit takers. It's important to dive deeper into each potential partner, to understand clearly what kind of business the partners do. The best form of VC is proprietary, with no community money behind, with a clear plan for investments and long-term vision of the market, coupled with a good portfolio, industrial expertise, and strong network among VCs and exchanges. For example, VRM Ventures belongs to one of the biggest market makers on the crypto market VRM invests in the following areas - CeFi exchanges, web3, DeFi, Cross-chain solutions, and end-customer-oriented directions NFT and metaverse.

**Step 1. IDO.** The token is new, and no one has a clue what it is. The only way to launch it is to put it into an existing group of investors, providing them with an offer of a unique entry price (usually 0,5-0,8 off the future listing price). A launchpad is the best starting venue to create primary FOMO and involve users in creating the project community. FLy Launchpad stats prove there is a very high interest from investors for quality projects. Typically, project tokens are oversubscribed 3-30 times! Voilà! Who asked for FOMO? Besides market visibility and raising funds, an IDO helps check for real market demand, increase the number of token holders and establish an initial secondary market price for the project's token.

**Step 2. Listing.** Listing a token is a vital and very fragile process. Successful tokens are welcome on all exchanges and provide enormous power for the project to be adequately financed. However, the first listing is always a pain in the neck. The project should create enough liquidity on every exchange, involve market makers, etc. If the project made the right choice at step 0, its backers will help the team select the appropriate trading venues, get good listing conditions from CEXes or have a proper scheme for DEX liquidity management. DEX listing seems to be the easiest part of this process and can be realized in a minute. However, DEX makes it very hard to maintain a proper token price, as it is totally retail-based and too sensitive to every small market movement. If the project has a lot of retail token-holders, who can arrange heavy selling pressure, the best way is to be listed on a CEX first and then, when the price has stabilized, open a pool on a DEX.

**Step 3. Building** loyalty and free-floating management. Once a project is up, the whole new game starts in earnest. Any community is really hard to manage: people will love the project when the token is up and hate it at all other times. No token can go up forever, so the project has to develop a good reason for users to hold it. Staking solves this. The staking contract should be ready at the start and should be appropriately presented to token holders because the main purpose of staking is to prevent token-holders from selling the tokens.

## What to expect in 2022?

The world is trying to recover from the pandemic. Quantitative easing by governments multiplied combined with longer hours at home during quarantine and accompanied by prolonged uncertainty about the future creates an ideal storm for investments. Crypto is the area where you can feel this storm most vividly:

- NFT, metaverses, and DeFi contracts are just at the beginning of their mass adoption and gain value every day
- The classical finance world ceased criticizing crypto and started active penetration into different areas. This still looks more like testing the water, but their steps are becoming bolder, and the level of investments has reached 7-digit figures already.
- Legal adoption by governments will not stop with brave El Salvador, and more countries will follow as they try to take a piece of this pie.

This year has the ideal momentum for any new, genius, and brave ideas, no matter how eccentric they might look. Take a chance to get on this opportunity train!

**Andrei Grachev**
CEO, VRM.trade

# CRYPTO MARKETS IN 2021 – A VIEW FROM THE BITCOIN SUISSE TRADE DESK

**The past year has catapulted crypto to new heights. It was a year when Bitcoin became legal tender in El Salvador and saw further institutional adoption, the continued rise of decentralized finance (DeFi), as well as more and more hype surrounding NFTs, partially driven by the growing popularity of the Metaverse. 2021 also saw the strong emergence of alternative Layer-1 blockchains to compete with the Ethereum network for dominance. With transaction fees on Ethereum skyrocketing, various Layer-2 solutions also had their time to shine and found widespread and growing interest.**

We observed many of these trends from the Bitcoin Suisse Trade Desk in our analysis of the top 10 performing assets in 2021. Apart from two assets, all other top gainers were either Metaverse (SAND, AXS, MANA – on avg. +12'122%), Layer-1 (LUNA, FTM, SOL, AVAX – on avg. +9'743%), or Layer-2 (MATIC +14'496%) coins.

Nevertheless, Bitcoin, and consequently the entire crypto ecosystem, also faced several challenges over the past year, including a massive regulatory crackdown from the Chinese government in Q2. The prohibition of Bitcoin mining on Chinese soil initiated a massive migration of hash rate, with the U.S., Russia, and Kazakhstan filling the gap. Consequently, the total hash rate, as measured in Terra Hash per second (TH/s), fell from roughly 180m TH/s during mid-May down to 85m TH/s in early July 2021. The U.S. now exhibits a total market share of over 35% in total hash rate generation. We now see that this transition has not weakened the Bitcoin network and has elevated the total hash rate to pre-China ban levels (currently standing at 175m TH/s), proving Bitcoin's resilience once again.

This strong network performance, in combination with the approval of the first U.S. futures-backed Bitcoin ETF enabling new crypto investors to achieve exposure to the industry, has led to a massive bull run that lasted up until late November of the past year. As a result, the total crypto market capitalization reached over $3 trillion.

As DeFi protocols surged through 2021 (with Total Gross Value Locked reaching highs of over $110 billion), it is no surprise that we experienced significant interest in DeFi tokens at the Bitcoin Suisse Trade Desk, where our broad offering includes MKR, AAVE, COMP, UNI, and DAI. There was also a strong appreciation for our best execution trading services, which make it possible for institutional and high net worth private clients to carry out trades in the tens or even hundreds of millions without slippage – even for newer crypto assets where liquidity is not as deep as for BTC or ETH.

Proof-of-stake blockchains were also in the spotlight in 2021. Their total market capitalization has risen significantly, and there is over $260 billion in value staked (at the time of writing). At Bitcoin Suisse, we see a strong demand for our staking services, as we passed the $2.6 billion mark this year.

The launch of parachain auctions on Kusama and Polkadot also marked an important step that has led to significant amounts of KSM and DOT being locked (31% and 10% of total supply, respectively).

The rate of increased sophistication in crypto markets, with up-and-coming trading venues such as FTX and more volumes in crypto-asset derivatives, also underscores the developing trend of institutional adoption. The crypto futures market, for instance, managed to attract a total open interest of $27.4 billion in early November 2021. Market infrastructure, including hyper-secure custody such as the Bitcoin Suisse Vault, continues to develop to meet this demand. Bigger and bigger market participants, such as investment and pension funds, hedge funds, and large publicly traded firms have seen significant growth in crypto assets in 2021 and are now considering their potential.

From our perspective, 2021 may mark a significant milestone in many ways for the growing crypto asset market – one which we will remember well in years to come.

**Lothar Cerjak**
Head Trading & Brokerage,
Bitcoin Suisse

**Pascal Halter**
Trader,
Bitcoin Suisse

# 02

# BLOCKCHAIN INDUSTRY IN CRYPTO VALLEY VISUALIZED

# CRYPTO VALLEY TOP 50 COMPANIES PER SECTOR

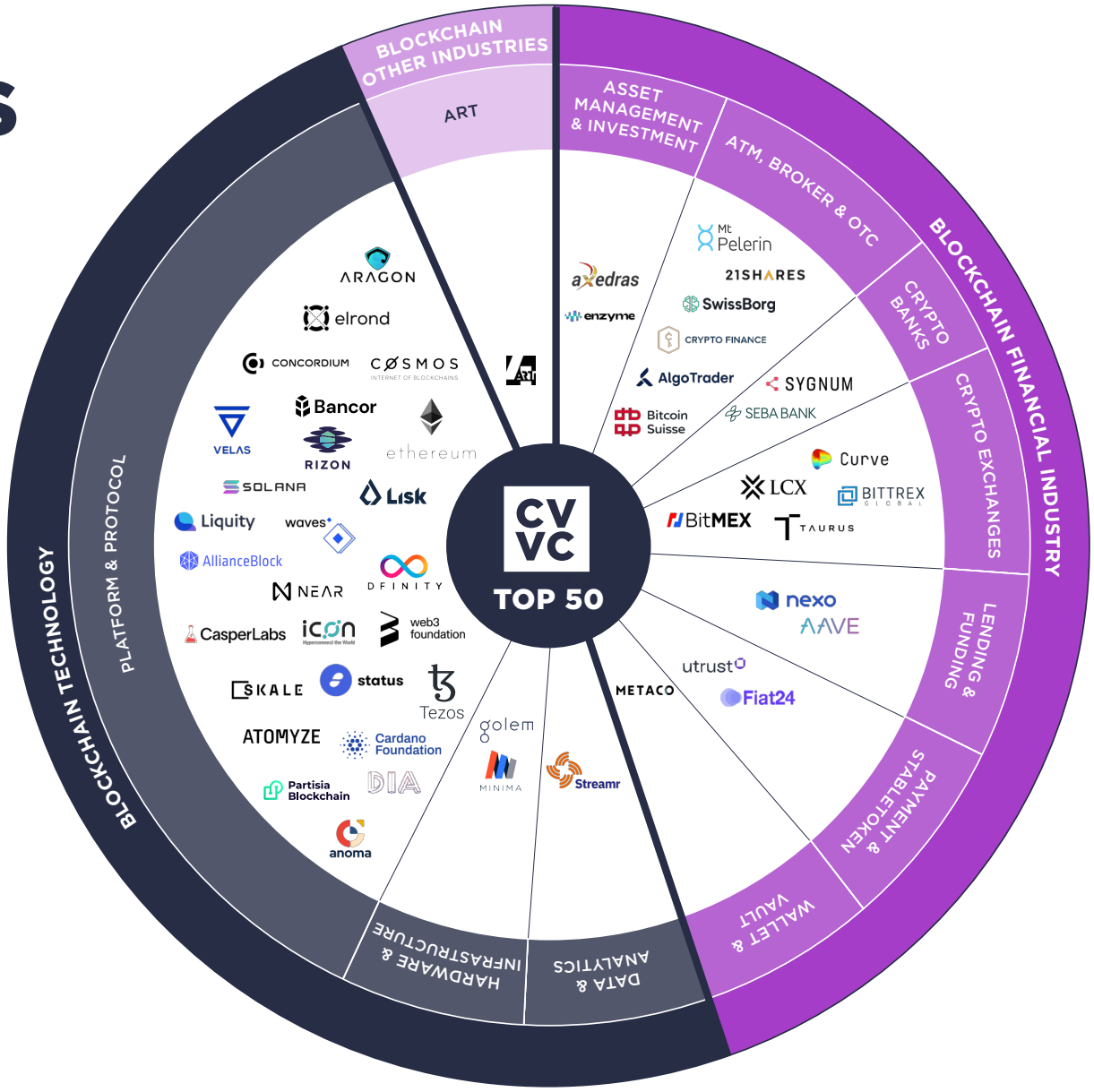
The CV VC Top 50 Report H2/2021 lists the core Blockchain Ventures in Switzerland and Liechtenstein. Key selection criteria: Funding, valuation, and employees in Switzerland and Liechtenstein.

## TOP 50 COMPANIES

| | |
|---|---|
| **US$ 611.8B**<br>VALUATION | **14**<br>UNICORNS |
| **US$ 3.1B**<br>TOTAL FUNDING | **1010**<br>EMPLOYEES |

## CRYPTO VALLEY TOTAL

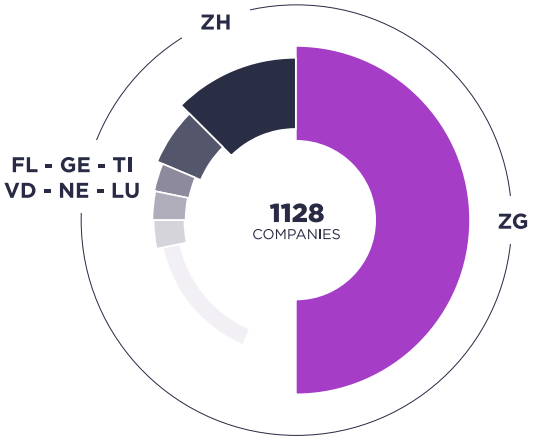
| | |
|---|---|
| **1128**<br>BLOCKCHAIN COMPANIES | **6002**<br>EMPLOYEES |

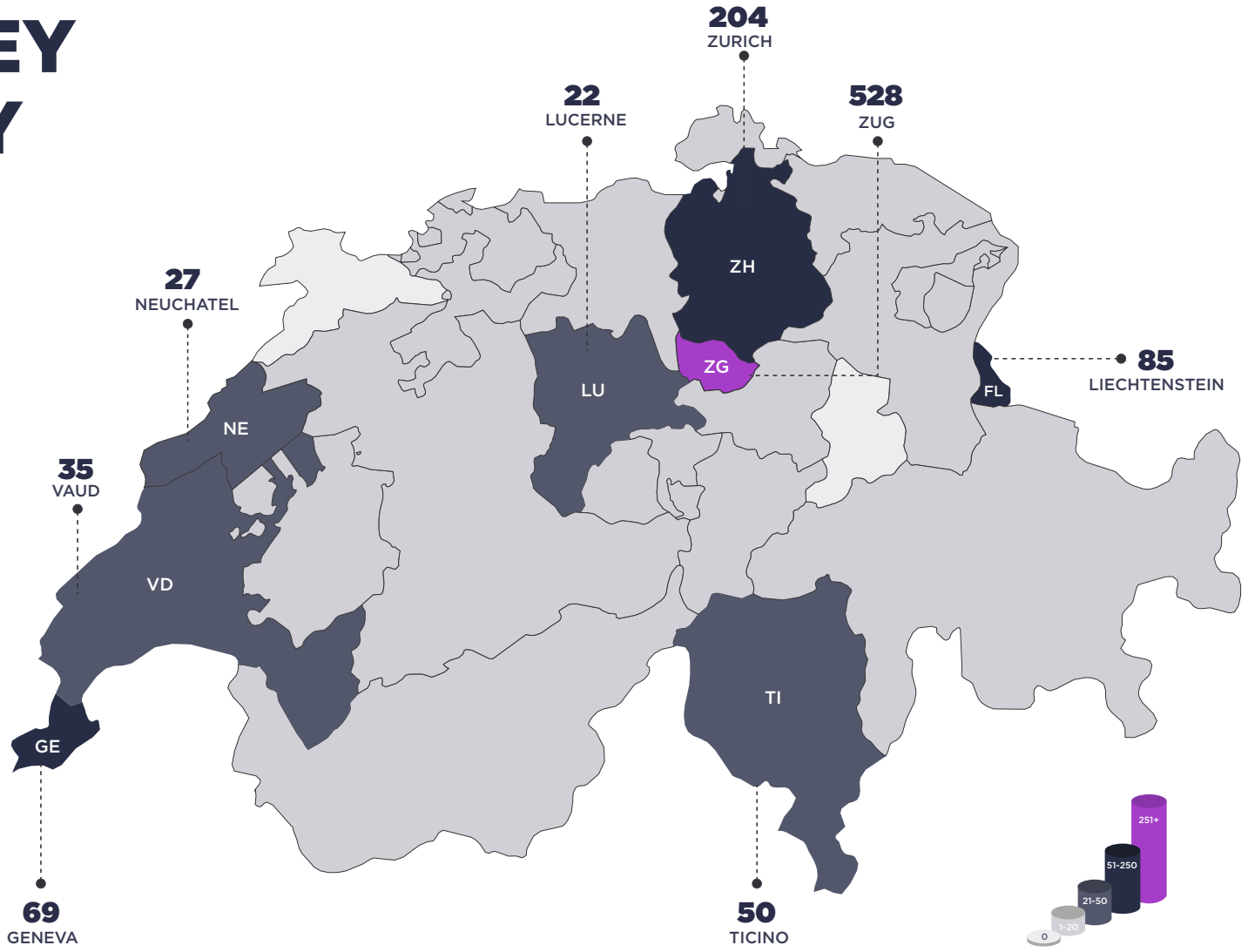



The Crypto Valley's Top 50 companies per 3 sectors: **Blockchain Financial Industry, Blockchain Technology and Blockchain Other Industry.**

# CRYPTO VALLEY COMPANIES BY REGION

Crypto Valley, which includes both Switzerland and Liechtenstein, is home to 1,128 blockchain/cryptocurrency companies. CV VC research shows ten crypto hotspots in Crypto Valley: Zug, Zurich, Liechtenstein, Geneva, Ticino, Vaud, Neuchatel, Lucerne, Bern and Schwyz. Zug continues to be the heart of Crypto Valley, as almost half of all companies make Zug their home (528). The Canton of Zurich counts 204 companies, Geneva counts 69, Ticino counts 50, Vaud counts 35, Neuchâtel counts 27, Lucerne counts 22, Bern and Schwyz each count 19. The Principality of Liechtenstein counts 85 companies.




Number of startups per canton. The darker the color, the more companies are registered in that canton. Only cantons with 20+ registered companies are named. Example: Zug has 251+ companies so it is colored in purple and indicated with ZG.

# TOP 50 COMPANIES EMPLOYMENT LEVELS

The Crypto Valley blockchain and cryptocurrency ecosystem employs over 6,002 professionals in Switzerland and Liechtenstein.

## EMPLOYEES IN CRYPTO VALLEY

TOP 50 COMPANIES:

**1010**

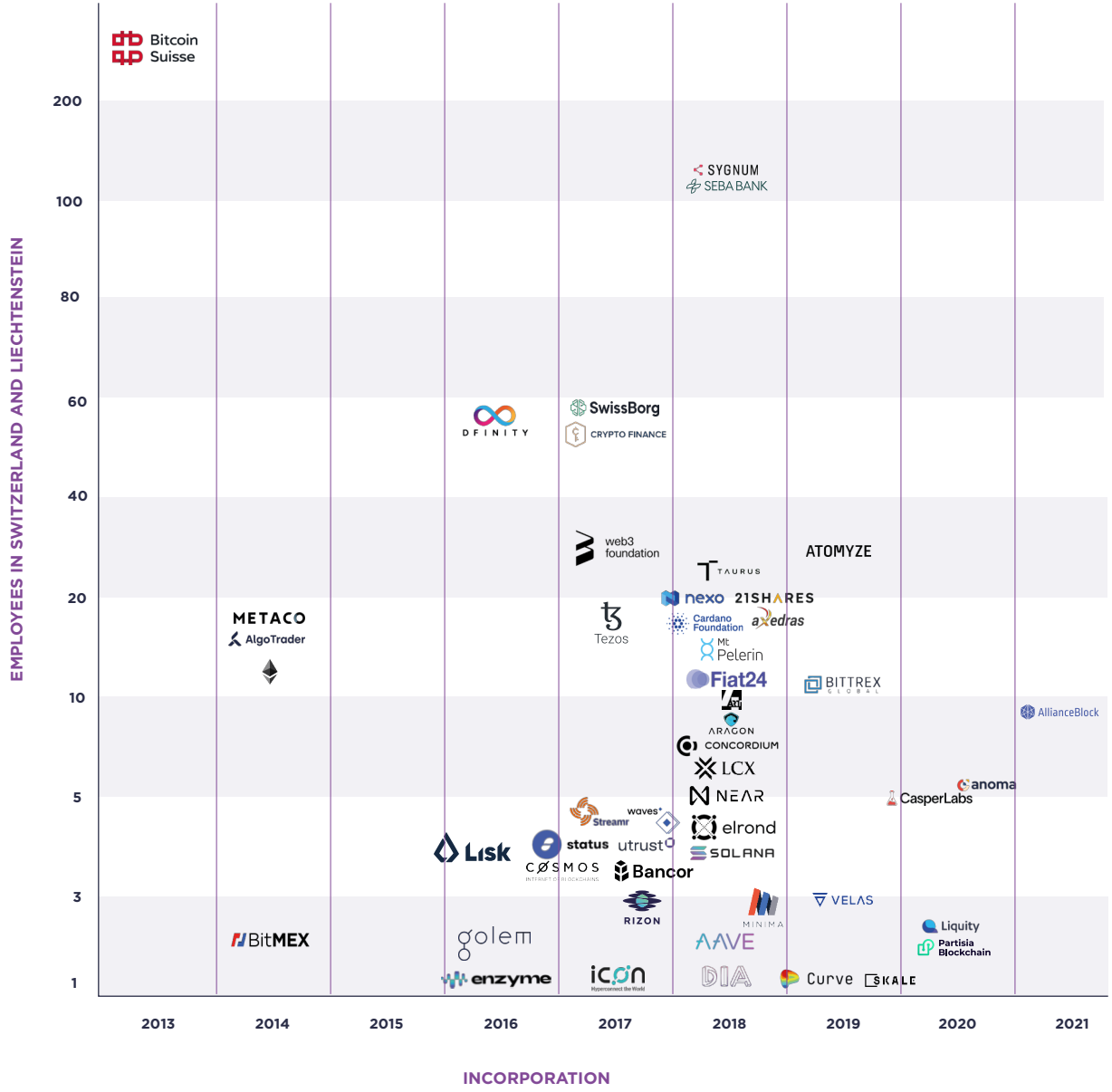
EMPLOYEES

ALL CRYPTO VALLEY COMPANIES:

**6002**

EMPLOYEES

Incorporation vs. employees. The X axis displays the incorporation date of Crypto Valley's Top 50 companies, while the Y axis displays the number of people each company employs. **Example**: The newer the company and the more people it employs, the further it is positioned in the upper right quadrant.



# VALUATION AND FUNDING

The Crypto Valley Top 50 Companies have grown in value dramatically. (The composition of the Top 50 companies changes slightly each reporting period, which may result in changes to the total funding amount).

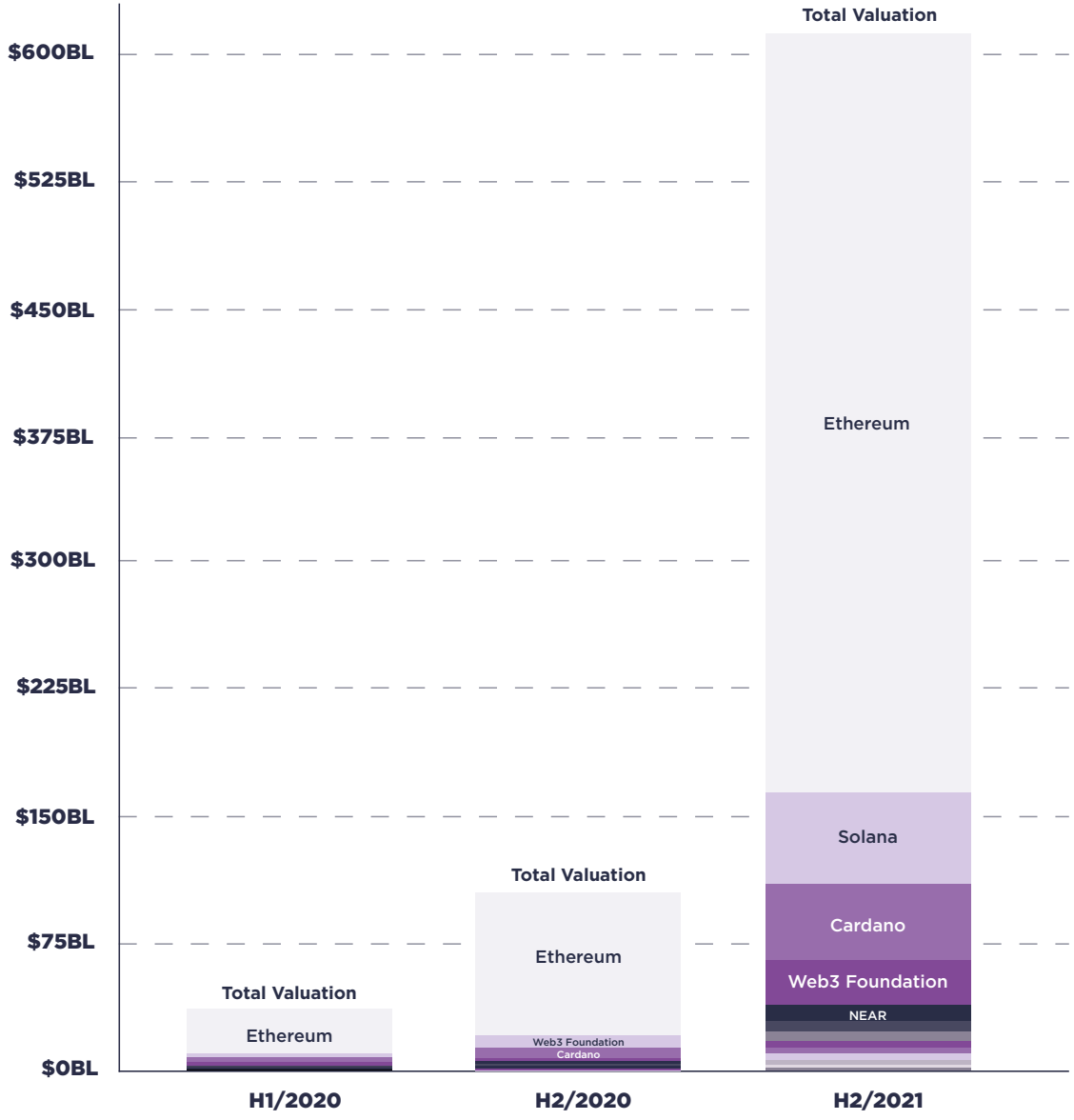
## CRYPTO VALLEY'S TOP 50 COMPANIES VALUATION AND FUNDING

| H1/2020 | H2/2020 | H2/2021 |
|---|---|---|
| **US$ 37.5B** Total Valuation | **US$ 108.4B** Total Valuation | **US$ 611.8B** Total Valuation |
| **US$ 12.3B** Valuation W/O Ethereum | **US$ 22.8B** Valuation W/O Ethereum | **US$ 173.6B** Valuation W/O Ethereum |
| **US$ 2.3B** Funding | **US$ 2.55B** Funding | **US$ 3.1B** Funding |

## UNICORNS

On December 31st, 2021, Crypto Valley counts a total of 14 Unicorns (Companies valued at >US$ 1B)

| | | | | | |
|---|---|---|---|---|---|
| Ethereum | $438.1B | Cosmos | $7.3B | curve.fi | $2.3B |
| Solana | $52.7B | Elrond | $4.7B | Waves | $1.5B |
| Cardano | $43.8B | Dfinity | $4.6B | Concordium | $1.4B |
| Web3 Foundation | $26.3B | Tezos | $3.8B | Nexo | $1.3B |
| Near Protocol | $8.7B | AAVE | $3.4B | | |



# BRIDGING THE GAP BETWEEN DEFI AND FINANCIAL INSTITUTIONS

## First hand experiences from a team showcasing the benefits of DeFi to traditional finance

For some, decentralized Finance (DeFi) can still feel like a foreign concept. Still, it encompasses many of the daily services in traditional finance, including borrowing, lending, and trading assets. The difference is that DeFi services are implemented in a trustless manner on a publicly accessible ledger. This eliminates the need for intermediaries and makes processes more transparent and direct, enabling anyone to access the services. Looking to benefit from the technological advancements, benefits for users, and massive capital flows that exist in DeFi, institutional players are showing significant interest. Indeed, a recent study by Fidelity Digital Assets found that seven in ten institutional investors expect to buy or invest in crypto assets in the near future. However, the industry still lacks an easy-to-navigate, secure, trustworthy gateway for those looking to enter the space.

### The Benefits

Smart contracts built on blockchain allow people to execute complex transactions between two or more entities without the need for intermediaries. Due to their trustless nature, everybody involved in the transaction can rely on the fact that the agreement is executed, as the contract and its rules are deployed on an immutable blockchain. This blockchain technology ensures transparency and traceability is granted, which the traditional financial space has historically struggled to achieve. End clients are pushing institutions to move into the DeFi space to profit from new revenue streams. Unfortunately, institutions that don't provide access to these services are losing a 360° view of their customers and missing out on the digital assets that their clients are holding. However, there are major challenges to overcome before distributed ledger technology (DLT) takes hold in the financial industry.

### The Challenges of Selling DeFi To Institutions

The AllianceBlock team has identified five major issues that need to be solved to achieve mass adoption of DeFi:

- KYC & AML checks must be put in place. DLT is trustless but the world simply doesn't work anonymously. Investors want to verify who they are working with to guarantee trust, which is also a regulation and compliance requirement.
- UX is everything. DeFi applications and solutions currently put too much responsibility in the hands of users because of poor UX. It's too easy to make errors or be exposed to untrustworthy interfaces.
- DeFi is highly focused on the individual. Improving organizational infrastructure should also be a high priority.
- Regulations need to be put in place. To safeguard users and ensure institutions dare to invest and embrace change, guardrails are key.
- DeFi must improve its image to become a best-in-class financial industry. Historical associations with hacks and scams must become a thing of the past.

### A Path Towards A DLT Based Financial Industry?

The solutions to some of these issues are solvable, especially regarding KYC. Anonymity in DeFi is a big issue for institutions, as regulations against fraud and money laundering require them to provide details of relevant parties they are engaging with. Luckily, solutions led by third parties such as GBG allow DeFi accounts to undergo KYC checks, whilst remaining anonymous, which is essential

for many DeFi users who aim to protect their data. Although the user is identified on one side, their identities are not revealed. Transactions will also be traced within the blockchain, making them more secure. This reflects the ways to adapt existing regulations into the DeFi space without affecting its advantages.

In order for the financial industry to flourish, we need to find ways to combine DeFi and centralized entities. It is not a case of DeFi versus established institutions. This will become possible through the transfer of knowledge and resources. A balance is needed to be put in place between the two financial worlds to ensure that their natures aren't compromised, the distributed nature of DeFi solutions and its advantages remain in place, whilst being adapted to current legislation. The integration of these two worlds won't happen overnight. While there is a long journey ahead, it is an exciting time for the industry. We are looking forward to seeing how the existing financial markets and DeFi will work together to promote a better financial world.

**Gerben van den Bergh**
Chief Innovation Officer, AllianceBlock

**Joshua Forster**
Head of Project Delivery, AllianceBlock

# THE FUTURE OF DECENTRALIZED LIQUIDITY

**As the DeFi summer of 2020 approaches its two-year anniversary, the nascent digital asset ecosystem has undergone many transformations. The competition between centralized exchanges (CEXs) and decentralized (DEXs) exchanges, as well as the implementation of creative new "Ethereum-Killer" protocols, have been key drivers in the emergence of a mirror world of unprecedented financial innovation. Tracking this evolution is the Total Value Locked in DeFi, currently approximating $230 billion[1].**

Nonetheless, this growing network of interacting market participants is still governed by the same forces shaping traditional finance. Price efficiency, market liquidity, and the overall market structure, to name a few, also play an essential role in the brave new world of DeFi. Central to the functioning of any financial network is the market maker.

Traditionally, market makers post orders to a centralized limit order book, sourcing nurturing liquidity to markets without which they would become barren deserts. The algorithms behind different liquidity provision strategies can be very intricate, and many such active market makers fiercely compete for market share. With the advent of liquidity pools (LPs) in DeFi, things changed. LPs are crowdsourced collections of tokens locked in smart contracts, enabling decentralized trading by incentivizing liquidity providers with rewards. Automated market makers (AMMs) act on LPs and thus bypass the need for a centralized limit order book. Underlying these passive market-making strategies is a mathematical formula that dictates the change in asset price resulting from the trading activity.

DEXs are smart-contract implementations of AMMs. Uniswap's constant product formula was the first example of an AMM, copied and enhanced by other DEXs. With Version 3 of its protocol, Uniswap introduced yet another innovation; now, liquidity providers can define a price range in which they want to be active. In effect, Uniswap v3 approximates a limit order book.

While traditional market makers need to manage their inventory risk, participants in an LP are exposed to what is known as impermanent losses, which stem from price volatility. A recent study uncovered that nearly 50% of liquidity providers on Uniswap v3 incurred impermanent losses that overshadowed the gains earned from trading fees[2]. However, perhaps the greatest deterrent to providing liquidity to AMMs on the Ethereum blockchain comes from the high gas fees, emblematic of the protocol's scalability issues. Moreover, tokens listed on both CEXs and DEXs are vulnerable to arbitrageurs, indicative of the discrepancy in the maturity of the markets. Overall, price discovery still happens primarily on CEXs, while another study showed that DEXs suffer from lower market quality [3]. Indeed, even listing a token on a DEX comes with novel challenges, as sniper bots roam free, programmed to initially buy as many tokens as possible to then sell at the detriment of all other market participants.

Today, we stand at the threshold of a bright new era of DeFi. New prototypes have been realized within an astonishingly short time. While challenges abound, the creative potential of the ecosystem can hardly be underestimated. As a result, many innovative solutions to Ethereum's ills are being proposed, while evermore disruptive protocols are being launched and multiple cross-chain interoperability options explored.

Nature's age-old blueprint for designing complex networks has always heavily relied on the notion of decentralization, fostering the uncanny process of emergence. This universal design pattern is also why we witness adaptivity, resilience, and sustainability in natural systems. We marvel at Nature's display of collective intelligence and wonder why so many of our centralized and hierarchical man-made systems are lacking the spark of this invisible guiding force.

At flovtec, we fully embrace this new decentralized vision for finance. We offer holistic market-making solutions for token issuers across the centralized and decentralized worlds of digital assets. With our expertise rooted in market making on CEXs, we are expanding our tech stack to incorporate this brave new world of decentralization. Not only do we offer advisory services, helping our clients successfully navigate this often treacherous terrain, but we also assist in the DEX-listings of tokens. Soon, our active market-making algorithms will also be deployable on DEXs, helping the thriving digital asset ecosystem unveil its full decentralized potential.

References:

[1] defillama.com
[2] arxiv.org/abs/2111.09192
[3] arxiv.org/abs/2112.07386

**Nicolas Grawe**
Chief of Growth, flovtec

**James Glattfelder**
Complex Systems Expert, flovtec

# 03

# CRYPTO VALLEY TOP 50 COMPANIES LISTED BY SECTOR

# METHODOLOGY AND SELECTION FOR THE CRYPTO VALLEY TOP 50

The CV VC Top 50 Report lists the major blockchain companies in Crypto Valley (Switzerland and Liechtenstein), excluding companies or organizations from the following categories: service providers, academia/education, events, associations, and media.

## Basic Criteria

Business activity focus: Blockchain,
>1 Employees in CH/LI, Ecosystem/Community Relevance

+

### FUNDING

- Combined traditional VC investment and token sales.
- In case of ICO, USD amount equivalent to total amount raised at crypto exchange rates at time of ICO closing.

### VALUATION

- Valuation based on funding, traditional valuation or current token market cap.

If there is no data:
1. Valuation equals funding (= based on most recent funding, no market valuation yet)

2. Is an estimate according to the following categorization:

S = 10M
M= 25M
L = 50M
XL = 100M
XXL - 500M

### EMPLOYEES

- FTE physically based in CH/LI
- 3 advisors = 1 FTE
- Estimate if no data available

# A NEW AGE OF PRIVACY ON WEB3

**Almost every cryptocurrency and platform protocol are pseudonymous, resulting in the history of transactions, account balances, and movements of the latter being completely transparent to anyone who has access to the internet. The amount of data exposed and susceptible to anyone's surveillance substantially increased through the recent popularity of Decentralized Finance (DeFi) protocols. Furthermore, with the surge of NFTs and their usage as unique social media avatars, anyone can gain an overview of the users' portfolio using the NFT as a pointer. While the industry is growing in the number of users, applications, and volume of interactions - the current state of live protocols is still far from providing a secure and privacy-preserving substrate that is better than traditional financial systems. Data is transparent to anyone and can be easily anonymized via OSINT, statistical analysis, and heuristics.**

There are a few exceptions, such as ZCash, a cryptocurrency protocol that pioneered the deployment of zk-SNARKs, enabling transfers with the highest level of privacy possible at the state transition level - completely removing the exposure of data such as sender, recipient, or amount. A giant leap forward was made in recent years, with a Cambrian explosion in research outcomes. In 2019 specifically, the realm of zero-knowledge proof protocols combined with industry advancements made privacy features more performant and accessible on mobile devices.

Nevertheless, the vast majority of existing proposals have the following limitations: privacy features in cryptocurrency protocols (e.g., ZCash) are attached to particular assets (e.g., ZEC) and their underlying monetary policy; privacy-preserving features on decentralized platforms (e.g., Ethereum) inherit the technical constraints of the protocol itself, such as metadata leakage, as the stack was not designed for privacy or private transfers being unaffordable due to computational cost and fees; zero-knowledge privacy is still limited to a single asset type at a time – pretty inconvenient, as the average user account is moving towards the ownership of a mix between fungible and non-fungible assets.

Although the advancements made in recent years have provided an innovative medium for value exchange, a new age of protocols that inherently deploy privacy-preserving technologies is right around the corner. Anoma is part of this movement, characterized by designing a novel protocol that integrates advancements in zero-knowledge proof schemes. Anoma is a set of protocols that, together, provide its users with a universal privacy-preserving coordination mechanism. In its first versions, Anoma enables users to perform basic forms of coordination, such as transfers of assets with the following characteristics: any asset (cryptocurrencies, stablecoins, other fungible and non-fungible) can be transferred with full zero-knowledge privacy; these assets can freely flow across blockchains, independent of where they originated, thereby decoupling the asset from the constraints of the platform on which they were issued; and lastly, provides more flexibility for its users in terms of the privacy threshold, as they can enable specific users, to view their transaction history (as opposed to either full opacity or transparency).

The technology that Anoma deploys to enable asset-agnostic private transfers is known as the MASP (Multi-Asset Shielded Pool), a form of zk-SNARKs that enables any type of asset to share the same shielded pool. As a result, making the transfer of an NFT indistinguishable from a transfer of a native asset to any external observer. To enable the decoupling of assets from the platforms that issued them, Anoma bridges existing platforms and interconnects with other blockchains via the Inter Blockchain Communication protocol (IBC).

The possibilities that the advancements in zero-knowledge schemes and its cryptographic protocols bring are not limited to privacy-preserving features, but rather extend to other properties, such as fair transaction ordering and front running protection (e.g. with Ferveo) or efficiency gains from data compression (known as recursive proofs) and batching of transactions (e.g. ZK rollups).

**Awa Sun Yin**
Co-founder, Anoma

# WEB3.0 INFRASTRUCTURE DESIGNED FOR PRIVACY, SPEED, SCALABILITY, AND SUSTAINABILITY

**After a decade of work behind the scenes, the Partisia team is ready to unveil a blockchain for large mainstream applications thanks to solving the blockchain trilemma.**

## The Blockchain Trilemma

Creating a scalable, secure, and decentralized blockchain is a much harder proposition than it seems. Today, the vast majority of the blockchains are one of these, and many score poorly on all three.

The fundamental problem of the basic blockchain architecture is that the resources of the entire group of consensus participants (stakers, bakers) must agree on one single version of a blockchain. In the short period that a block has to propagate, all transactions need to be calculated, verified, and voted on. This gets out of hand when large amounts of transactions and data must be passed. The naïve approach of heavy blocks validated by just a few large contributors fails largely for this reason. Even if scalability could be reached through extremely advanced optimization, there would still be issues of centralization and "liveness" of the system (i.e., its ability to be always operational).

A better solution can be achieved with sharding, which groups transactions by certain criteria and lets only a subset of validators calculate them. This offers many benefits for scalability and decentralization, but security suffers. By segregating block space, each shard is exponentially harder to secure. With 100 shards, you only need 1% of well-directed consensus power to take over completely. Securing such protocols is extremely difficult and often carries major scalability drawbacks.

## How Partisia Blockchain works

Key to the way we tackle the trilemma is our innovative cryptographic techniques. To understand Partisia Blockchain's advantage, we must talk about Multi-Party Computation and Zero-Knowledge, topics that our cryptography experts, led by Dr. Ivan Damgard, have developed since 2008.

Multi-party computation (MPC) is a branch of cryptography that enables multiple participants to compute for the same function without knowing each other's inputs. Partisia has provided services based on MPC since 2008, finding use cases such as bids for auctions where participants do not need to reveal their bid or financial position, or employee payment evaluation and fraud detection.

Zero Knowledge Proofs (ZKP) is another exciting branch of cryptography that aims to develop new ways of proving certain statements without sharing inputs or any other information. This technology enables fully private decentralized applications, which can revolutionize how we interact with our personal data and blockchains.

Combining MPC with ZKP enables Partisia Blockchain's breakthrough in scalability and security. There are two classes of Partisia Blockchain nodes, called Baker and ZK nodes. The former are block producer nodes, taking part in consensus and ordering transactions. Thanks to MPC techniques, Baker nodes can pre-process many of the calculations required for each block. The ZK nodes are responsible for executing complex private calculations or pre-computing certain transactions for Baker nodes.

By separating the two layers of node operators and having everyone hold the MPC token, we can maintain security while keeping the network decentralized. We also require strict SLAs for ZK nodes, ensuring the network maintains liveness.

## Real-World Use Cases

Thanks to our cryptographic innovations, we offer a decentralized, scalable, and private blockchain with many use cases. An example is our recently-announced collaboration with Frax Finance to host the Frax Price Index (FPI) on the Partisia blockchain. The FPI, to be

integrated into the Partisia Blockchain network, is built to function as an on-chain inflation tracker utilizing privacy-preserving data from the network to formulate an efficient and transparent inflation tracking tool for the DeFi world. It's essentially the blockchain replacement of the US Consumer Price Index. Another use case is the recently announced partnership with Instars, a social media platform that uses user data only with permission and pays users in cryptocurrency for sharing data and feedback. Other use cases that we are working on with new partners include all areas of the digital economy, such as healthcare: supply chain tracking to combat counterfeit medicine, banking, voting, and NFT auctions.

## Why We Made Partisia Blockchain

Our objective with Partisia Blockchain is to offer an accessible and safe blockchain for mainstream and enterprise adoption and non-profits and NGOs. Hence our new tagline: Partisia Blockchain, Infrastructure for the Greater Good.

While for now, our team is focused on some revolutionary new functionalities, such as interoperability, Bring Your Own Coin (BYOC), and launchpads for promising third-party projects, we believe that blockchain can enable social causes as well. Partisia is committed to the UN Sustainable Development Goals by providing our energy-efficient infrastructure for socio-economic evolution, such as easily accessible digital identification systems in underdeveloped countries that will drive financial, educational, and health-care inclusion.

Starting strong in 2022, we are proud to announce recently signed agreements with global NGOs, including Red.org and The Global Fund, to power new models for social impact. The use of blockchain offers far-reaching possibilities, including transparency, supply chain management, digital identity, personal data protection, compliance, trust, verification, and sustainability. The Partisia Blockchain team and its 1'000+ contributors are working hard to bring these promises to life.

**Brian Gallagher**
Co-founder, Partisia Blockchain

# 01 BLOCKCHAIN TECHNOLOGY

- DATA & ANALYTICS
- HARDWARE & INFRASTRUCTURE
- PLATFORM & PROTOCOL

Source: Corporate Contact (CC); CrunchBase (CB); IcoBench (IB); TrackIco (TI); Desk Research/Press (DR); Coinmarketcap (CMC); Corporate Website (CW); LinkedIN (Li), Estimate (2), No information (N/A)

## AllianceBlock

At AllianceBlock, we are bridging the gap between decentralized finance (DeFi) and traditional finance (TradFi), by remedying issues that exist in both spheres and linking them more closely together. We see the future of finance as an integrated system in which the best of both worlds can work together to increase capital flows and technological innovation.

Token Ticker: ALBT

Sub-Category: Platform & Protocol

$1,500,000 CC FUNDING

$135,916,529 CMC VALUATION

9 CC EMPLOYEES CH

## Anoma

Anoma is a sovereign, proof-of-stake blockchain protocol that enables private, asset-agnostic cash and private bartering among any number of parties. Anoma is part of a growing global effort to impede non-consensual usage of data by third parties, prevent nation-states from weaponizing the financial system, and empower humankind to solve existentially-threatening collective action problems that transcend national borders.

Token Ticker: N/A

Sub-Category: Platform & Protocol

$36,000,000 CC FUNDING

$300,000,000 CC VALUATION

5 CC EMPLOYEES CH

## Aragon

Create value without borders or intermediaries. Aragon is being built because so that decen-tralized organizations can solve the world's worst problems. Aragon is a project that aims to disintermediate the creation and mainte-nance of organizational structures by using blockchain technology. The company wants to empower people across the world to easily and securely manage their organizations. Aragon provides the tools for anyone to become an entrepreneur and run their own organization, to take control of their own lives.

Token Ticker: ANT

Sub-Category: Platform & Protocol

$190,000,000 DR FUNDING

$534,927,730 CMC VALUATION

8 LI EMPLOYEES CH

## Atomyze

Atomyze's vision is to facilitate the tokenization of commodities, enabling them to be traded in a simple and secure way, and bring new access, increased liquidity, optimized efficiency, and improved transparency to the industry, within a seamless ecosystem. To make this a reality we have established key partnerships to create a next-generation ecosystem, with Hyperledger Fabric distributed ledger technology (DLT) at its core.

Token Ticker: N/A

Sub-Category: Platform & Protocol

N/A 2 FUNDING

$100,000,000 2 VALUATION

30 LI EMPLOYEES CH

## Bancor

Bancor introduced the first-ever decentralized exchange (DEX) based on automated market makers (AMMs). The protocol offers users safe and simple access to DeFi yields while enabling algorithmic, decentralized trading for integrated tokens. Bancor is the only decentralized trading protocol that allows depositors to earn money with single-token exposure and zero risk of impermanent loss.

Token Ticker: BNT

Sub-Category: Platform & Protocol

$152,300,000 CB FUNDING

$758,082,151 CMC VALUATION

4 LI EMPLOYEES CH

## Cardano

Cardano is a decentralised public blockchain and cryptocurrency project and is fully open source. Cardano is developing a smart contract platform which seeks to deliver more advanced features than any protocol previously developed.

Token Ticker: ADA

Sub-Category: Platform & Protocol

$62,200,000 CB FUNDING

$43,873,068,347 CMC VALUATION

13 LI EMPLOYEES CH

CasperLabs

The Casper Network is a fully decentralized (permis-sionless), scalable, and highly secure Proof-of-Stake layer 1 blockchain. Casper has solved the layer 1 trilemma; it is secure, fully decentralized, and scalable/fast. Powered by Highway, an inno-vative, correct-by-construction (CBC) Casper-ba-sed Proof-of-Stake consensus protocol, Casper is leveraging popular workflows, innovative deve-loper tools and multiple programming langua-ges. Casper makes blockchain services easier to use, more upgradable and more predictable, thus removing barriers to mainstream adoption.

Token Ticker: CSPR
Sub-Category: Platform & Protocol

$40,000,000 CC FUNDING
$346,436,979 CMC VALUATION
5 LI EMPLOYEES CH

Concordium

When launched in 2021, the Concordium bloc-kchain will be a Level-1, Proof-of-stake, regula-tory-compliant, enterprise-grade blockchain with verified identity of users built-in at the protocol level and with application of zero-knowledge proofs. Technological innovations will enhance its performance and allow the blockchain to be fast without compromising security, be scalable, offer interoperability and it's partial synchro-nicity adjust to the speed of the internet and ensure that Concordium won´t break under any circumstances.

Token Ticker: GTU
Sub-Category: Platform & Protocol

$45,000,000 CB FUNDING
$1,450,000,000 DR VALUATION
7 LI EMPLOYEES CH

Cosmos Network

Interchain Foundation, a Swiss non-profit, which is responsible for co-ordinating fundraising and allocating funds to get the network off the ground. The foundation will suggest a distribution of Atoms according to the results of the fundraiser. Users will ultimately decide the distribution for them-selves when they run the software. The Interchain Foundation will suggest that 5% of the Atoms go to its initial donors, 10% go to the Interchain Foundation, 10% go to the company developing most of the software, and the remaining 75% to be distributed according to the results of the private and publicfundraisers.

Token Ticker: ATOM
Sub-Category: Platform & Protocol

$17,000,000 CB FUNDING
$7,345,500,989 CMC VALUATION
4 LI EMPLOYEES CH

Dfinity Foundation

The DFINITY Foundation is a not-for-profit organi-zation based in Zurich, Switzerland, that oversees research centers in Palo Alto, San Francisco, Tokyo, and Zurich. Our mission is to build, promote, and maintain the Internet Computer — and by doing so, improve the world. The Internet Computer extends the functionality of the internet from connecting billions of people to also providing millions of developers and entrepreneurs with a public compute platform — creating a revo-lutionary new way to build software, DeFi and open internet services. In turn, this generational shift in computing aims to return the internet back to its free and open roots.

Token Ticker: DFN
Sub-Category: Platform & Protocol

$166,900,000 CB FUNDING
$4,664,461,431 CMC VALUATION
57 LI EMPLOYEES CH

DIA

DIA (Decentralised Information Asset) is an open-source, financial information platform that utilizes crypto-economic incentives to source and validate data. Market actors can supply, share, and use financial and digital asset data. DIA's mission is to democratize financial data, similar to what Wikipedia has done in the broader information space. DIA data sources and methodologies are transparent and publicly accessible to everyone.

Token Ticker: DIA
Sub-Category: Platform & Protocol

$15,000,000 CB FUNDING
$78,653,075 CMC VALUATION
1 LI EMPLOYEES CH

Elrond

Elrond is a highly scalable, fast, and secure blockchain platform for distributed apps, enterprise use cases, and the new internet economy. Its software seeks to incentivize a distributed network of computers to run a smart contract platform that aims to prioritize scalability and low transaction fees. Elrond brings a 1000x improvement in blockchain speed, scale, cost, and user experience.

Token Ticker: EGLD
Sub-Category: Platform & Protocol

$1,900,000 CB FUNDING
$4,761,300,954 CMC VALUATION
4 LI EMPLOYEES CH

Ethereum

Ethereum is a decentralized platform that runs smart contracts: applications that run exactly as programmed without any possibility of downti-me, censorship, fraud or third-party interference. These apps run on a custom built blockchain, an enormously powerful shared global infrastructure that can move value around and represent the ownership of property. This enables developers to create markets, store registries of debts. or promises, move funds in accordance with instruc-tions given long in the past (like a will or a futures contract) and many other things that have not been invented yet, all without a middleman or counterparty risk.

Token Ticker: ETH
Sub-Category: Platform & Protocol

$18,400,000 CB FUNDING
$438,128,003,491 CMC VALUATION
11 LI EMPLOYEES CH

Golem

Golem is a global, open source, decentralized supercomputer that anyone can access. It is made up of the combined power of users machines, from PCs to entire data centers. Golem creates a decentralized sharing economy of computing power and supplies software developers with a flexible, reliable and cheap source of computing power.

Token Ticker: GLM
Sub-Category: Hardware & Infrastructure

$17,200,000 CB FUNDING
$455,760,626 CMC VALUATION
2 LI EMPLOYEES CH

HDAC

RIZON

Token Ticker:
ATOLO

Sub-Category:
Platform & Protocol

Headquartered in Zug, Switzerland, Hdac Technology AG is a blockchain technology company that aims to be a digital currency and asset hub that provides a platform where fiat currencies around the world can be securely issued and enables businesses to interoperate with each other. Rizon Blockchain has strong network background and is capable of boosting the inflow of the ecosystem participants and the diversification of business.

$258,000,000 IB
FUNDING

$111,007,702 2
VALUATION

5 LI
EMPLOYEES CH

ICON

Token Ticker:
ICX

Sub-Category:
Platform & Protocol

The ICON project is building one of the largest decentralized networks in the world. Promo-tion and development of new technologies and applications, especially in the areas of new open and decentralized software architectures. In the foreground - but not exclusively - is the promotion and development of the so-called ICON protocol and the corresponding techno-logies, as well as the promotion and support of applications using the ICON protocol.

$45,000,000 DR
FUNDING

$847,055,236 CMC
VALUATION

1 LI
EMPLOYEES CH

Liquity

Token Ticker:
LQTY

Sub-Category:
Platform & Protocol

Liquity is a decentralized borrowing protocol that allows you to draw 0% interest loans against Ether used as collateral. Loans are paid out in LUSD - a USD pegged stablecoin, and need to maintain a minimum collateral ratio of only 110%. Liquity creates a more capital-efficient and user-friendly way to borrow stablecoins. Furthermore, Liquity is governance-free, ensuring that the protocol remains decentralized.

$8,400,000 CC
FUNDING

$73,420,779 CMC
VALUATION

2 CC
EMPLOYEES CH

Lisk

Token Ticker:
LSK

Sub-Category:
Platform & Protocol

Develop and publish blockchain applications with your own sidechains on the open-source Lisk Platform. Promotion of new technology developments and applications, in particular promotion and maintenance of new open decen-tralized software architectures. In the foreground - but not exclusively - is the promotion and development of the so-called Lisk protocol and the corresponding technology as well as the promotion and support of applications using the Lisk protocol.

$5,800,000 CC
FUNDING

$303,238,410 CMC
VALUATION

4 CC
EMPLOYEES CH

Minima

MINIMA

Token Ticker:
N/A

Sub-Category:
Platform & Protocol

Minima is a secure, scalable, and completely decentralized public blockchain, that can run completely on a mobile or IoT device without any third parties - no external miners, validators, or producers. Minima will launch its mainnet in 2022 and has the ambition to have millions of nodes, creating a decentralized web architecture for the future.

$9,500,000 CC
FUNDING

$60,000,000 CC
VALUATION

3 CC
EMPLOYEES CH

Near Protocol

NEAR

Token Ticker:
NEAR

Sub-Category:
Platform & Protocol

NEAR Protocol is a scalable blockchain designed to provide the performance and user experience necessary to bridge the gap to mainstream adoption of decentralized applications. Unlike other next-generation blockchains, this network has been built from the ground up to be the easiest in the world for both developers and their end-users while still providing the scalability necessary to serve those users.

$50,000,000 CB
FUNDING

$8,772,517,649 CMC
VALUATION

5 LI
EMPLOYEES CH

Partisia Blockchain

Partisia Blockchain

Token Ticker:
MPC

Sub-Category:
Platform & Protocol

Partisia Blockchain is the world's most advanced zero-knowledge blockchain. Its WEB 3.0 public blockchain is built for trust, transparency, privacy, and speed of light finalization. Partisia Blockchain is a unique combination of a high-performance blockchain that functions as a bedrock for efficient, scalable, and robust orchestration of MPC. This combination of blockchain and MPC technologies provide an optimal foundation for native privacy-preserving applications.

$42,500,000 DR2
FUNDING

$300,000,000 2
VALUATION

2 LI
EMPLOYEES CH

SKALE

SKALE

Token Ticker:
SKL

Sub-Category:
Platform & Protocol

SKALE is built to bring the power of Ethereum to billions of users. It is a 100% decentralized network that will bring Web3, NFTs, and DeFi to users through a world of interconnected, limitless SKALE chains. Developers use SKALE's highly configurable platform to run smart contracts 100% on SKALE chains without centralized dependencies. Plus, SKALE's unique pooled security model with ~$1B staked enables developers to deliver a high-speed, seamless user experience without gas fees or latency.

$22,100,000 CB
FUNDING

$535,301,563 CMC
VALUATION

1 LI
EMPLOYEES CH

## Solana

Solana is a highly functional open source project that banks on blockchain technology's permis-sionless nature to provide decentralized finan-ce (DeFi) solutions. While the idea and initial work on the project began in 2017, Solana was officially launched in March 2020 by the Sola-na Foundation with headquarters in Geneva, Switzerland. The Solana protocol is designed to facilitate decentralized app (DApp) creation.

**Token Ticker:** SOL
**Sub-Category:** Platform & Protocol

$335,800,000 CB
FUNDING

$52,704,777,819 CMC
VALUATION

4 [2]
EMPLOYEES CH

## Status

The Status Network builds decentralized technologies ranging from protocol-level infrastructure to consumer applications, forming an open-source, peer-to-peer technology stack. The open set of projects contains products, tooling, and infrastructure to enable local societies and economies to thrive, allow others to build new products and services suited to their specific needs, and help local communities to take back sovereignty and remove the reliance on third parties.

**Token Ticker:** SNT
**Sub-Category:** Platform & Protocol

$107,664,907 CB
FUNDING

$237,657,521 CMC
VALUATION

4 CC
EMPLOYEES CH

## Streamr

Streamr provides decentralized infrastructure for real-time data. Our goal is to enable data to be transported, shared, and monetized securely and scalably without intermediaries. By facilitating new types of data pipelines and ecosystems, we support and accelerate the birth of Web 3.0, in which decentralized applications can securely exchange data and value. The Streamr Network is a middleware solution to be leveraged by any decentralized application, such as Web 3.0 applications or blockchain networks.

**Token Ticker:** DATA
**Sub-Category:** Data & Analytics

$30,000,000 CC
FUNDING

$89,126,682 CMC
VALUATION

4 CC
EMPLOYEES CH

## Tezos

Tezos is a self-upgradable and energy-efficient Proof of Stake blockchain with a proven record of security and scalability. In 2021, Tezos recorded over 50 million transactions with a carbon footprint of just 17 individuals. Seamlessly adopting innovations without disruption, Tezos is designed to evolve and built to empower. The Tezos Foundation is located in the Crypto Valley.

**Token Ticker:** XTZ
**Sub-Category:** Platform & Protocol

$23,200,000 CC
FUNDING

$3,799,072,176 CMC
VALUATION

18 CC
EMPLOYEES CH

## Velas

Velas is the world's fastest EVM compatible chain. Velas is a full hybrid EVM/eBPF chain of Solana and Ethereum, that inherited the best from both: security, scalability, high performance, 1.2-sec finality, extremely low fees, and Solidity support.

**Token Ticker:** VLX
**Sub-Category:** Platform & Protocol

$10,000,000 CC
FUNDING

$821,617,045 CMC
VALUATION

3 CC
EMPLOYEES CH

## Waves Platform

Waves creates the economics of free, perfect and instant. The Waves Platform is a global public blockchain platform, founded in 2016. Waves Platform's mission is to reinvent the DNA of entrepreneurship around the world by providing a shared infrastructure, offering easy-to-use, highly functional tools to make blockchain available to every person or orga-nisation that can benefit from it.

**Token Ticker:** WAVES
**Sub-Category:** Platform & Protocol

$142,000,000 CB
FUNDING

$1,557,922,238 CMC
VALUATION

4 LI
EMPLOYEES CH

## Web3 Foundation

Our mission is to nurture cutting-edge applications for decentralized web software protocols. Our passion is delivering Web 3.0, a decentralized and fair internet where users control their own data, identity, and destiny. We support Web 3.0 teams and open-source projects through funding, advocacy, research, and collaborations. Our flagship protocols are Polkadot and Kusama.

**Token Ticker:** DOT
**Sub-Category:** Platform & Protocol

$293,700,000 CB
FUNDING

$26,387,798,239 CMC
VALUATION

31 CC
EMPLOYEES CH

# DEFI 2.0 & BEYOND: NEW APPROACHES TO DECENTRALIZED LIQUIDITY

**In 2021, decentralized finance (DeFi) applications continued to attract many users seeking access to decentralized trading and yield strategies. Part of the appeal of DeFi is that users can gain exposure to token-based protocols in their infancy before a protocol gains widespread adoption and its token is listed on a centralized exchange.**

The hottest new DeFi tokens emerge first on decentralized exchanges (DEXs) based on automated-maker maker (AMM) liquidity pools. Compared to centralized and order-book-based models, pool-based DEXs like Bancor offer an easy way for protocols to build transparent, on-chain liquidity in their token, distribute tokens to their community and incentivize long-term usage of their protocol. This has led to pool-based DEXs attracting over $30b in locked value across thousands of tokens.

A strategy employed by DeFi protocols to build liquidity in their tokens is to send "liquidity mining" or "yield farming" rewards to their pools as an additional incentive for users who deposit tokens. Depositors stand to earn a percentage of trading fees earned by the pool and a share of the pool's rewards.

However, liquidity mining has proven to be a largely ineffective strategy for attracting sustainable decentralized liquidity in a token. This is due to "mercenary" yield farmers who "farm and dump" token rewards and immediately withdraw their deposits once rewards expire.

A key reason why loyal token holders are reluctant to hold their tokens in a pool after rewards expire is because of the risks associated with liquidity pools. The main risk, known as divergence loss or "impermanent" loss, occurs when the price of paired assets in a pool diverge. The price divergence may leave you holding less of the token that increased in price and more of the token that decreased. Over time, this can cause the cumulative value of your pooled tokens to be worth less than simply holding the assets in your wallet.

Impermanent loss inhibits broad and sustainable involvement in decentralized liquidity pools and causes holders to flee pools when rewards expire.

A new wave of so-called "DeFi 2.0" protocols have sought to introduce alternative models to liquidity mining. One approach encourages DAOs to sell discounted tokens (via "bonds") in exchange for pool tokens. Through this process, the DAO receives pool tokens in its treasury, which represent fee-generating shares in its pools, accruing what has been called "Protocol-Owned Liquidity" (POL).

While DAOs seeking to "own" their liquidity is generally a positive trend for the industry, the current approach to POL has shortcomings. Among them is that while a protocol may "own" their pool tokens, the pool tokens are still exposed to IL, and the effects of mercenary liquidity are only barely curtailed. Bonding offers to sell the protocol's tokens at a mark-down in exchange for pool tokens. This creates an arbitrage opportunity that leads to slow but persistent value loss in the acquired pool tokens. As the token price falls vs. the counterpart (e.g., ETH) due to the bonding process, the protocol suffers negative returns and depletes its treasury while debasing its token value. Ultimately, the protocol has painted itself into a similar corner as it does with liquidity mining.

In late 2020, Bancor launched a new model for decentralized liquidity called Bancor Safe Staking, which fully protects depositors from the risk of IL. Combined with single-token exposure, this feature has helped the protocol attract upwards of $2b in total value locked (TVL). Bancor depositors earned over $250m in IL-free revenue in the past year.

Safe Staking offers a unique proposition to DAOs: Generate POL that is protected from IL. DAOs deposit their treasuries in Bancor and receive pool tokens that produce on-chain yield for the DAO with full "risk-on" exposure to their token and without subjecting treasury funds to value leakage from IL. We've already seen a wave of DAOs deposit their treasuries into Bancor, including KeeperDAO, yearn DAO, UMA Protocol, Paraswap, BarnBridge, Harvest Finance, Saffron Finance, and more.

The innovation of "community-sourced liquidity" powered by liquidity pools cannot be understated. A financial system is only as decentralized as its liquidity, and liquidity pools allow permissionless blockchain ecosystems to emerge where liquidity is spread across countless participants. We're excited to pioneer new solutions that make it even easier for DAOs and token holders to support sustainable decentralized liquidity.

**Nate Hindman**
Contributor to Bancor Protocol

# DEFI EXPERIENCES AT SWISSBORG

**DeFi, or the decentralized finance movement, uses traditional financial instruments such as loans and credits in the decentralized cryptocurrency space, providing an alternative to conventional financial institutions.**

While most think of 2020 as the boom year for DeFi, the ecosystem saw significant growth in 2021. Total Value Locked increased from under $20 billion at the end of December 2020 to $100 billion one year later - up by 500%.

This is still microscopic in comparison to the size of traditional financial markets, which means there is plenty of room for growth.

The most significant advantage of DeFi is that those hodlers who have digital assets staked can loan to those who need them and make high returns. Those who borrow, in turn, have more leverage to invest by accessing a new line of credit that comes directly from another individual. This is done with a P2P smart contract on the ethereum blockchain, which is validated by the blockchain community instead of a central bank or authority.

Our motivation for creating and growing SwissBorg, a platform that merges the off-chain and on-chain worlds, was to disrupt centralized banking and finance. Our goal, however, is not to throw out the baby with the bathwater but to preserve what was good in the traditional world of finance and make it better and more equitable.

The drawback with DeFi platforms is their complexity. Investors have to own multiple wallets, interact with smart contracts and own ETH tokens in addition to paying potentially skyrocketing transaction costs. While their ecosystem removes intermediaries and creates yields for stable coins, they are not user-friendly and accessible for mass adoption.

SwissBorg contributes by bridging the gap between two approaches and making DeFi more accessible. A DeFi that befriends centralized finance (CeFi) reflects our vision of a new space where more people can engage in finance, circumventing third-party authorities while benefiting from traditional financial instruments and strategies.

Our first attempt at decentralization was holding an ICO where 24k contributors from every corner of the globe helped us launch our project. We followed the ICO with two pathbreaking decentralized voting Referendums where a record number of more than 6000 individual wallets participated. We spent two years building a team and a showcase product, a crypto wealth management platform that would make crypto investing easy for everyone.

But we did more. We kept our promise of nurturing an ecosystem and engaging our community in our development and decision-making. We ran two of the earliest referendums on the blockchain, allowing our community of token holders to decide the form and direction our crypto wealth management app should take.

We don't want to grow alone; we want to lift a tribe. We have created a DAO platform where our community members contribute and are rewarded for using their individual or collective skills to perform tasks or implement projects.

In December of 2020, we launched Smart Yield wallets, offering the benefits of DeFi lending to our community of app users without the financial or technological barriers to entry. In just three taps, users could add tokens to their yield wallets in the SwissBorg app and instantly start earning returns of up to 37% per annum.

Once their tokens were in the yield wallet, SwissBorg's strategy optimizer would scan the market daily to find the best yielding opportunities available for the lowest level of risk. The optimizer evaluated liquidity risk, smart contract risk, market risk, and strategy risks to offer the best risk-return ratio, empowering our users to generate returns without performing this due diligence independently.

Over the course of a year, we added Smart Yield wallets to eight different tokens, including Bitcoin, Ethereum, and Binance Coin. Over 170,000 users joined the Smart Yield wallets, over $1 billion in assets were added, and nearly $30 million was earned.

The best part is that this is step one of our journey. In 2022, we have big plans to offer even more passive income tools to our users, which will give them the flexibility to choose their preferred level of risk and return. As a result, users will be able to customize their crypto portfolio from the palm of their hand.

We believe to reach more people and achieve mass adoption, bridging the old and the new to provide the most accessible and straightforward solution is the best approach. You cannot replace the elitism of the old world of finance with the complicated technology of DeFi. If you truly want to help the masses, you need to simplify the disruption.


**Anthony Lesoismier**
CSO, SwissBorg

02

# BLOCKCHAIN FINANCIAL INDUSTRY

- ASSET MANAGEMENT & INVESTMENT
- ATM, BROKER & OTC
- CRYPTO BANKS
- CRYPTO EXCHANGES
- LENDING & FUNDING
- PAYMENT & STABLETOKEN
- WALLET & VAULT

Source: Corporate Contact (CC); CrunchBase (CB); IcoBench (IB); TrackIco (TI); Desk Research/Press (DR); Coinmarketcap (CMC); Corporate Website (CW); LinkedIN (Li), Estimate (2), No information (N/A)

## 21Shares

Token Ticker: N/A

Sub-Category: ATM, Broker & OTC

Zürich-based 21Shares AG is the world's premier issuer of crypto exchange-traded products, with over $1 billion in AUM across eleven index, single-asset, and inverse crypto ETPs listed on the Swiss SIX, Deutsche Börse, & Weiner Börse.

$15,000,000 CC
FUNDING

$700,000,000 CC
VALUATION

20 LI
EMPLOYEES CH

## AAVE

Token Ticker: AAVE

Sub-Category: Lending & Funding

Aave (fun fact: the name is taken from the Finnish word for "ghost") is a decentralised, open-source, and non-custodial liquidity proto-col on Ethereum. Depositors earn interest by providing liquidity to lending pools, while borrowers can obtain loans by tapping into these pools with variable and stable interest rate options. Aave Protocol is unique in that it tokenizes deposits as aTokens, which accrue interest in real time. It also features access to Flash Loans and Credit Delegation as unco-llateralised loan options.

$49,000,000 CB
FUNDING

$3,434,662,865 CMC
VALUATION

2 LI
EMPLOYEES CH

## Algotrader

Token Ticker: N/A

Sub-Category: ATM, Broker & OTC

Available on-premise or in the cloud, AlgoTrader is an institutional-grade quantitative trading and trade execution solution for conducting quanti-tative research, trading strategy development, strategy back-testing and automated trading for both traditional finance and crypto finance. AlgoTrader provides everything a buy-side or sell-side firm requires to run its quantitative trading and trade execution operations. It was the very first and most advanced quantitative trading and trade execution software to allow automated trading of Bitcoin and other digital assets. Based in Zurich, New York, and Singa-pore, AlgoTrader operates globally.

$6,600,000 CB
FUNDING

$50,000,000 2
VALUATION

17 LI
EMPLOYEES CH

## Axedras

Token Ticker: N/A

Sub-Category: Asset Management & Investment

Axedras is a DLT / blockchain-based infrastructure and application provider with a vision to connect and digitalize the precious metal industry. We combine bullion market expertise and cutting-edge information technology to create tremendous benefits for the stakeholders of the precious metal industry on a global scale. aXedras has developed a distributed Corda application for product and data integrity within the bullion market: the Bullion Integrity Ledger™.

$10,000,000 CB
FUNDING

$50,000,000 N/A
VALUATION

13 LI
EMPLOYEES CH

## Bitcoin Suisse

Token Ticker: N/A

Sub-Category: ATM, Broker & OTC

Bitcoin Suisse is the Swiss crypto-finance and technology pioneer and market leader. Bitcoin Suisse has helped to shape the crypto and blockchain ecosystem in Switzerland and has been a driving force in the development of the Crypto Valley. As a regulated Swiss financial intermediary, Bitcoin Suisse offers prime brokerage, trading, custody, lending, staking, and other crypto-financial services for private and institutional clients.

$50,500,000 CC
FUNDING

$500,000,000 CC
VALUATION

240 CC
EMPLOYEES CH

## Bitmex

Token Ticker: BMEX

Sub-Category: Crypto Exchanges

BitMEX is a P2P crypto-products trading platform. It is one of the world's leading cryptocurrency derivatives exchanges with a fully verified user base and the creator of the Perpetual Swap. With its upcoming Spot, Brokerage, Custody, Information Products, and Academy businesses, BitMEX is a leading force in the industry with excellent platform performance alongside top-tier liquidity and security.

$2,500,000 2
FUNDING

$500,000,000 2
VALUATION

2 LI
EMPLOYEES CH

## Bittrex Global

BITTREX GLOBAL

Token Ticker: N/A

Sub-Category: Crypto Exchanges

Bittrex Global provides a proven and secure plat-form for its customers to access the opportu-nities of digital asset trading. Built on Bittrex's cutting-edge technology, Bittrex Global provides an institutional grade experience for professional and novice customers alike.

$5,000,000 [2] FUNDING

$500,000,000 [2] VALUATION

11 [LI] EMPLOYEES CH

## Crypto Finance

CRYPTO FINANCE

Token Ticker: N/A

Sub-Category: ATM, Broker & OTC

The Crypto Finance Group provides institutional and professional investors products and services with a level of quality, reliability, and security that is unique in the digital asset space today. The group provides asset management, with the first regulated asset manager for crypto asset funds authorised by FINMA; brokerage services for 24/7 crypto asset trading; and crypto asset storage infrastructure and toke-nisation solutions. Since its founding in 2017, the group has been recognised several times, including as a Crypto Valley Top 50 blockchain company, Top 100 Swiss Start-up, and 2019 Swiss FinTech Award winner.

$36,100,000 [CB] FUNDING

$200,000,000 [2] VALUATION

54 [LI] EMPLOYEES CH

## curve.fi

Curve

Token Ticker: CRV

Sub-Category: Crypto Exchanges

Curve is an exchange liquidity pool on Ethe-reum (like Uniswap) designed for (1) extre-mely efficient stablecoin trading (2) low risk, supplemental fee income for liquidity providers, without an opportunity cost.
Curve allows users to trade between DAI and USDC with a bespoke low slippage, low fee algorithm designed specifically for stablecoins and earn fees.

$2,500,000 [2] FUNDING

$2,309,215,749 [CMC] VALUATION

1 [2] EMPLOYEES CH

## Enzyme

enzyme

Token Ticker: MLN

Sub-Category: Asset Management & Investment

Enzyme empowers you to build and scale investment strategies of your choice - from discretionary and robo to ETFs and market making. Security is our priority. Our second generation smart contract-enforced platform is thoroughly tested and audited before any mainnet deployments are made.

$3,000,000 [CC] FUNDING

$159,122,205 [CMC] VALUATION

1 [LI] EMPLOYEES CH

## Fiat 24

Fiat24

Token Ticker: N/A

Sub-Category: Payment & Stabletoken

R Saphirstein AG is a Swiss financial institution directly regulated by FINMA. Fiat24 is a payment application developed by SR Saphirstein AG for its retail customers. Fiat24 attempts to use blockchain technology to change the way existing banks operate and thus increase efficiency.

$5,000,000 [2] FUNDING

$130,000,000 [2] VALUATION

11 [LI] EMPLOYEES CH

## LCX

LCX

Token Ticker: LCX

Sub-Category: Crypto Exchanges

LCX, the Liechtenstein Cryptoassets Exchange, is pioneering a blockchain infrastructure bridging the traditional monetary system and the fast-moving trusted technology landscape. The company focuses on tokenization of assets, utility and security token offerings, and advanced trading tools.

$8,500,000 [CB] FUNDING

$$130,196,611 [CMC] VALUATION

6 [LI] EMPLOYEES CH

## Metaco

METACO

Token Ticker: N/A

Sub-Category: Wallet & Vault

METACO is the leading provider of security-critical infrastructure enabling financial institutions to enter the digital asset ecosystem. The company is trusted by top banks, exchanges and infras-tructure providers globally.

$20,000,000 [CB] FUNDING

$80,000,000 [2] VALUATION

18 [LI] EMPLOYEES CH

## Mt Pelerin

Mt Pelerin

Token Ticker: N/A

Sub-Category: ATM, Broker & OTC

Mt Pelerin is providing products and services bridging the crypto world with traditional finance. It was bootstrapped by its own community through equity crowdfunding that raised more than $2M in 2018. Since then, Mt Pelerin has become one of the leading actors in asset tokenization with its Bridge Protocol platform and provides unique crypto services through its mobile app Bridge Wallet. It is currently working on creating a tokenized full-reserve financial institution in Switzerland.

$2,150,000 [CC] FUNDING

$90,000,000 [CC] VALUATION

12 [CC] EMPLOYEES CH

## Nexo

Nexo is the world's leading regulated finan-cial institution for digital assets with $4 billion in assets under management. The company's mission is to maximize the value and utility of cryptocurrencies by offering tax-efficient Instant Crypto Credit Lines™, a high-yield Earn on Cryp-to & Fiat suite, and sophisticated trading and OTC capabilities, while providing the top-tier custodial insurance and military-grade secu-rity of the Nexo Wallet. Nexo has processed $5+ billion for 1,000,000+ users across more than 200 jurisdictions.

**Token Ticker:** NEXO
**Sub-Category:** Lending & Funding

**$52,500,000** CB
FUNDING

**$1,337,909,208** CMC
VALUATION

**20** CC
EMPLOYEES CH

## SEBA Bank AG

SEBA Bank is a pioneer in the financial industry and is the only global smart bank providing a fully universal suite of regulated banking services in the emerging digital economy. In August 2019, SEBA Bank received a Swiss banking and securities dealers license, and in September 2021 the CISA license. The broad, vertically integrated spectrum of services combined with the highest security standards, make SEBA Bank's value proposition unique.

**Token Ticker:** N/A
**Sub-Category:** Crypto Banks

**$245,600,000** CB
FUNDING

**$750,000,000** 2
VALUATION

**110** CC
EMPLOYEES CH

## SwissBorg

SwissBorg is democratizing wealth management by making it fun, fair, and community-centric. SwissBorg holds two licenses to provide Virtual Currency Exchange and Virtual Currency Wallets internationally. We believe that blockchain technology can empower everyone to control their wealth and that this is the next step towards a world of decentralized nations, where every individual is welcome and is fairly rewarded for their contributions.

**Token Ticker:** CHSB
**Sub-Category:** ATM, Broker & OTC

**$52,400,000** CB
FUNDING

**$594,142,667** CMC
VALUATION

**59** LI
EMPLOYEES CH

## Sygnum Bank AG

Sygnum is the world's first digital asset bank, and a digital asset specialist with global reach. With Sygnum Bank AG's Swiss banking licence, as well as Sygnum Pte Ltd's capital markets services (CMS) licence in Singapore, Sygnum empowers institu-tional and private qualified investors, corporates, banks and other financial institutions to invest in the digital asset economy with complete trust.

**Token Ticker:** N/A
**Sub-Category:** Crypto Banks

**$120,000,000** DR2
FUNDING

**$800,000,000** 2
VALUATION

**120** CC
EMPLOYEES CH

## Taurus Group

Taurus is a technology company providing end-to-end digital asset infrastructure for financial insti-tutions. Multi-assets, multi-blockchains. EU market leader with more than 1 bank out of 2 running Taurus infrastructure. We offer a suite of applica-tions to manage the entire lifecycle of any digital assets (private assets, crypto assets and digital currencies) in one platform: issuance, tokenisa-tion, custody and blockchain communication. Easy to deploy or integrate: API-based, availa-ble on premise or SaaS. Future-proof solutions: our engineers are among the few teams in the world that master the full technology stack across software development, secure DevOps, crypto-graphy and blockchain technology.

**Token Ticker:** N/A
**Sub-Category:** Crypto Exchanges

**$10,900,000** CB
FUNDING

**$100,000,000** 2
VALUATION

**28** LI
EMPLOYEES CH

## UTRUST

Utrust is the leading cryptocurrency payment solution designed to modernize the finance and payments industry and solve the problems of traditional payment methods by offering instant transactions and immediate crypto-to-cash settlements for the merchant.

**Token Ticker:** UTK
**Sub-Category:** Payment & Stabletoken

**$21,000,000** CB
FUNDING

**$146,562,779** CM
VALUATION

**4** LI
EMPLOYEES CH

# NFTS — WHY THE FUTURE IS NON-FUNGIBLE

**The first time I heard the term Non-fungible Tokens (NFTs), I immediately associated it with fungi, or the lack thereof. I am well aware that these tokens cannot be used to grow fungi, yet, I will forever correlate the term NFT with mushrooms. When you look at some of the artwork that has been turned into NFTS, my correlation may not be that far-fetched.**

Etymology aside, non-fungible means these are not serially minted tokens; instead, they are unique. Thus, these tokens are not a means of payment, although they can be traded. In this case, I believe the term token is misleading as it implies a denomination of a cryptocurrency in most of our minds.

## Digital ownership

NFTs are a digital embodiment of something created or existing in the physical or virtual world, generated by minting a unique (non-fungible) token and linking it to a blockchain network.

As a comparison that might make the difference between fungible and non-fungible easier to understand, we can consider the difference between a cinema ticket and a plane ticket. The cinema ticket can be used by anyone regardless of who bought it — they are all the same — fungible. On the other hand, a plane ticket cannot be used by anyone except the person it was bought for, as it is connected to their name and documents, making it non-fungible.

Some NFTs are digital in their entirety, like digital paintings, digitally recorded music, videos, etc. Additionally, NFTs are a very clever way of providing non-digital entities with their digital, blockchain-supported identity, which allows their owner to have a blockchain certificate of ownership over them. However, more importantly, it allows the owner to easily and securely sell their NFTs to anyone around the World.

This poses the question, where are the limits? What can and can't take the form of an NFT? Can a pint of beer be sold as a token? Theoretically and practically — yes. However, does it make sense for a brewery or a pub to create tokens for each pint of beer they sell? Probably not. On the other hand, for a winemaker with a limited supply of high-quality wines, it might make sense to create NFTs for each bottle of wine they manufacture. This way, the bottles are immediately put on auction, and expensive wine lovers worldwide can have the opportunity to bid on them even before they are made — thus, by holding the non-fungible token, they can prove that they bought the precious wine bottle.

The same applies to real estate, holiday reservations, video games, collectibles like digital Pokemon character cards or digitally recorded NBA moments, and other commodities and services. Yes, it seems this is the direction the world is going. Stuff is going to be pre-ordered and bid on. The limits of NFTs have not yet been explored. Certainly, there will be an almost unlimited quantity of pretty much useless NFTs created and forgotten, especially in the beginning, a lot of overpriced artwork sold for exorbitant amounts of money just because of its novelty value. Nevertheless, the future of NFTs is undoubtedly bright, as, through their existence, ownership and transfer of ownership over things are made that much simpler.

## NFTs in the æcosystem

In the first quarter of 2021, more than $2billion was spent on NFTs. With such vast market potential, it is not surprising that every successful blockchain enables NFT creation and trading on its network. Logically, æternity is joining the effort to digitize everything by providing its users a stable NFT standard. Although some groundwork for establishing an NFT standard has been done in the past, there is now a dedicated team of æ community members with an approved grant application to the æternity Foundation working hard to bring an NFT standard to the æcosystem.

As it's stated in the application, the æ NFT system is currently in its internal testing phase, and an official public release date is scheduled for July 30th. The team of talented developers, Plenity Anstalt (Henning Diedrich, Arjan van Eersel and Marcelo Alaniz) is a shining example of how decentralized blockchain development is supposed to be. Community members are building on top of the existing blockchain base, for the users, supported by the community and the blockchain foundation. Although there are many in existence, very few blockchains boast having such a proactive and talented community as æternity.

Personally, I can't wait to be able to NFTetise (yep, NFTetising is a word, I just came up with it) my writing sessions on the æternity NFT standard. "So, you'd like to hire me to write an article for you? Sure, you can bid on my NFT for an article up to 2000 words." OK, it might not work that way for a while longer, but there are much more important applications of æternity eagerly awaiting the possibility of creating and trading NFTs in the æcosystem.

**Danilo Polovina**
Marketing Content Specialist, æternity

# 03 BLOCKCHAIN OTHER INDUSTRIES

## ART

Source: Corporate Contact (CC); CrunchBase (CB); IcoBench (IB); TrackIco (TI); Desk Research/Press (DR); Coinmarketcap (CMC); Corporate Website (CW); LinkedIN (Li), Estimate (2), No information (N/A)

### 4ARTechnologies

4ARTechnologies is setting a new digital standard for the art world. The company combines the blockchain with its patented Augmented-Authentication-Technology and offers all art world participants more trans-parency, security and process efficiency. Us-ing a smartphone camera, the microscopic structure of an artwork is captured and con-verted into a digital “fingerprint”. Together with the provenance of an artwork, this fingerprint is secured with the blockchain as a “biometric passport”. Once stored, the artwork is safely and uniquely assigned to its digital certificate.

**Token Ticker:**
4ART

**Sub-Category:**
Art

**$46,000,000** CB
FUNDING

**$300,000,000** 2
VALUATION

**10** LI
EMPLOYEES CH

# THE MARKET DEVELOPMENTS THAT WILL SHAPE AND DEFINE 2022

**The crypto ecosystem saw a banner year in 2021. Bitcoin and Ethereum set multiple all-time highs while interest surrounding decentralized finance (DeFi) and non-fungible tokens (NFTs) reached a fever pitch.**

The crypto ecosystem saw a banner year in 2021. Bitcoin and Ethereum set multiple all-time highs while interest surrounding decentralized finance (DeFi) and non-fungible tokens (NFTs) reached a fever pitch.

The arrival of major institutional investors continued its momentum in full force, while concepts like Web3, DAOs, and the metaverse offered a glimpse into a decentralized, blockchain-powered future.

Some governments reoriented their monetary policy around Bitcoin, while others took the opposite tack.

The year 2021 was like no other. But this year is set to be even more action-packed and eventful. Here are the key trends, themes, and storylines to watch out for in 2022.

## Next-Gen Layer 1 Blockchains Continue Their Ascent

One of the most compelling stories of 2021 revolved around the rapid rise of Layer 1 blockchain ecosystems like Avalanche and Algorand. Each project made significant strides in building fast, scalable networks that can compete with Ethereum, which has been the dominant force for smart contracts.

But with the entry of these upstart projects, no one chain can claim a monopoly on all of the unique features and functionalities within these ecosystems, from decentralized exchanges and staking pools to NFT marketplaces.

What is even more notable is that projects like Avalanche and Algorand are accomplishing these feats while remaining committed to the core value of accessibility, accountability, and sustainability.

Speaking of Ethereum, 2022 will be a pivotal year for the network. Although the price of Ethereum surged nearly 500% in 2021, the blockchain's scalability issues were also apparent - with inconsistent transaction times and volatile swings in the price of gas. The continued rollout of Ethereum 2.0 will hopefully correct these issues.

## NFT Use Cases Evolve

NFTs crash-landed into the mainstream in 2021, earning high-profile visibility in major media outlets. Total yearly sales volumes eclipsed the $12 billion mark, and marketplaces like OpenSea shattered monthly record after monthly record. Led by collections like CryptoPunks and Bored Ape Yacht Club, the priciest non-fungible tokens transformed into in-vogue status symbols for crypto traders, athletes, and celebrities alike.

While actual utility was primarily concentrated around digital art, expect use cases to evolve over the coming year, particularly as major brands like Nike and Adidas enter the fray. Use cases are expanding from digital art to fashion, sports, music, and commerce, particularly as the medium becomes the norm rather than the exception. If major brands don't have their NFT strategy ready to go, they'd better get started!

## Crypto and Blockchain Go Green

Bitcoin received a lot of negative publicity in 2021 over its power consumption and growing energy footprint. While criticism isn't entirely fair (emissions from Bitcoin mining pale in comparison to the carbon footprints of several major industries), the discussion showed that the crypto space has a lot of work to do to build an environmentally sustainable model.

Fortunately, the emergence of proof-of-stake blockchains has dramatically reduced crypto's carbon footprint, with Algorand's consensus algorithm even reaching carbon neutrality. Coupled with the continued rollout of Ethereum 2.0 and the exodus of miners out of China following the country's ban on Bitcoin mining, expect to see a much greener crypto ecosystem as miners increasingly leverage renewable sources of energy - ameliorating lingering concerns over ESG standards from institutional investors along the way.

## All Eyes on the Metaverse

The arrival of an open, decentralized universe that places control in the hands of creators, gamers, developers, and traders represents a highly lucrative opportunity for businesses and institutional investors alike, with Grayscale viewing the space as a trillion-dollar revenue opportunity.

Projects like Decentraland and The Sandbox allow people to socialize, govern and earn tokens for their contributions means that virtual benefits are now spilling over into the physical world.

In the same way, brands and corporations will need to develop a comprehensive strategy for NFTs, organizations now need to figure out how to approach this new development, just like brands were forced to pivot into e-commerce at the turn of the millennium.

**Stephen Stonberg**
CEO , Bittrex Global

# TOP 50 CHALLENGER COMPANIES

The following startups have a good chance of being included in one of the next Top 50 Reports due to employee growth, increase in valuation, and contribution to the ecosystem.

#Metahash

Category:
Blockchain Technology

Cardstack

Category:
Blockchain Technology

Nimiq

Category:
Blockchain Technology

Eidoo

Category:
Blockchain Financial Industry

Aeternity

Category:
Blockchain Technology

CoreLedger

Category:
Blockchain Technology

Bity

Category:
Blockchain Financial Industry

Flov technologies

Category:
Blockchain Financial Industry

BLOCKv

Category:
Blockchain Technology

Lamden

Category:
Blockchain Technology

CustoDigit

Category:
Blockchain Financial Industry

Oxygen.org

Category:
Blockchain Financial Industry

Ambrosus

Category:
Blockchain
Other
Industries

Maps.me

Category:
Blockchain
Other
Industries

Cryptix

Category:
Blockchain
Other
Industries

Santiment

Category:
Blockchain
Other
Industries

Cysec

Category:
Blockchain
Other
Industries

Securosys

Category:
Blockchain
Other
Industries

Etherisc

Category:
Blockchain
Other
Industries

Utopia Music

Category:
Blockchain
Other
Industries

# BANKS ACTIVE IN CRYPTO

ARAB BANK SWITZERLAND | BANK FRICK | BBVA | BCN | BEKB | BCBE

bordier 1844 | GAZPROMBANK | Helvetische Bank | Hypothekarbank Lenzburg | incore

Julius Bär | MAERKI BAUMANN & CO. AG PRIVATBANK | NPB Neue Privat Bank | REYL innovative banking | SEBA BANK

Swissquote THE SWISS LEADER IN ONLINE BANKING | SYGNUM | UBP Union Bancaire Privée | Vontobel | Zarattini & Co Bank

# BLOCKCHAIN FOCUSED VENTURE CAPITAL FIRMS

AE VENTURES

BLOCKCHAIN VALLEY VENTURES

blufolio

Cardano Foundation

CV VC

L1D L1 Digital

LAKE STAR

PANGEA BLOCKCHAIN FUND

SICTIC

SIX

swisscom Ventures

Tezos Foundation

TOMA HAWK .VC

VI partners

# BLOCKCHAIN TECHNOLOGY SOLUTION PROVIDERS

AVANTGARDE FINANCE

AXLABS

DEON DIGITAL

EY Building a better working world

INACTA.

LUXOFT

Lykke

Papers.ch

pwc

STORM

swisscom Blockchain

ValidityLabs™

# BLOCKCHAIN AND CRYPTO SAVVY LAW FIRMS

BÄR & KARRER

BWB Rechtsanwälte AG Attorneys at Law Ltd

DALAW Digital Assets Legal Advisors

delacruz beranek RECHTSANWÄLTE · ATTORNEYS AT LAW

EY Building a better working world

FRORIEP

Homburger

Kellerhals Carrard

id est avocats

LE/AX

LENZ & STAEHELIN

mll

MME

NÄGELE

NKF

NIEDERMÜLLER RECHTSANWALT | ATTORNEY AT LAW

P&TS INTELLECTUAL PROPERTY

PST legal & consulting

pwc

wenger & vieli Rechtsanwälte

# 04

# CV VC PORTFOLIO

# INVESTMENT THESIS

We invest in blockchain because it's more than just technology. Blockchain is a new mindset as well as a game-changing "catalyst technology".

The mindset is one of decentralization, power to the community, and embedded trust. Blockchain technology can fundamentally transition some of society's biggest social, economic and political challenges of the past into solutions that will build a more sustainable future.

At CV VC, we believe that blockchain is the catalyst for tech megatrends reshaping the future. We support all features of blockchain as a transformative technology but focus mainly on two of its features which we believe will revolutionize the way forward for work, society, and economics:

1. Decentralization capacity. Blockchain allows for the democratization of the world's most valuable resources, transforms value systems, and creates new assets.
2. Trust capability. Blockchain is a distributed, robust, secure, privacy-preserving, and immutable record-keeping framework and, therefore, can positively transform the nature of trust, value sharing, and transactions. The use of blockchain technology has the potential to raise trust and legitimacy concerning the functioning of public, economic, and social institutions, most of which are suffering an unprecedented erosion of trust. Without trust, there is no way forward.

CV VC investment focus is on teams from across the world who are building the future, using blockchain technology as a catalyst to revolutionize how humanity works, lives, interacts, and transacts.

## CV VC investments are based on six fundamental pillars:

1. Abiding investors: We have been investing in early-stage tech disruptors since 2018, have a committed capital base, and expect to hold investments long-term.
2. Founders for founders: Our investments have full access to a dedicated investment and operational team, successful entrepreneurs themselves, and our complete ecosystem team at CV Labs.
3. Global ecosystemic ethos: We are a leading hub in the worldwide blockchain ecosystem. We contribute globally: advisory, regulatory, technical, networks, co-working, summits, and intelligence from our Swiss headquarters and global epicenters.
4. Industry flexibility: We invest and incubate at an early stage; blockchain is global and decentralized, so we invest everywhere. We invest in disruptors & enterprises that use blockchain to revolutionize the industries they serve.
5. The new economy: We invest in service providers building the infrastructure for the digital asset world, such as custody, market makers, KYC, and tokenization builders.
6. Investment bridge: We offer diversified exposure to blockchain technology alongside CV VC. Our investment certificates ("AMCs"), the Venture Capital focused "Blockchain Technology for Tomorrow ("T4T") AMC as well as our liquid crypto and digital asset AMCs have similar mechanics and economics as a traditional venture capital and investments funds - with the added benefit that they are a fully bankable investment certificate with a Swiss ISIN that can be added into any portfolio and sufficiently flexible to create bespoke solutions efficiently also for a more targeted investor universe if desired.

# CV VC PORTFOLIO

AdHash

Agryo

Asvin

Bitfreezer

Blocksport

Coinrule

DSENT

flovtec

Geon

iVE.ONE

MathforMoney

Orvium

Pravica

Proof of Impact

Ptolemy

Scorechain

Sprinter

Tezsure

Utopia

Vault Wines

Vereign

Xion

# 05
# ABOUT

# ABOUT

## CV VC

**We invest in Blockchain. Because it's more than just technology.**

Headquartered in Switzerland, the private venture capital company offers seed funding and an incubation program to global tech teams in exchange for equity. In addition, CV VC provides consulting and investment advisory to corporates. As an initiator of Crypto Valley which is the birthplace of Ethereum and home to 14 Unicorns, CV VC & CV Labs is the hub of Crypto Valley's acumen and a global force that is driving the fourth industrial revolution. CV VC has an entrepreneurial spirit as epitomized by its founders and board members who represent its ethos - Founders for Founders. These include Ex Swiss President Johann Schneider-Ammann, industrialist Alex Wassmer, entrepreneur Mathias Ruch, investment banker Olaf Hannemann, former Finnish Minister Anne Berner, and Philipp Rösler, ex Vice-Chancellor of Germany & Managing Director of World Economic Forum.

## PwC

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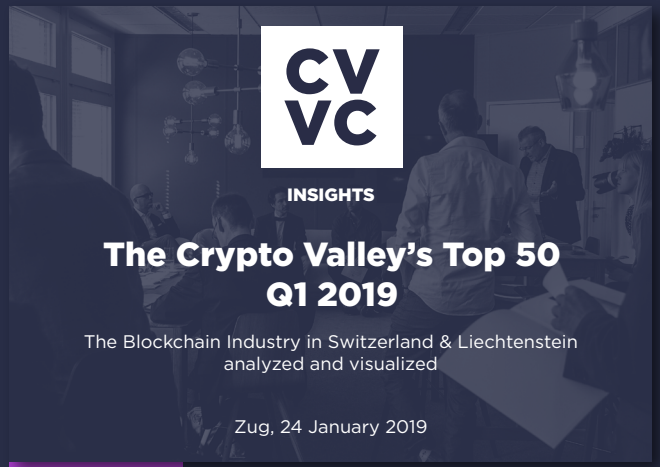


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