

# Piccolo Research

Independent research on blockchain startups and ICO's

## An independent review of Matic Network (MATIC)

19 April 2019 - Lennard Neo

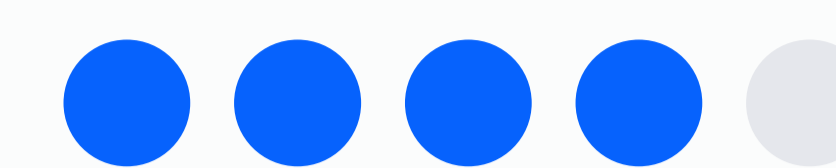
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# MATIC NETWORK (MATIC)

Spec Buy



## A Scalable Solution Modified from Plasma Framework

### Summary

Matic Network is a Layer 2 scaling solution that seeks to solve scalability issues while maintaining the network's true decentralised nature. The underlying framework is an adaption of the Plasma technology, and Matic seeks to address several limitations of Plasma. Their value proposition also includes providing better user experiences through smooth UX and a suite of support tools.



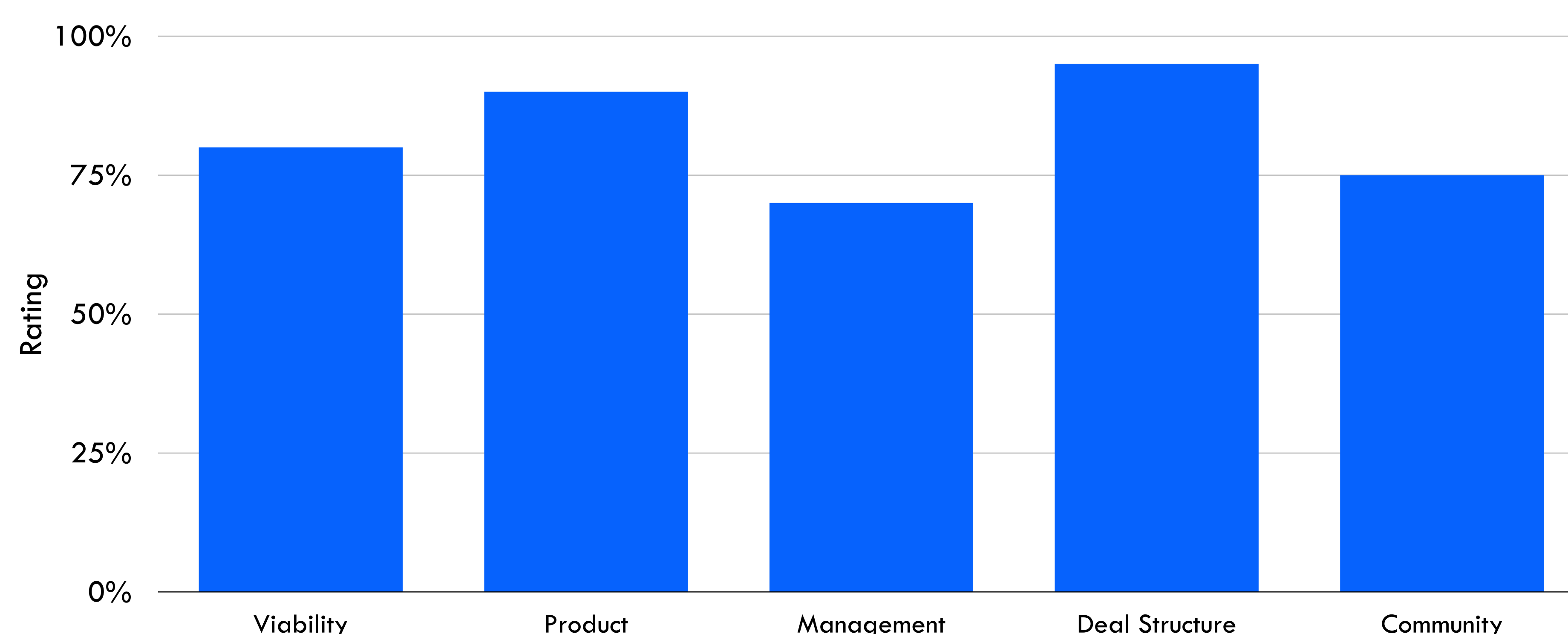
### Company Overview

Incorporated in 2017, with its core team in India, Matic Network has the vision to provide off/side chain scaling solutions without compromising on decentralisation. Adapted from the Plasma technology, Ethereum will be the first platform that Matic will implement its scalability integrations on.

Here are several issues that Matic Network seeks to resolve:

- Limitations of Plasma MVP
- Stability with high throughput, while maintaining a high level of decentralisation
- An added focus to refine user experience on existing platforms
- Enabling business to create large-scale dApps that reduces friction on real-world adoption
- Cross chain interoperability

### Birds-Eye View



### General

|              |                            |
|--------------|----------------------------|
| Ticker:      | MATIC                      |
| Website:     | <a href="#">Click here</a> |
| Sale Period: | 24 Apr 2019 08:00hrs (UTC) |
| White Paper: | <a href="#">Click here</a> |

### Sale info

|              |           |
|--------------|-----------|
| Pricing:     | \$0.00263 |
| Accepted:    | BNB       |
| Min Goal:    | NA        |
| Cap:         | \$5m      |
| Token Sale % | 19%       |
| Escrow:      | Yes       |
| Bonus:       | NA        |

### Checklist

|             |   |
|-------------|---|
| Management: | ✓ |
| Product:    | ✓ |
| Commercial: | ✓ |
| Interest:   | ✓ |
| Fulfilment: | ⚠ |

## Commercial & Technical Strategy

Matic Network utilises a two-prong approach to achieve high transaction speeds and decentralisation; 1) PoS (Proof of Stake) at the checkpoint level, 2) Block Producers at the block producing level. The team will deploy an enhanced version of the Plasma structure that will allow seamless, low-cost and fast transactions on the mainchain. Aside from Matic protocol, the team will also provide support by developing tools to help the ecosystem. The product is currently in testnet with the Alpha version of the mainnet launching soon.

Several core components of the product include:

- Checkpoints using PoS mechanism to provide finality on the mainchain
- Blocks are generated at ~1s intervals at negligible transaction fees
- 65k tps in a single sidechain
- Multi Chain support via horizontal scaling with side chains
- Interoperability across different blockchains, providing support for large DEX
- Support tools include:
  - Wallet – utilising WalletConnect Protocol, users can manage accounts easily with user-friendly interfaces
  - Dagger – real-time updates and notifications from Ethereum blockchain
  - Browser extensions

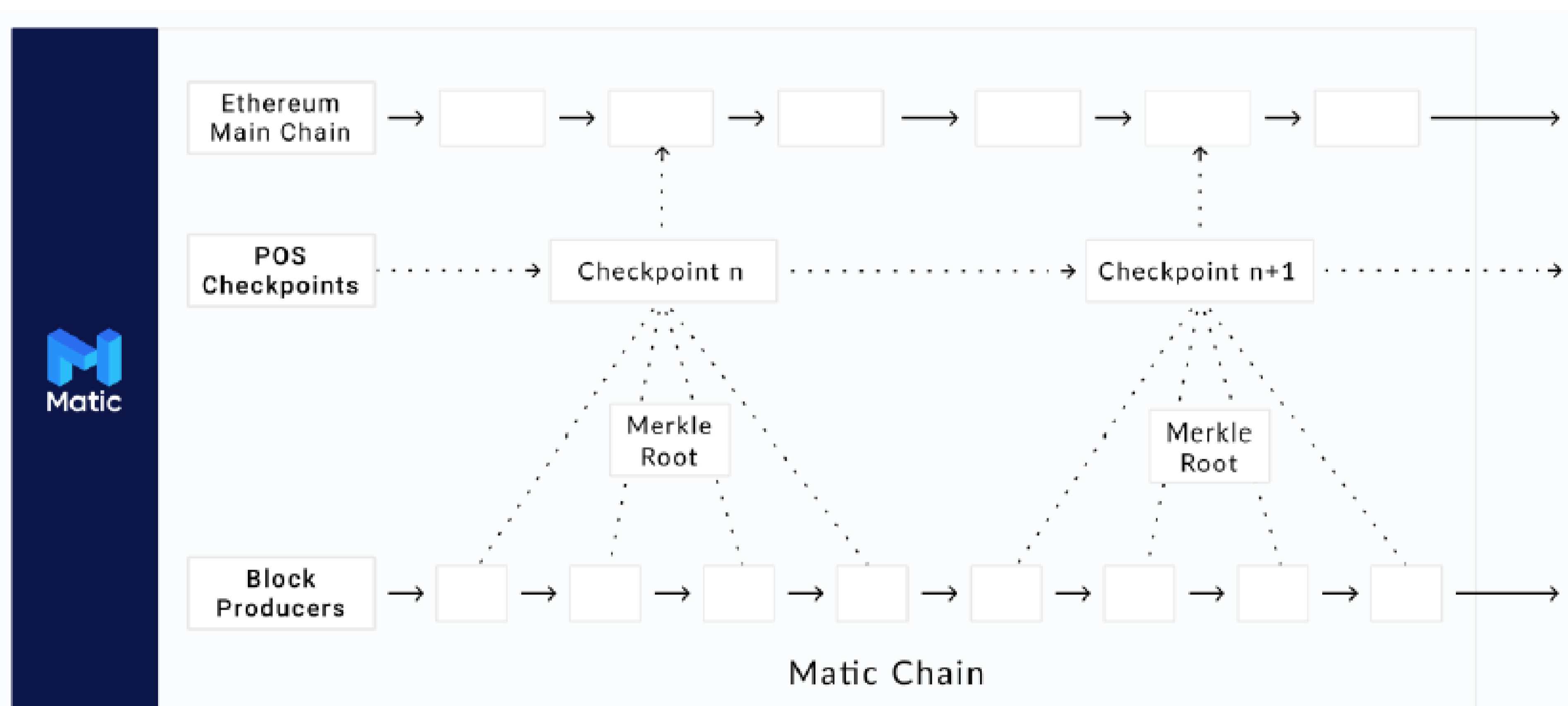


Figure: Matic Network model

## Roadmap

Matic Network has tracked their roadmap very closely, delivering all their milestones on time with some earlier than stipulated. Although most deliverables are on the technical front, they have also been active on the business front working closely with their partners and attending community meet-ups, summits and hackathons.

| Roadmap                         | Developments  | Status                      |
|---------------------------------|---|-----------------------------|
| Q3 2018                         | Payments on Matic testnet v1  | <i>Completed</i>            |
|                                 | ERC20 Support including Wrapped Ether - Matic Testnet                               | <i>Completed</i>            |
|                                 | Contracts on Kovan testnet  | <i>Completed</i>            |
|                                 | Dagger - Zapier Integration   | <i>Completed</i>            |
|                                 | Plasma Fast exits - NFT token   | <i>Completed</i>            |
| Q4 2018                         | API & SDK release v0.5  | <i>Completed</i>            |
|                                 | Matic Mobile App (Plasma chain & WalletConnect integration) - Alpha release         | <i>Completed</i>            |
|                                 | Developer docs – Testnet  | <i>Completed</i>            |
|                                 | API & SDK release v0.6 - Testnet  | <i>Completed</i>            |
|                                 | Matic Mobile App (Plasma chain & WalletConnect integration) - improvements to alpha | <i>Completed</i>            |
| Q1 2019                         | ERC721 support - Matic Testnet  | <i>Completed in Q4 2018</i> |
|                                 | Matic Mobile App (Plasma chain & WalletConnect integration) - beta release          | <i>Completed</i>            |
|                                 | Developer docs – Tutorials  | <i>Completed</i>            |
|                                 | PoS implementation for staker nodes – Testnet                                       | <i>Completed</i>            |
|                                 | Block explorer - alpha release  | <i>Completed</i>            |
|                                 | First DApps on Matic Network  | <i>Completed in Q4 2018</i> |
|                                 | ERC721/NFT Marketplace support - internal release                                   | <i>Completed</i>            |
|                                 | Alphanet - Matic Network - testnet version 2  | <i>Completed</i>            |
| API & SDK release v0.7          | <i>Completed</i>  |                             |
| Newly Added                     | Cryptostaw integration  | <i>Completed</i>            |
| Apr 2019                        | <b>Mainnet Alpha - Matic Network</b>  | <i>In Progress</i>          |
|                                 | NFT exit token - 0x integration - Kovan testnet                                     | <i>In Progress</i>          |
|                                 | Dagger support for Matic chain  | <i>Completed in Q1 2019</i> |
|                                 | Upgradable smart contracts  | <i>In Progress</i>          |
|                                 | Security audits and improvements  | <i>In Progress</i>          |
| May 2019                        | Verifier/Watcher node - Alpha release   |                             |
|                                 | NFT exit token - Dharma integration - Kovan testnet                                 |                             |
|                                 | DEX support on Mobile App   |                             |
| API & SDK release v1.0          |   |                             |
| Wrapped Bitcoin support - Matic |   |                             |
| Jun 2019                        | Verifier/Watcher - Fraud proofs challenges - beta                                   |                             |
| Jul 2019                        | Mainnet Beta - Matic Network  |                             |
|                                 | 0x protocol implementation on the Matic testnet                                     |                             |
|                                 | Plasma Fast exit services (integrable with any third-party Plasma implementation)   |                             |
| Aug 2019                        | NFT exit token - 0x integration - Ethereum mainnet                                  |                             |
| Sep 2019                        | Liquidity pool integration  |                             |
|                                 | <b>Matic Network - Mainnet</b>  |                             |
|                                 | Matic sidechain App Store   |                             |
|                                 | Bitcoin asset interoperability - testnet  |                             |
| Oct 2019                        | Governance research and pilot implementation  |                             |
| Nov 2019                        | Dharma protocol implementation on Matic testnet                                     |                             |
| Dec 2019                        | NFT exit token - Dharma integration - Ethereum mainnet                              |                             |
|                                 | Enterprise support for Matic sidechains   |                             |
|                                 | Enterprise services   |                             |
| Mar 2020                        | Generalized Fraud Proofs - Testnet Alpha  |                             |

## Team

The project comprises of a relatively small team of 12 employees, most of whom have less than 10 years of experience. However, the team's practical contributions in code developments on GitHub highlights their capabilities to an extent.

Jaynti Kanani (CEO) – 7+ years of work experience and an expert in software engineering. Core contributor of first Plasma MVP, and WalletConnect Protocol. Past experiences include Housing.com, Function Space, and Persistent Systems. He graduated from Dharmsinh Desai University with a bachelor's in information technology.

Sandeep Naiwal (COO) – 9+ years of experience with a background in Business Development and Consulting. Prior experiences include Deloitte, Welspun Group, and Founder of ScopeWeaver.com. He graduated from NITIE with an MBA in Technology, Finance and Supply Chain.

Anurag Arjun (CPO) – 12+ years of experience mainly in software product management. Previously with companies such as IRIS Business Services, SNL Financial, Dexter Consultancy (Co-Founder and Exited), Cognizant Technology Solutions. He holds a bachelor's in computing engineering from Nirma Institute of Technology.

Siddhartha Jain (VP, Operations & Marketing) – 2+ years of experience in project management. Previously worked as an intern in Shell, assistant project manager in EXL, and Data scientist at Mu Sigma. He holds a post-graduate diploma in business management from XLRI.

Bhavir Shah (Head of Engineering) – 5+ years of experience in software engineering. Past experiences include PaySense, Housing.com, Freestone Infotech. Graduated with a bachelor's in information technology from the University of Mumbai.

Addition team members include:

- 5 Blockchain/ Application Engineers
- 1 Project Manager
- 1 Community Manager

## Advisors

There are currently 3 advisors for Matic Network.

Esteban Ordano (Advisor) – Founder & CTO @ Decentraland

Pete Kim (Advisor) – Head of Engineering, Wallet @ Coinbase

Ari Meilich (Advisor) – Project Lead @ Decentraland

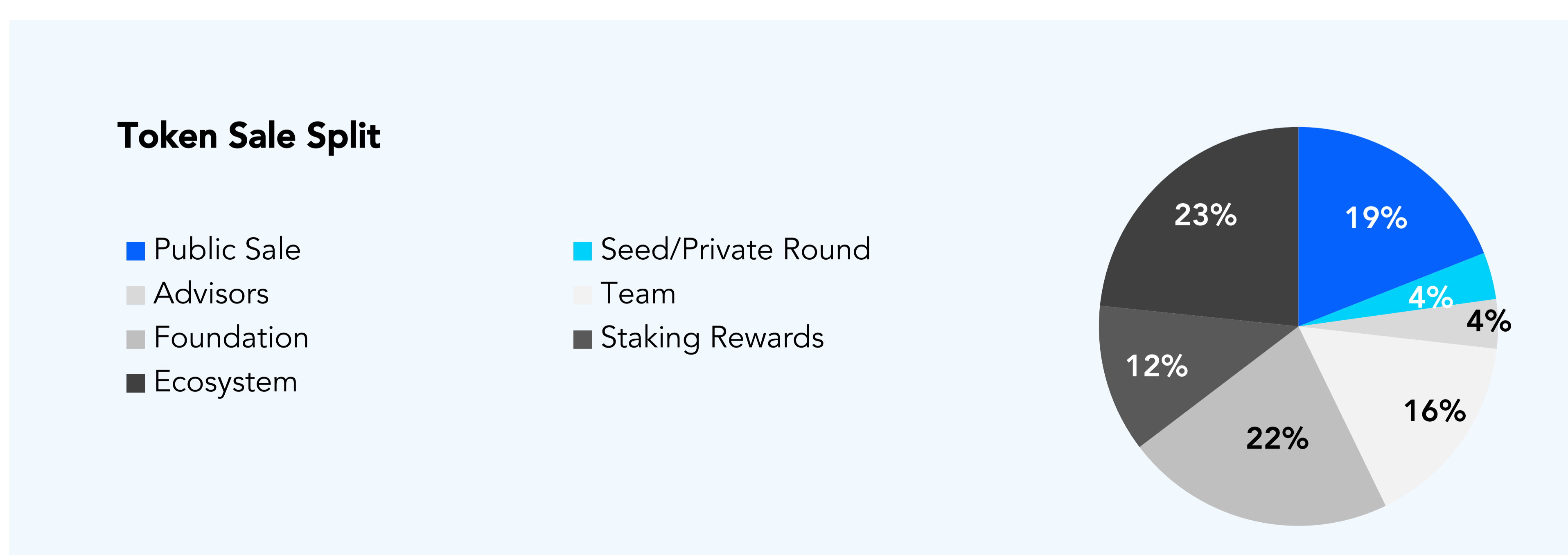
## Token Sale

Matic Network raised a total of \$615k (\$165k in Seed, \$450k in Private) in prior capital raising rounds. Total token supply is fixed with 22.8% allocated for all token sale rounds and 12% for staking rewards.

| Token Details                                    | Details   |
|--|---|
| <b>Public Sale Date</b>                          | 24 Apr 2019 08:00 hrs (UTC)   |
| <b>Sale Platform</b>                             | Binance Launchpad   |
| <b>Token Symbol</b>                              | MATIC   |
| <b>Token Type</b>                                | Utility   |
| <b>Issuance Platform</b>                         | Ethereum (ERC20)  |
| <b>Total No. of Tokens</b>                       | 10,000,000,000  |
| <b>Price per Token (Public)</b>                  | \$0.00263   |
| <b>Price per Token (Seed/Private)</b>            | \$0.00079 (Seed)<br>\$0.00263 (Private)   |
| <b>Accepted Tokens</b>                           | BNB   |
| <b>Softcap</b>                                   | NA  |
| <b>Hardcap</b>                                   | USD 5m (Investors own 19% if Hard Cap reached)  |
| <b>Market Cap Valuation</b>                      | USD 26.3m (Fully Diluted basis assuming hard cap reached)                                   |
| <b>Market Cap (Based on Initial Cir. Supply)</b> | USD 8.5m  |
| <b>Token Lockup (Investors)</b>                  | 50% unlock in the 1 <sup>st</sup> month, 50% unlock in 7 <sup>th</sup> month (Seed/Private) |
| <b>Token Lockup (Team)</b>                       | 1 year lock up and vesting every 6 months thereafter  |
| <b>Token Distribution</b>                        | Within 15 days after end of token sale  |

The main token functionalities of MATIC are of 2 folds:

- Currency/ payment transaction – MATICs circulated on the network will be used as a unit of exchange to quantify and pay fees associated with the consumption of computational resources
- Staking/ Mining – Users will be able to earn MATIC tokens through the PoS mining (Checkpoint layer) and validating blocks (Block Producer layer) by depositing their tokens



## Partnerships

Decentraland – A virtual reality platform powered by Ethereum. The partnership will enable Matic's scaling technology to increase efficiency on Decentraland's platform. They will also collaborate on research and generalised smart contracts.

0x Protocol – 0x is an open protocol for decentralised exchanges on Ethereum. Matic will work with 0x to enable instant, decentralised low-cost trades.

Quarkchain – Quarkchain is a permissionless blockchain with sharding technology. This collaboration will allow Matic to explore L2 scaling research and develop Plasma sidechain on top of Quarkchain.

Zebi – A platform that protects sensitive data, Zebi specialises in providing blockchain solutions to governments and corporates. Matic and Zebi will work together on privacy solutions and enterprise blockchains.

MakerDao – A decentralised autonomous organisation that governs DAI, a stable coin. Matic will allow DAI to scale using its sidechains.

Ankr Network – A distributed cloud computing platform that will utilise Matic's scaling technology to offer better user experience.

Portis – Portis seeks to streamline dApps into mainstream adoption and Matic will help Portis achieve scale and user experience.

Ripio Credit Network – A P2P microlending platform. Matic is working with Ripio to enable microloans using its plasma sidechains.

### **Matic has several DApps that are actively being developed:**

1. Decentraland marketplace
2. Cryptostaw – A P2P payments application using DAI
3. Pocket Full of Quarters – A universal currency used across different gaming platforms
4. Chainbreakers – A strategy-RPG game build on Decentraland universe
5. Bitwords – An advertisement exchange for publishers and advertisers
6. Plentix – A decentralised platform for the referral economy
7. Bankit – Fiat payments company looking to store transactions on a blockchain
8. Audacious Games – Developing a turned-based game on Ethereum
9. Dappos – Point of sale dApp for retail

## Community Engagement / Social Media

Matic Network has a couple of employees focusing on marketing and community developments. The team has constantly provided updates on Twitter and educating their community with weekly updates and articles on their Medium page. Albeit having both a Facebook and YouTube page, Matic did not list them officially on their website. On the community engagement front, Matic is focused on building the developer pool by sponsoring hackathons, hosting community meetups and collaborating with universities.

Here are the project social media statistics as per the report date:

- Telegram (English) – 9,900+ members
- Twitter – 2,460+ followers
- YouTube – 3,700+ views
- Medium – 290 Followers

## Competitor Analysis

There are several types of layer-2 scaling solutions in the market and Matic Network falls within the Sidechain/Plasma category. In our comparative analysis, we identified 2 specific peers that display technological similarities, whose tokens have been trading in the market for a decent amount of time.

| Project Name  | Matic Network                                | POA   | Loom Network                                |
|---|--|---|---|
| <b>Infrastructure Type</b>                            | Layer 2 scaling solution (Sidechain/Plasma)  | Layer 2 scaling solution (Sidechain/Plasma) | Layer 2 scaling solution (Sidechain/Plasma) |
| <b>Symbol</b>   | MATIC  | POA   | LOOM  |
| <b>Consensus Protocol</b>                             | PoS  | PoA   | DPoS  |
| <b>Multi-chain support</b>                            | Yes  | Yes   | Yes   |
| <b>No. of Validators/ Block Producers</b>             | 7-10   | 23  | 21  |
| <b>Block times</b>                                    | ~1s  | 5s  | <1s   |
| <b>Transaction per Seconds (TPS) Single sidechain</b> | Theoretical: 65k<br>Practical: 10k (testnet) | Theoretical: NA<br>Practical: 60            | Theoretical: NA<br>Practical: NA            |
| <b>Product Stage</b>                                  | Testnet                                      | Mainnet                                     | Mainnet                                     |
| <b>Mainnet Launch</b>                                 | Q3 2019                                      | Q4 2017                                     | Q3 2018                                     |
| <b>Initiation Year</b>                                | 2017   | 2017  | 2017  |
| <b>Current Token Price</b>                            | \$0.00263 (IEO)                              | \$0.0429                                    | \$0.0717                                    |
| <b>Market Cap Valuation</b>                           | \$8.5m (based on initial cir. supply)        | \$10.4m                                     | \$55.9m                                     |

Figures as of report date, Source: Coinmarketcap



## Strengths

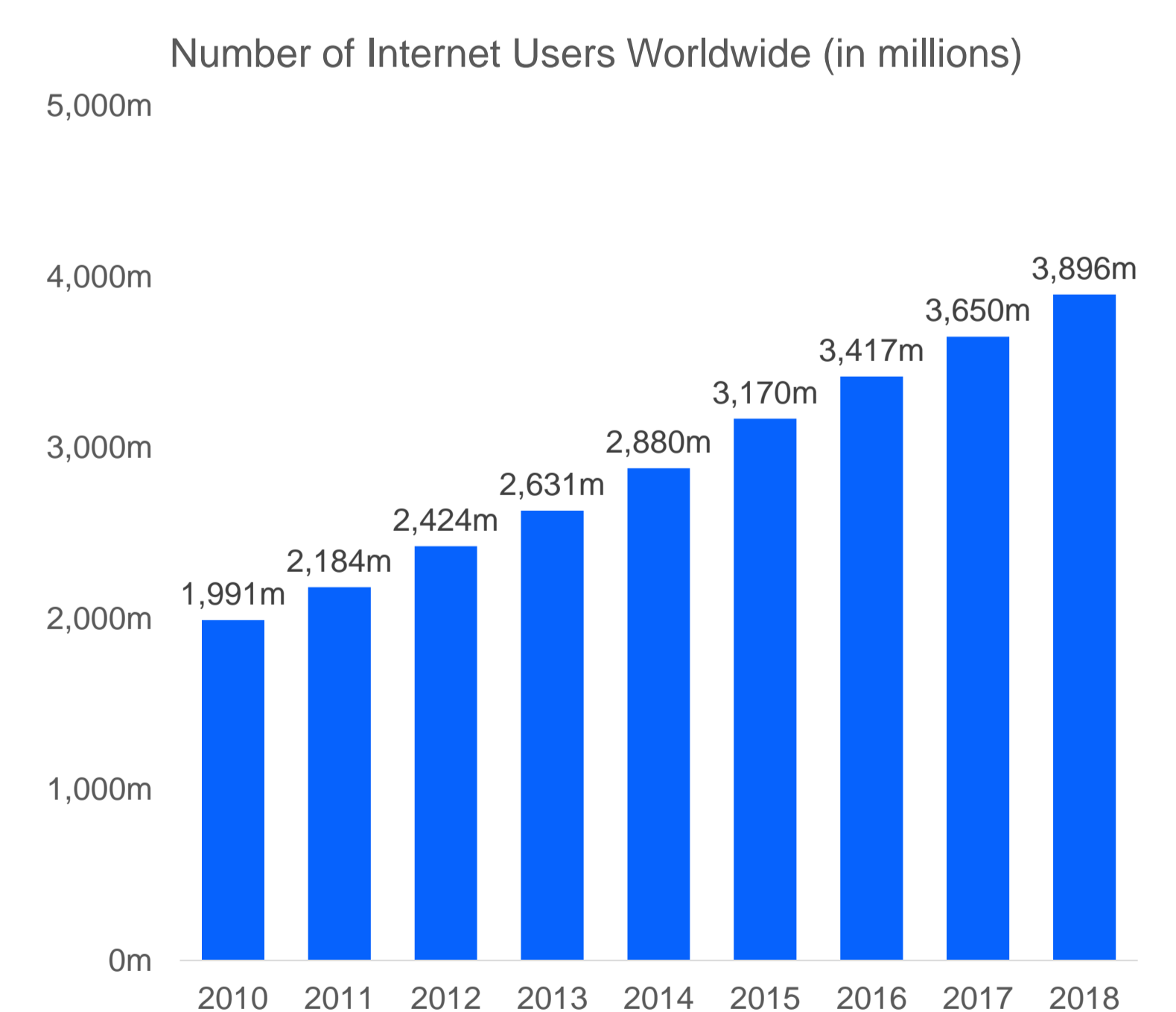
- Matic solves several limitations of the initial Plasma technology such as EVM compatibility (not just with UTXO) and ensuring smooth Plasma Exits
- The product can achieve 65k tps theoretically with internal testnet having speeds of 10k tps on a single sidechain, much higher than its peers
- A vision of a better UI/UX and support tools such as Dagger (with Zapier integration) creates efficiency and enable 1,400+ apps through real-time updates from Ethereum Blockchain
- CEO a core contributor to Plasma MVP and WalletConnect Protocol
- Traction of dApps built on top of their platform have been growing and coming to fruition
- Great deal structure with a low hardcap (\$5m), a high proportion of tokens (19%) sold to the public (vs 6% sold in previous IEOs on Binance), and a low initial market cap of \$8.5m

## Weaknesses

- Community and social media engagement have been relatively weak for the most part of 2018, however, it has improved over the past few months
- Private sale and Seed investors have 50% tokens unlocked in the first month
- On the whole, the project team and advisors lack depth and commercial experience compared to their competitors

## Opportunities

- Scaling off other scalability solutions – Even though Matic Network provides off-chain scalability, it can be used in conjunction with other Layer 1 and Layer 2 scaling solutions such as Sharding (e.g. Quarkchain) and State Channels (e.g. Celer, Raiden). Matic Network will have the ability to stack on top of other solutions, multiplying the total throughput factor of the parent chain.
- Targeting the Decentralized Finance (DeFi) market – Matic envisions DeFi as the major use case for their platform and is confident they will be able to generate value for their network participants. The DeFi market has a huge potential and is segregated by sectors such as lending, issuance & investing, derivatives, prediction, payments, etc. Using the number of internet users as a proxy, 3.9b users were reported to have internet access in 2018 with a CAGR of 8.75% since 2010. Therefore, an imminent need for scalability is required to enable platforms to handle the volume of users, who have every right to access DeFi services and eventually banking the unbanked.



## Threats

- Aside from sidechains/plasma sector, the competition to provide scaling solutions is immense especially in other areas such as state channel, and sharding.
- Usage of 'fraud proofs' implements a trust assumption that everything is correct until proven otherwise, allowing parent chain miners to censor transactions, which is a fundamental issue with sidechain architecture.

## Conclusion

In conclusion, Pico Research presents a '**Spec Buy**' and 4 stars rating on Matic Network. Adopting an alternative approach to the Plasma framework, the team has a unique proposition to solve several inefficiencies of scaling solutions. Aside from that, their focus on redefining user experience differentiates them from their peers and would eventually create value for their community and ecosystem.

Overall, for the reasons listed, Pico highlights several reasons that affirm our rating:

- Achieved 10k TPS in their testnet on a single sidechain, ranking them above their peers
- Providing support tools such as Dagger creates intangible value for the ecosystem
- Strong partnerships with an increasing number of dApps developed on their platform
- Tracking their roadmap closely and meeting their deliverables on time
- Decent deal structure with a low initial market cap (\$8.5m) and a high proportion of tokens (19%) allocated for IEO

Notwithstanding the above, Pico acknowledges several concerns regarding Matic Network. Both the team and advisors lack years of experience as compared to other blockchain projects, not to mention the strong competition that lies within scalability solutions. Furthermore, both private and seed investors have 50% of their tokens unlocked during the first month, which could entice greater volatility upon token listing. Nevertheless, our analysts perceived that the deal structure did compensate for the tradeoffs on several weaknesses displayed by the project.

In light of the preceding, Pico Research affirms a '**Spec Buy**' rating on Matic Network.

## **About the Analyst**

Lennard specializes in fundamental and technical analysis in digital asset investments. He became acquainted with blockchain, cryptocurrency and ICOs in 2016, and recently decided to take a meaningful step away from traditional banking to join this industry. Previously, Lennard spent 3 years with an investment bank in forex and debt capital markets. Prior to this, he also had entrepreneurship experience working with an e-commerce startup and a local social enterprise. Lennard graduated with a master's degree in Applied Finance and is fluent in English, Chinese with a basic in Korean. He is a CFA level III candidate.

## **Ratings Definition**

Monitor – Continue observation until clarity of information is provided

Sell/ Avoid – Investment is associated with high risk of losing capital

Hold/ Neutral – To maintain current levels of position until the next updated release

Spec Buy – A speculative opportunity for investors with higher risk tolerance

Buy – A high conviction buying opportunity

## **Disclaimer**

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