

Piccolo Research

Independent research on blockchain startups and ICO's

An independent review of **RSK**

10 October 2018 - Lennard Neo

Piccolo Research is an independent research-house. The company has not received any remuneration (cryptocurrency or otherwise) in preparing this analysis.

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RSK

Monitor



Integrating Smart Contracts into the Bitcoin Network

Summary

RSK is seeking to integrate the smart contract element onto the bitcoin network. It is a fully open source project utilising merge mining and a 2-way peg mechanism with bitcoin. It aims to add value by lowering block intervals from 10 mins (bitcoin) to 10 seconds, faster confirmation times, providing scalability and sustainability to the bitcoin ecosystem.

Concept

MVP

Established

General

Ticker: TBA

White Paper: [Click here](#)

Sale Period: TBA

Website: [Click here](#)

Sale info

Pricing: TBA

Accepted: NA

Min Goal: NA

Cap: NA

Token Sale %: NA

Escrow: NA

Bonus: NA

Checklist

Management: ✓

Product: ✓

Commercial: ⚠

Interest: ✓

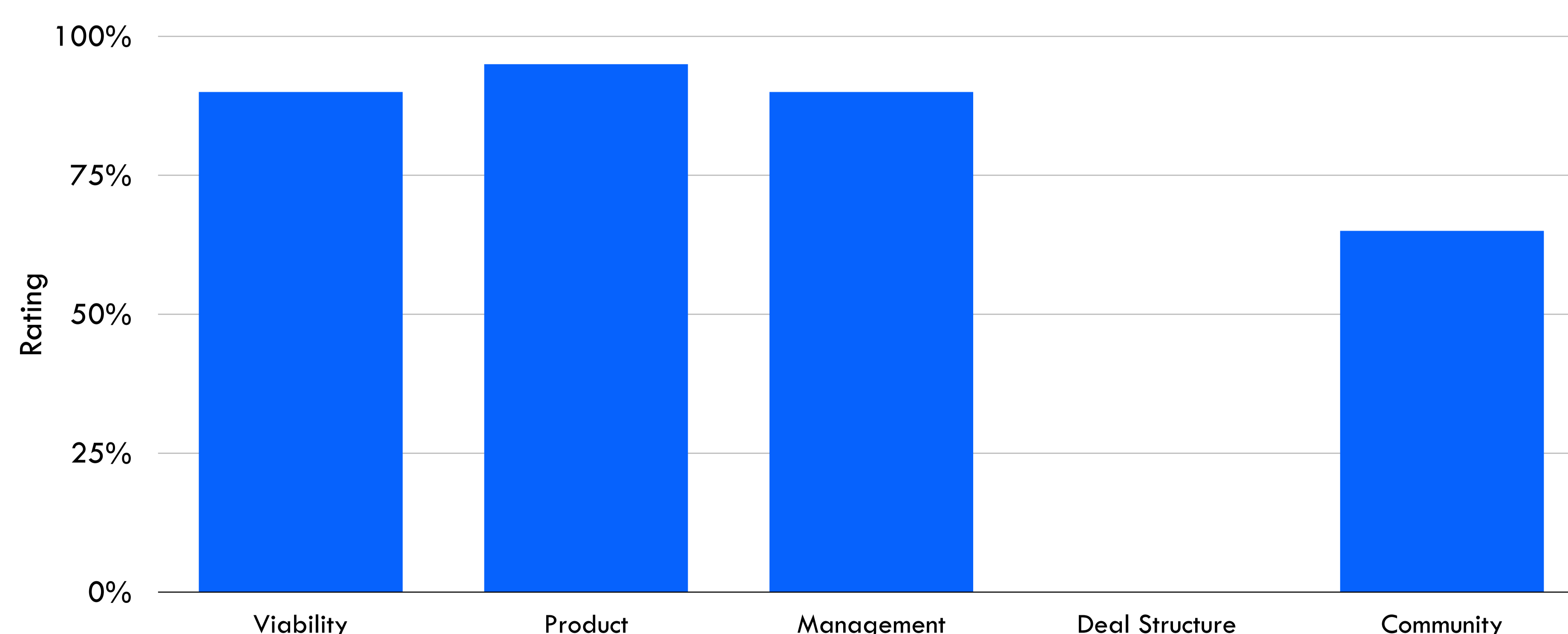
Fulfilment: ✓

Company overview

RSK (also known as Rootstock) is incorporated in Argentina with an aim to introduce smart contracts to the legacy bitcoin blockchain. The primary goal is to reduce stakeholders' conflict by integrating a governance model with a 2-way peg to BTC prices. Here are several issues that RSK seeks to resolve within the Bitcoin ecosystem:

- A fair governance system that represents all stakeholders of the Bitcoin community
- Sustainability of Bitcoin mining network through merge mining utility
- Lowering Bitcoin transaction fees, and reducing price volatility
- Faster confirmation times

Birds-Eye View



Commercial & Technical Strategy

The platform seeks to drive scalability in the bitcoin network by integrating smart contracts, lowering transaction fees, maintaining current hash rate to ensure tighter security and increasing processing time, at the same time upholding the rigidity of bitcoin's security. RSK is indeed creating a protocol to solve a prevailing issue within the bitcoin network. By introducing RSK Virtual Machine, smart contracts can be executed. They provide an alternative to existing solutions such as competition free infrastructure projects (Hyperledger and Ripple), and other scaling solutions (Lightning Network). RSK had mined its genesis block in early 2018 and will continue to open the mainnet up on a stage-by-stage basis.

Several significant features include:

- Turing complete platform with a deterministic virtual machine, and compatibility with EVM
- Pegged to the bitcoin price 1:1. During a transfer, BTC is locked and exchange with the same amount of SBTC (smartBTC), and vice versa
- Merge mining with bitcoin blockchain, at the same time enhancing the incentive mechanism of BTC mining
- RSK launched its mainnet beta in Jan 2018. Current statistics show an average block time of 33s
- DECOR+ Protocol for fairer block rewards
- GHOST protocol for chain weighting, and sub chain
- Integration of Lumino Transaction Compression Protocol (LTCP) to attain speeds of 2,000 tps

Roadmap

It has been 3 years since the project was incepted back in 2015, with several major developments completed for the project. However, there was no mention of specific milestones going forward, as the team continue to focus on developing the technology. Below, we cite some of the past developments:

- Q2 2017 – Open source public testnet launch
- Q1 2018 – Genesis block mined, Bamboo Mainnet launch
- Q3 2018 – Orchid Network Upgrade

Team

RSK LinkedIn profile page showed the company has 63 employees. However, most of them come across as ambassadors or investors and do not contribute directly to the platform development. Here we sort out some relevant personnel together with their experiences:

Diego Gutierrez Zaldivar (CEO & Co-founder) – 25+ years of experience within the web and technology industry. A serial entrepreneur and a bitcoin advocate. Currently holding management roles in SystemaD, Koibanx, Bitcoin Latam NGO

Sergio Demain Lerner (Chief Scientist) – 24+ years of experience mainly in computer science and cryptography. He regularly performs security audit to bitcoin source codes. He is also the CEO of Certimix and holds advisory roles with several projects such as CoinFabrik, Wayniloans, Coinspect

Adrian Eidelman (Co-founder and core developer team) – 20+ years of experience in software development. Currently a director at Kinetica Solutions that specialises in mobile, web and cloud solutions

Ruben Altman (Co-founder and core developer team) – 18+ years of experience in software development. Prior experiences in NEC as a senior developer and currently the CTO at Kinetica Solutions

Diego Angel Masini (Senior Researcher) – 13+ years of experience proficient in Java software development. Prior notable experiences include IBM, LIFIA, and Despegar.

Gabriel Kurman (Community Director) – 16+ years of experience with business development and investor relations background. He is also the CFO of Koibanx

Additional team members include:

- 6 HR, business development and operations employees
- 12 Software, core, blockchain developer
- 3 researchers

The project has a strong team of 27 employees and a notable number of ambassadors located in different regions. The C-suite executives boast a wealth of experience in establishing companies and are familiar with the bitcoin landscape. It is also important to note that most employees come from Koibanx (blockchain solutions for businesses and governments) or Kinetica Solutions, which could further create team synergies.

Partnerships

Forming dApps partnerships have been slow for RSK. Over the few years, only a handful of partnerships were formed with the likes of Etherpary, Exchange Union, RCN and most recent one being TEMCO. However, the project has shifted its focus to promote more institutional adoption, with more than 20 banks, insurance companies, governments and development agencies potentially developing their services on RSK's platform.

Token Sale

RSK raised \$1m in seed funding and \$3.5m for pre-series A funding in mid-2017. The latest round comes from a long list of investors with more information provided in the next segment. The project might have plans to conduct an ICO in the near future for their payment platform, and any updates will be posted on their official channels.

Investors

Several prominent investors have backed the project, including:

Bitmain - Bitmain is one of the world's largest manufacturers of mining rigs with profits of \$4b last year. They have stepped into venture capital and have invested in projects such as Circle, Path Network, BitKan, RSK labs, ChainLab.

Digital Currency Group (DCG) - DCG aims to build and support bitcoin and blockchain related companies. Past projects include Civic, Blockstack, Decentraland, Filecoin, Hedera Hashgraph.

Competitor Analysis

RSK has entered a space to build a platform that competes against the major cryptocurrencies. However, several features embedded within the platform steers them away from being a direct competitor towards a more complementary nature. We have identified two projects that portray similarities in comparison to RSK.

Project Name	RSK	Ethereum	Elastos
Infrastructure Type	Blockchain	Blockchain	Blockchain
Symbol	TBA	ETH	ELA
Consensus Algorithm	PoW (Merge mine with BTC)	PoW	DPoS + AuxPoW (Merge mine with BTC)
Smart Contracts	Yes	Yes	Yes
Block Time	10s	12s	120s
Transaction per Seconds (TPS)	Theoretical: 2,000 after LTCP Practical: 400 tps	Theoretical: Millions (Plasma & Sharding) Practical: 20 tps	Theoretical: Millions (sidechains) Practical: 300 tps
Product Stage	Mainnet	Mainnet	Mainnet
Initiation Year	2015	2014	2013
Current Token Price	NA	\$227.98	\$9.23
Market Cap Valuation	NA	\$23,534m	\$61.76m

Figures as of report date, Source: Coinmarketcap

Strengths

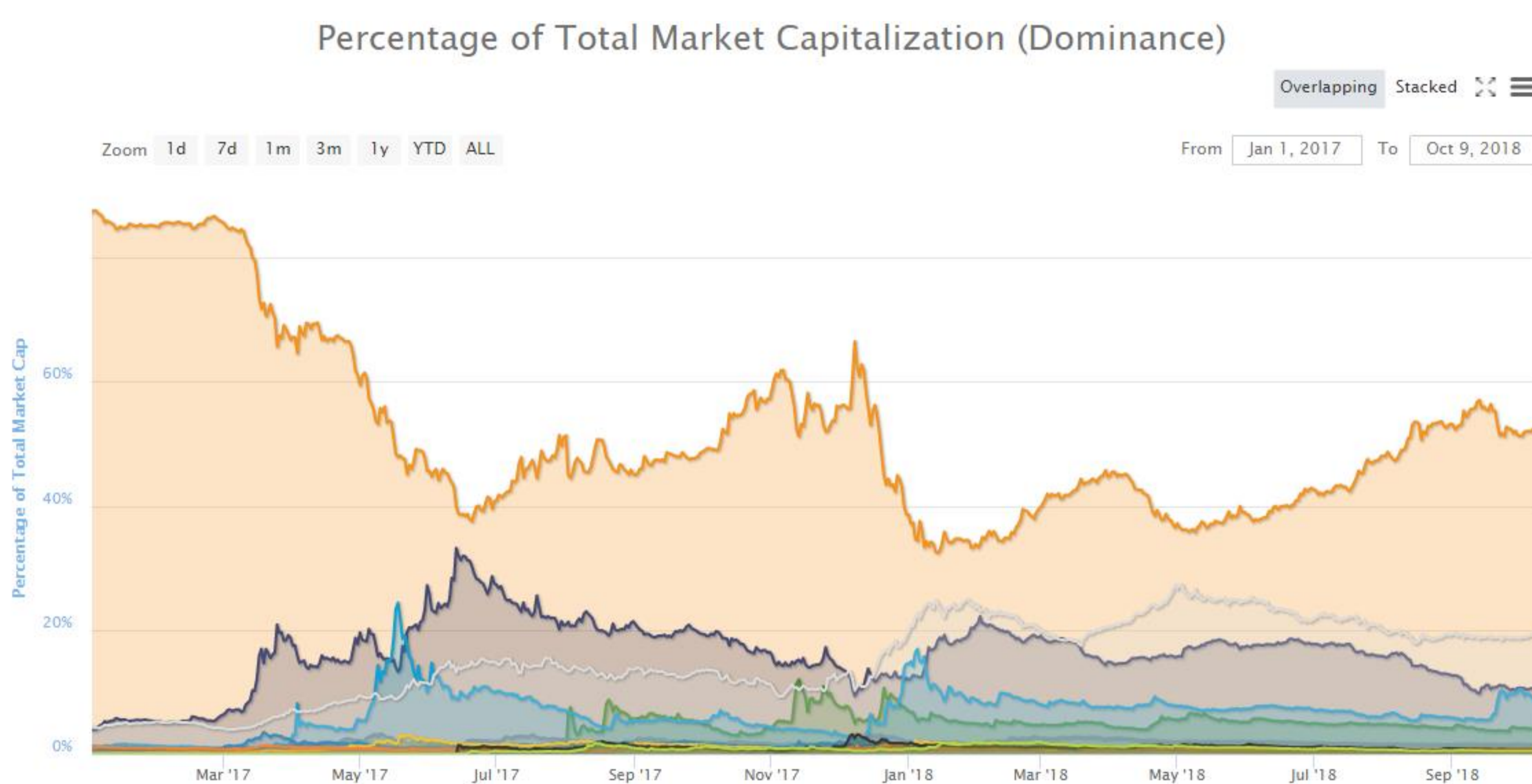
- RSK has a novel idea that integrates smart contracts into the bitcoin network, at the same time solving scalability issues and providing stability by reducing fees, transaction time and embed trust. There is also the interoperability aspect with Ethereum Virtual Machine (EVM)
- RSK has a working product with its mainnet launched
- The project has a detailed bounty programme to uncover bugs and vulnerability not just for their platform but other compatible platforms as well. This reflects an eye for detail and advocating a positive ethos for the entire eco-system
- Implementing a 2-way pegged mechanism is novel as it seeks to complement the bitcoin network rather than competing with it
- They provide an alternative to existing solutions to competition free infrastructure projects (Hyperledger and Ripple)
- RSK Labs GitHub has been active with 23 repositories. Their main repository (RSKj) have 2,755 commits and 22 contributors
- A strong development team with a community of ambassadors for the platform in the various region, which will help accelerate adoption, awareness, and education of the platform
- Support from over 80% of total bitcoin mining hashrate

Weaknesses

- There is high concentration risk given its merge mining profile with Bitcoin network
- The project began in 2015, the traction on the technological front has been slightly lacking as compared to projects such as Ethereum, which was launched during the same period
- Even though RSK has launched its mainnet, there has not been much development on dApps built onto the platform as compared to other blockchain projects, suggesting difficulties in dealing with developing the business on the commercial front
- Significant challenges persist in a pegged mechanism, such as the audit issue on the Tether case
- The roadmap is lacking clarity

Opportunities

- **Bitcoin scalability needs** – There is a need to expand bitcoin functionalities given its importance within the entire digital asset network. Integrating smart contracts through merge mining increase both the usability and sustainability of the network. Currently, potential scaling solutions exist (such as lightning network), however, they are limited in this space and by itself presents an opportunity for RSK to garner market share
- **Increasing Bitcoin Dominance** - Bitcoin dominance has been rising in the past months as compared to Ethereum (52% BTC as compared to 10% ETH), which shows that bitcoin still holds a significant place as a major currency. Adding a smart contract feature into bitcoin will create natural adoption for RSK platform



Threats

- Merged mining opens additional dimensions for attacks (selfish mining, DoS attack to mine empty blocks) since it does not require additional resources to mine the child blocks. Also, other implications include a long-term dependency on the parent blockchain and incentivising mining pools to misbehave.
- The 2-way pegged mechanism is supported by the RSK Federation which consists of more than 25 relevant companies in the bitcoin industry. This deflects the core ethos of the blockchain community by introducing some form of centralisation through the provision of such services.

Conclusion

In conclusion, Pico Research requires more clarity, particularly on ICO and roadmap details, before allocating a rating on RSK. Nevertheless, our analysts are positive about the potential benefits RSK can provide as it possesses a solid proposition that proves to be resolute for the bitcoin ecosystem.

We highlight several reasons on our optimism below,

- A novel idea implemented to the Bitcoin network that solves a real need without increasing energy consumption, yet eventually increasing the sustainability of the ecosystem
- The project has a working product with mainnet launched running across 20 nodes at average block interval times relatively close to their theoretical calculations
- Consistent Github activity with sturdy support from developers and supply side (miners)
- Experience team with a notable number of ambassadors to drive education of the project to the masses

Notwithstanding the above, Pico acknowledges that RSK is currently focused on building the technology and making improvements to their product. Only time will tell if the project can deliver their intended impact on the Bitcoin ecosystem. Coupling that with the lack of information available, it is difficult to assert a rating on the project.

In light of the preceding, Pico analysts will continue to **monitor** any developments and update our rating accordingly.

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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