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Oregon

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ORAICHAIN

General Background on Protocol

Oraichain emerged as a blockchain and AI technology pioneer, positioned as the first AI-powered oracle and ecosystem for blockchains. Founded in 2020 and operating out of Hanoi, Vietnam, Oraichain provides an advanced AI Layer 1 for data economy and oracle services, as well as Layer 2 rollups and subnetworks. Oraichain distinguishes itself as the foundational layer for the creation of the next generation of smart contracts and DApps. Conventional blockchains cannot integrate AI models directly into smart contracts because smart contracts require 100% accuracy and small storage, and AI models do not offer the same accuracy and demand larger storage. Oraichain strategically reduces aspects of strictness to enhance functionality and user experience through the integration of AI.

Oraichain recognizes specific domains where AI is indispensable, including identification based on biometric methods, automated trading, lending decisions based on credit scores, product comparison, and real-time evaluation of game item prices. Oraichain uniquely positions itself as a bridge to bring AI to smart contracts by distinctively focusing on AI APIs and the quality of provided AI models. In each user request, test cases ensure that providers' APIs pass a predefined number of test cases to receive payment. Validators play a crucial role in managing these test cases and assessing the quality of AI models, making Oraichain distinct among its peers.

Oraichain's oracle serves as a middleware, connecting the blockchain with external resources. This extends beyond an oracle's conventional role by focusing on AI data sources to fetch external data securely. The architecture emphasizes API testing based on test cases, fostering a unique functionality that integrates an API marketplace and a test-case marketplace. Oraichain's design exhibits high scalability and performance, coupled with cross-chain compatibility, ensuring efficient data verification on target blockchains. As the blockchain ecosystem continues to evolve, Oraichain stands as a beacon of innovation, reshaping the future of blockchain technology.

Macro Factors Impacting Protocol

With a current market size of 104 billion and an expected CAGR of 19.1% over the next 9 years AI is poised to be a fruitful investment. Compounding those excitingly large numbers with the intersection of blockchain and digital assets offers a more enticing investment. Boiling down from larger macroeconomic factors to macro ecosystem, factors it can be seen that the Cosmos Ecosystem has maintained steady Interchain

volumes of 1.4 billion on a 30-day moving average. With the oncoming of Celestia, DyDx, and Noble, liquidity has injected itself back into the Cosmos ecosystem and investors are teething for tokens to hold. Examining the price action of Akash and Fetch AI yields 50% and 100% inclines, respectively, displaying strong interest in alternative AI tokens in relation to the market benchmark ETH. In turn, it appears with a high CAGR, Cosmos ecosystem growth, and AI alternative token, demand Orai is well positioned to capitalize.

Who's the Team Building the Protocol

Co-founded by Chung Dao (CEO), Tu Pham (CTO), and Diep Nguyen (COO), Oraichain has a dynamic team consisting of over 58 developers and employees. CEO Chun Dao brings with him a wealth of experience and strategic vision. Prior to co-founding Oraichain, he co-founded Rikkeisoft, an IT outsourcing provider. Under his leadership, Rikkeisoft earned several prestigious awards and certifications, solidifying its position as one of the top 10 tech companies in Vietnam. Tu Pham has experience co-founding two companies in 2017 and 2018, one offering blockchain and AI services. has additional experience as a technical advisor for Ictea.io and Summoners Arena, a blockchain based game that integrates traditional and blockchain gaming. Together the team possesses a unique blend of expertise in software development, AI/Machine learning, smart contract development, DeFi, blockchain architecture, database management, and cryptography.

General Auditing Background for Protocol

Oraichain underwent two audits in 2021, one conducted by Sysfixed in February and one by Certik in December. The protocol has not been audited since 2021, which is an area for concern. Sysfixed is a blockchain security certification organization that specializes in smart contract security services. It stated that Oraichain provided very good documentation and technical descriptions. The overall quality of the codebase is "good", finding no high risk issues. Sysfixed also noted that Oraichain's smart contract follows the official Solidity style guide.

CirtiK's auditing process specializes to testing smart contracts against common and uncommon attack vectors. The audit report found one medium and two informational level problems, all of which have been acknowledged. The medium problem pertained to the initial token distribution being sent to the contract deployer when deploying contracts. This presents a centralized risk as the deployer

can distribute ORAI tokens without obtaining consensus of the community. The audit report recommends that the team be transparent regarding the initial token distribution process and make efforts to restrict the access of the private key. Overall, the auditing background does not raise cause for concern for investors of the protocol.

Specific on What Protocol Does

Orai Chain is a Cosmos SDK Comet BFT blockchain in the Interchain that focuses on three primary services: a classical decentralized exchange, Oraichain VRF 2.0, and AI oracle.

The Cosmos SDK is a flexible framework that provides bespoke application tooling layered on top of a proven battle tested consensus mechanism known as CometBFT (formerly Tendermint BFT). Cosmos SDK app-chains come with out of the box interoperability with easy Inter-Blockchain Communication protocol implementation. A key feature of Orai Chain is enabling interchain access to Artificial Intelligence models through their AI oracle.

While Orai chain functions as a layer one for applications development, services such as Oraichain Verifiable Random Function (VRF) 2.0 and AI oracles operate on rollup subnets. Each of the two subnets have "subnet executors" that have dissimilar roles and responsibilities.

Before addressing how Orai chain is materially differentiated from other Verifiable Random Function (VRF) solutions, the importance of VRF needs to be explored. Randomization is paramount to reward distribution, gambling games, NFT collections, selecting representatives of consensus, and more. For randomization to take place random number generation (RNG) must be unpredictable, auditable, and tamperproof. Many methods of VRF come close to achieving all three of the aforementioned characteristics needed for RNG. Yet, most suffer from the off-chain verification of group signatures and random number creation. The reason this is important is that group signatures authenticate the generation of a random number. In the event that a group signature is falsified, the validity of a random number is questionable. To prevent such an attack, Oraichain VRF 2.0 moves the signing process and seed generation (the pseudo-random input that creates that random output) on-chain through a smart contract. It is plausible to argue that Oraichain VRF 2.0 may be more expensive than its off-chain counterpart but the extra price comes with decreased security assumptions.

The artificial Intelligence subnet proves correctness and execution of AI models. Upon receiving a user request, the AI Oracle surveils AI models, captures performance benchmarks, and aggregates the results to compare the actual and expected returns. This process triggers a hook on an Oracle Script that examines the credibility of data aggregates across multiple AI Data Sources from dissimilar AI Providers to be subjected to Test Cases later. The Test Cases are executed within the Oracle Script by validators of the LI, and only after Test Case satisfaction does the result ossify on-chain. In simple terms Oraichain's AI Oracle ensures Artificial Intelligence operates within reliability and performance specifications to deter bias and then push the result to the final destination. Price oracles operate similarly to AI oracles in so much as they aggregate an average across multiple periods and then come to a consensus on that average.

Every node within the blockchain must always be fed similar information due to the deterministic nature of the ledger. Nodes executing smart contracts follow similar logic in which inputs need to be 100% accurate or at least agreed upon, to generate deterministic outputs. Since AI models cannot produce such accuracy, Oraichain defines the precision parameters so all nodes may come to consensus and smart contracts may create deterministic outputs. In one line, the AI oracle serves as a source of truth for the AI model to deliver payloads to smart contracts.

Why the Protocol Offering Matters to Consumers

Oraichain has an identity crisis on product offerings because it has both a developer facing and consumer facing product in their VRF and DEX. Although this may be true, the former two products are not materially different to developers or consumers. What is a differentiator is Oraichain's AI oracle service. The AI oracle service is not a consumer-sided product but a developer-focused one. Developers that require verifiable and reliable AI computation for AI [based yield farming](#), [on-chain copyright](#), [AI lending](#), facial recognition or haptics need AI. The problem of generative AI is that it sometimes creates dissimilar results for the same inputs so developers can't use them in smart contracts. With Oraichain's AI oracle, this problem is fixed and all developers on a chain connected to Inter-Blockchain Communication (IBC) may use Oraichain.

Protocol Versus Competitors Chart

Protocol	Primary Protocol Focus	Features
Orai	Cross Chain AI in smart contracts	Orai provides VRF, digital asset price feeds, and AI smart contract integration.
Band Protocol	Cross Chain Price feed for digital assets	Band Protocol offers blockchain explorers, digital asset price feeds, and verifiable random functions.
Chainlink	Cross Chain Price feed for digital assets	Chainlink delivers consistent, high-quality price feeds for digital assets in a cross-chain manner. It also provides smart contract automation (cronjob) and verifiable random functions.
Cardano	Orcfax provides only cardano related price data	Orcfax exclusively provides price data for the Cardano blockchain.
API3	Cross chain Price feed for digital assets and traditional equities	API3 offers a quantum random number generator and price feeds for digital assets, equities, and forex.

Protocol Go To Market Strategy Versus Competitors

According to a recent interview by Tyree Robinson, Head of Ecosystem at Oraichain, the airdrop for \$ORAI went terribly, but the reason is unknown to the authors. Typically airdrops are used to incentivize protocol participation at the cost of the community treasury. While it is still debated whether airdrops actually bootstrap community, they have been utilized correctly before. In Oraichain's case, the success of a go-to-market strategy is not dependent on their token but rather the number of AI providers. Simple network effects permit a conclusion that if greater AI Providers then increased utility for consumers. The only functional example of this is airtight.io which is a generative AI platform that uses Oraichain's AI Oracle to create on-chain copyrights that "ensures immutable proof of origin and ownership". Oraichain provides the data for a user on airtight.io to authenticate their original work against an AI combing a large database of images. Overall, Oraichain's go-to-market strategy is leaning away from the token and project capture as it should.

Chainlink, Band Protocol, and API3 cannibalize Oraichain's product offerings in two of the three categories. The three former competitors offer VRF solutions that are

comparable in quality and digital asset price feeds that are widely accepted. It is optimistic to state that Oraichain can compete on those two offerings. Where Oraichain excels is its AI oracle. No other competitor offers AI oracle as a service, so Oraichain maintains a first-mover advantage.

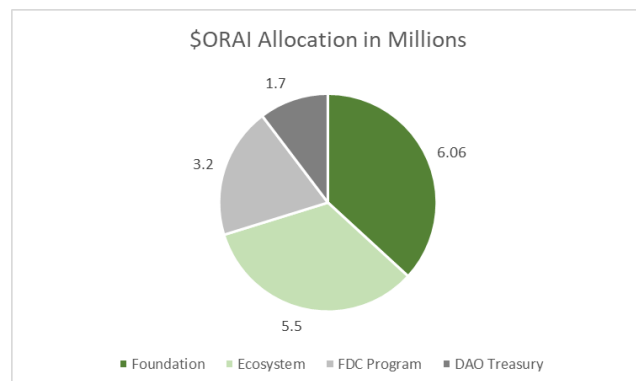
How Token Extracts Value

Oraichain's native token, \$ORAI, is used to pay for oracle services, staking, transaction fees, and to vote on governance proposals in the Oraichain ecosystem. 70% of the total transaction fee is extracted as a reward for oracle services, staking, and governance. The remaining 30% is saved as rewards for validators committing new blocks. Validators are actors in the Oraichain ecosystem that commit new blocks and execute test cases in order to validate data from different data sources. If the test cases meet the requirements stated in the oracle script, the validator will aggregate the data and receive \$ORAI as a reward. Validators are required to stake \$ORAI in order to be randomly selected for transaction verification and fulfill data requests. The rewarding token is divided based on the number of tokens that a holder is staking to a validator.

The AI Marketplace developed in Oraichain's protocol is powered by the ORAI token, which is used to pay for AI data sources. An AI provider provides data sources for the Oraichain system, and receives incentives when requests are made to their provided AI data source. Oraichain has also developed a Royalty Protocol that enables its creators to receive royalties for their work. \$ORAI, is used to power the protocol pay for the services provided by the protocol.

Tokenomics/Vesting Schedule

Oraichain provides AI-based services to businesses. The platform has three types of \$ORAI tokens: \$ERC20 ORAI on the Ethereum network, \$BEP20 ORAI on the BNB Chain, Native \$ORAI on Oraichain Mainnet, and will soon be introducing \$ORAIBTC. Oraichain Mainnet 2.0 allows for the minting of \$ORAI tokens in two ways. The first is by collecting \$ORAI token rewards for each



newly created block. The second way is by request-executing validators earning extra \$ORAI tokens by executing test cases and data sources.

The ecosystem has 5,538,595 \$ORAI tokens, while the DAO Treasury has 1,700,000 \$ORAI. The Foundation has \$6,062,294 ORAI tokens, with 3,229,850 \$ORAI delegated in the FDC Program. The total circulating supply of \$ORAI tokens as of August 2023 is 13,300,889 \$ORAI tokens, while the total supply is 16,779,272 \$ORAI tokens. The maximum supply of \$ORAI tokens is 19,779,272 \$ORAI tokens. The token release schedule has been extended until 2027, stretching out from 5 to 7 years compared to the previous tokenomics. The release curve has also been flattened to avoid supply shocks

Modeling/Ratio Analysis

The FDV/TVL ratio is the most applicable metric to compare Oraichain with other protocols. Because the integration of AI and blockchain has only been explored recently, the competitor protocols selected consist of both AI-based and traditional Layer 1 platforms. Out

Protocol	FDV	TVL	FDV/TVL
Orai	\$ 58,687,689	\$ 5,934,803	9.89
Chainlink	\$ 13,601,845,345	\$ 2,700,000,000	5.04
Band	\$ 209,203,775	\$ 38,160,000	5.48
Binance Smart Chain	\$ 34,606,382,628	\$ 2,941,000,000	11.77
Avalanche	\$ 8,530,873,945	\$ 635,560,000	13.42
Fantom	\$ 912,676,422	\$ 58,000,000	15.74
Algorand	\$ 1,031,879,963	\$ 61,140,000	16.88
Cardano	\$ 16,681,830,855	\$ 255,250,000	65.35
API3	\$ 185,759,231	\$ -	Infinity

of other comparable protocols, Oraichain has the third lowest FDV/TVL ratio at 9.89. This figure is somewhat high, but suggests that Oraichain may be undervalued compared to relevant protocols. This somewhat high ratio is best explained by Oraichain’s youth, as its mainnet was only launched in 2021. The protocol’s newness also explains its lower overall FDV and TVL compared to other well established protocols.

Another valuable metric is the predicted CAGR of the global Blockchain AI market. GlobeNewswire, Emergen Research, and Fortune Business Insights estimate the CAGR to be between 23.6% and 25.6% until 2027/30. As an established protocol in the blockchain/AI industry, Oraichain is well-positioned in an industry with high growth potential.

When comparing Oraichain against larger prominent chains outside the Cosmos ecosystem a comparably lower market cap is observed. Additionally, total value locked is considerably lower than all Protocols in our model. Both of these facts lead Oraichain to be a wonderful alternative token.

Road Map

Oraichain has developed multiple platforms since launching its Mainnet 1.0 in February 2021. The 2023 roadmap outlined endeavors including the update of OWallet and development of aiRight and EUNO in 2022, the development of BlockAi.Care and Orchai in 2023, and the v2.0 release of OraiDEX in the near future. These platforms execute on a variety of AI use-cases.

AI Right, developed in 2022, provides AI oracle solutions for NFTs. Oraichain's OWallet has most recently been updated in December 2022. An article released by the company in August 2023 promises a fresh rollout of OWallet in the near future that emphasizes Web3 Multifactor security, universal asset management (to manage assets including crypto tokens, NFTs, and dApp tokens on major chains like Oraichain Mainnet, Cosmos, Ethereum, BNB Smart Chain, and Bitcoin), native swap, cross-train bridges, and more.

Developed in March 2022, OraiDEX is a CosmWasm smart contract-based decentralized exchange with features like multi-chain interoperability, optimal speed, and liquidity options. An article released this February talks about the anticipation of OraiDEX v2.0. Recently pursued endeavors are EUNO developed in 2022, offering decentralized encrypting oracles for Web3 to build large scale dApps, then BlockAI.Care developed in 2023, which is an AI-enhanced wellness assistant and ecosystem, and Orchai, a DeFi orchestrator on the mainnet. It has recently been announced that a sneak peak on Oraichain's Mainnet 3.0 will be held at an exclusive AMA on Dec. 1st. Oraichain's roadmap for 2024 is promised to be released in the coming months.

Investment Thesis

Our investment thesis on Oraichain is that although it has a lackluster tokenomic model, the intersectional product offering for AI & blockchain is too good to pass up. To clarify further, by purchasing Oraichain, we gain exposure to a high CAGR industry with a token that has more room to run, as depicted by the FDV/TVL ratio versus competitors. Additionally, we see Oraichain as a high beta play into the expected bull run. With all that said, we acknowledge that sound tokenomics is a large part of investing in quality digital assets and have a 6 month sunset on our holding of Oraichain. The 6 month sunset on our holdings refers to selling \$ORAI no matter what it 6 months; this is because the price will deflate unless the tokenomic model changes.

Fund Recommendation

2 Eth at a \$3.8 for a quantity of 1,077 \$ORAI

Appendix

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