Orchid is a blockchain-based Virtual Private Network (VPN) delivery platform initially developed by a seasoned team (slide 4) (and was a decentralized network upon its launch). This is an especially timely service against the backdrop of Covid-19 and increased working from home. The VPN market is expected to exceed $70 billion by 2026 (slide 8), and Orchid could benefit by aggregating excess bandwidth capacity into a seamless, familiar experience, even for crypto newcomers. (References in this report to “Orchid” are to the Orchid network.)

Users purchase pay-as-you-go bandwidth credits, in fiat or Orchid’s native OXT tokens, online or through iOS, Android, MacOS, Linux or Windows platforms. These fiat in-app payments are a unique lowering of the barriers to adoption typically seen by crypto projects. Credits are held as OXT tokens until spent on bandwidth. Traffic and revenue are routed to back-end VPN providers proportionate to their share of staked tokens (slide 15). We explore the token economics of the network on slide 25.

The ecosystem is beginning to mature: Orchid has relationships with several VPN providers (slide 16) and has been integrated with several exchanges and wallet providers (slide 17). As the first crypto-based VPN provider, the network through its community of users and providers has gained significant social media traction, as shown on slide 38, compared with incumbent competitors (slide 14).

We assess that the potential for broad adoption exists: with the industry adding about 11mm subscribers per month by 2025, we project Orchid could reach up to 1.5mm subscribers (or a Bull case of 4mm) by December 2025 (slide 32), leading to monthly revenue of $6.5-11mm to the providers on the network.

Staked tokens could grow with user adoption and revenue, leading to the potential for VPN provider annualized gross profit per 100,000 staked tokens of between $9,000 (Bear case) to $58,000 (Bull case), with $42,000 representing our year-five Base case (slide 33). We view this as the mechanism for value accrual to the providers on the network. We identify key value drivers (slide 34) behind a gross profit per staked token metric, but do not attempt to value a staked token.

This report is intended for use by providers on the network.

Risks to our thesis:

- We view the ability of the Orchid network community and of providers on the network to increase network users as not fully developed yet, and as a key risk to the downside. Additional downside risks to our adoption model are the ability of the Orchid network community to enlist the right VPN providers, the impact of OXT token price volatility on bandwidth costs, and low realized revenue per user with the pay-as-you-go approach (slide 36).
- Conversely, privacy is a major issue that makes the Orchid service very timely. With Orchid being one of the first mainstream Blockchain applications, media coverage and word-of-mouth publicity could drive adoption. New service offerings from the community in applications such as storage and computation could help expand the market. Finally, a robust model for the Orchid network community and providers who stake tokens for share of traffic / revenue
- Customers and providers may not need to develop a robust customer acquisition model,’’ could drive upside to our adoption estimates.

In summary:

- Orchid is an early mainstream crypto application that has identified a need for a pay-as-you-go VPN service that could drive meaningful adoption.
- With vendor revenue driven by share of staked tokens, we see a robust value accrual mechanism for the staked token economy.
- However, we view the need for the Orchid network community and providers to develop a customer acquisition model as a risk factor to consider.

Key Takeaways

- Orchid is a blockchain-based VPN provider with the OXT ERC-20 network token
- Multiple back-end providers who stake tokens for share of traffic / revenue
- Simple, traditional front-end user experience with a pay-as-you-go model
- We assess adoption could reach 1.5mm to 4mm users (Bull case) and could achieve up to $11mm in monthly revenue for VPN providers on the network by 2025
- The Orchid network community and providers may need to develop a robust customer acquisition model to achieve widespread adoption

BitOoda has been retained by Orchid to produce this report. Please see slide 37 for important disclosures.
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Orchid Introduction

VPN Industry

The Orchid Network

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Orchid
Introduction
Orchid Protocol
A Blockchain Privacy Network

Orchid is a Layer 2 programmable Virtual Private Network protocol that delivers a decentralized marketplace for bandwidth and other internet services, where users incrementally pay for metered service with probabilistic nanopayments using Ethereum smart contracts. On the network, anyone can buy and sell bandwidth using the Orchid digital currency (OXT). Users can browse privately and access content without being limited by their geography. With its decentralized design, multi-hop architecture, and Open Source ethos, Orchid offers users unprecedented digital privacy in a trustless context. Key use cases include getting around censorship and blockage of content to drive Internet freedom.

The protocol launched in December 2019 and is now available on Android, iOS, MacOS, Linux and Windows.

The OXT ERC-20 token powers the ecosystem and has been assessed by Orchid’s outside counsel to be compliant with U.S. securities regulations. Independent, back-end VPN providers receive traffic and corresponding revenue based on their share of staked OXT tokens. Removal of customer acquisition costs can enable anyone to become an Orchid back-end provider. Users own OXT in their accounts (either with fiat purchases or OXT transfers in the case of more advanced users) and pay providers on a pay-as-you-go basis (in fiat terms) based on their traffic usage. However, crucially for broad adoption, the crypto and blockchain aspects take place behind the scenes; users have a seamless experience that looks like what they are already used to.

Orchid’s seasoned team brings together a broad experience set that allowed them to create upon network launch a robust ecosystem, from technology development and deployment, as well as having already built VPN provider relationships that optimize the user experience.

Team:

Co Founders
Dr. Steven Waterhouse, CEO: Executive at Sun Microsystems in the 2000s & co-founded Pantera Capital
Jay Freeman, CTO: Built Cydia, which is core to the iPhone jailbreaking movement
Brian Fox: Author of GNU Bash shell and creator of the first interactive online banking software for Wells Fargo
Gustav Simmonson, Advisor: Was an Ethereum core developer

Executive Team
Dan Montgomery, Head, Engg: Built the development team and architected products for IBM BigFix’s security configuration and inventory analytics division
Patrick Dietzen, Dir., Operations: 20+ years of early stage tech venture executive experience with a history of successful exits
VPN Industry
Understanding VPNs

A virtual private network (VPN) is a technology that allows a user to indirectly connect to a network – such as the internet – from another network. It protects your privacy by allowing you to anonymously appear to be anywhere you choose.

A VPN is beneficial because it guarantees an appropriate level of security and privacy to the connected systems, even when the existing network infrastructure alone cannot support it.

When your computer is connected to a VPN, all of your online traffic is transferred over a secure connection to the VPN. The computer will then behave as if it is on that network, allowing you to securely gain access to local network resources. Regardless of your location, you will be given permission to use the internet as if you were present at the VPN’s location. This can be extremely beneficial for individuals using a public Wi-Fi network or public Wi-Fi hotspots.

Therefore, when you browse the internet while on a VPN, your computer will contact the website through an encrypted connection. The VPN will then forward the request for you and forward the response from the website back through a secure connection.

The most popular types of VPNs are remote-access VPNs and site-to-site VPNs.

Who needs a VPN?

Anyone who accesses the internet from a computer, tablet or smartphone will benefit from VPN usage. A VPN service will always boost your security by encrypting and anonymizing your online activity. Communications that happen between the VPN server and your device are encrypted, so a hacker or website attempting to monitor your activity would not know which web pages you access. They also would not be able to see private information such as passwords, usernames and bank or shopping details. Anyone who wants to protect their privacy and security online should use a VPN.

Traditional VPNs vs. Virtual VPNs

Traditional VPN providers often set bandwidth limits and ration usage, to increase capacity utilization. This makes sense when subscription revenue is fixed, reducing marginal return on capacity growth and capital investment.

A virtual VPN such as Orchid offers a pay as you go model and can route traffic across providers. This has the advantage of both incentivizing provider investment in capacity and driving traffic to the most efficient providers. As a result, investment and revenues are better aligned for providers in the network.

In addition, Orchid offers multi-hop across different underlying VPN providers, offering additional privacy beyond what is available with traditional VPNs.

Source: CNET.com
Types of VPNs

What is a remote-access VPN?
A remote-access VPN uses public infrastructure like the internet to provide remote users with secure access to the VPN network. This is particularly important for organizations and corporate networks, where employees connect to a public hotspot and use the internet for work-related activity. A VPN client on the user’s computer or mobile device connects to a VPN gateway on the company’s network. This gateway will typically require the device to authenticate its identity. It will then create a network link back to the device that allows it to reach internal network resources, such as file servers, printers and intranets, as if it were on the same local network.

A VPN usually relies on either Internet Protocol Security (IPSec) or Secure Sockets Layer (SSL) to secure the connection. However, an SSL VPN can also be used to supply secure access to a single application, rather than an entire internal network. Some VPNs also provide Layer 2 access to the target network; these will require a tunneling protocol like Point-to-Point Tunneling Protocol or Layer 2 Tunneling Protocol running across the base IPSec connection.

What is a site-to-site VPN?
Site-to-site VPN technology uses a gateway device to connect the entire network in one location to a network in another location. The majority of site-to-site VPNs that connect over the internet use IPSec. Rather than using the public internet, it is also typical to use career multiprotocol label switching clouds as the main transport for site-to-site VPNs.

VPNs are often defined between specific computers, and in most cases, they are servers in separate data centers. However, new hybrid-access situations have now transformed the VPN gateway in the cloud, typically with a secure link from the cloud service provider into the internal network.

What is a mobile VPN?
A traditional VPN can affect the user experience when applied to wireless devices. Using a mobile VPN helps to avoid slower speeds and data loss and offers users a high level of security for wireless communication. It can provide mobile devices with secure access to network resources and software applications on their wireless networks. It is also useful when users are facing coverage gaps, internetwork roaming, bandwidth issues or limited battery life, memory or processing power.

Mobile VPNs are designed and optimized to ensure a seamless VPN user experience when devices are switching networks or moving out of coverage. They generally have a smaller memory footprint, and because of that, require less processing power than a traditional VPN. Therefore, they enable a user’s applications to run faster while the battery is able to last longer.

Source: CNET.com
VPN Adoption Growing
In a Zoom Economy

- Security, anonymity, and regulatory / restriction avoidance are key drivers of VPN adoption
- Enterprise adoption is accelerating worldwide as remote work becomes the new normal at almost 13%, according to Global Insights
- North America is the largest market, but growth is faster in Asia
- These projections suggest a growth of over 11mm subscribers per month by 2025

**Figure:** VPN Market by Geography, 2015-2026
USD millions

**Source:** Global Market Insights
**Consumer VPN**

**Growing at 21% CAGR**

- Orchid network is focused on the consumer VPN portion of the market
- Category growth was robust before Covid and the new remote economy
- Consumer growth is projected to be a robust 21% CAGR between 2019 and 2026
- Information / news access and contact tracing are applications that made privacy a high-profile issue in 2020
- NordVPN revealed VPN traffic surged 165% across Europe since March 2020

**Figure:** Consumer VPN Market, 2015-2026
USD billions

Source: Global Market Insights
More than 1.1Bn users
>10mm monthly growth

- User growth reflects BitOoda’s aggregate global subscriber estimates, driven by Global Insight’s VPN market study
- Monthly user growth reflects unsmoothed Global Insight annual growth projections
## Competitive Landscape

### Key VPN Providers

- Most VPN providers offer significant discounts to a pay-as-you-go monthly price to lock in prepaid customers for 12, 36 or even up to 60 months.
- The prices below reflect the lowest available price discovered through our research, with a multi-month prepayment.
- A month-to-month subscription can cost up to 3x the “best price”.
- Many of these subscriptions come with monthly data caps and bandwidth limits.

<table>
<thead>
<tr>
<th>IP Addresses</th>
<th>Servers</th>
<th>Server Locations / Countries</th>
<th>Jurisdiction</th>
<th>Best Price / Month</th>
</tr>
</thead>
<tbody>
<tr>
<td>ExpressVPN</td>
<td>30,000</td>
<td>3000+</td>
<td>160</td>
<td>British Virgin Islands</td>
</tr>
<tr>
<td>Surfshark</td>
<td>1700+</td>
<td></td>
<td>British Virgin Islands</td>
<td>$2.49</td>
</tr>
<tr>
<td>NordVPN</td>
<td>5,000</td>
<td>5200+</td>
<td>62</td>
<td>Panama</td>
</tr>
<tr>
<td>ProtonVPN</td>
<td>1,050</td>
<td>54</td>
<td></td>
<td>US</td>
</tr>
<tr>
<td>IPVanish</td>
<td>40,000</td>
<td>1,300</td>
<td>60</td>
<td>US</td>
</tr>
<tr>
<td>TunnelBear</td>
<td>1,800</td>
<td>23</td>
<td></td>
<td>US / Canada</td>
</tr>
<tr>
<td>CyberGhost VPN</td>
<td>7100+</td>
<td>90</td>
<td>Romania</td>
<td>$2.75</td>
</tr>
<tr>
<td>Norton Secure VPN</td>
<td>1500+</td>
<td>200/29</td>
<td></td>
<td>$3.33</td>
</tr>
<tr>
<td>PureVPN</td>
<td>300,000</td>
<td>2,000</td>
<td>180</td>
<td>Hong Kong</td>
</tr>
<tr>
<td>StrongVPN</td>
<td>59,500</td>
<td>650+</td>
<td>46/26</td>
<td></td>
</tr>
<tr>
<td>Private Internet Access</td>
<td>3,252</td>
<td>37</td>
<td>US</td>
<td>$2.69</td>
</tr>
<tr>
<td>Hotspot Shield</td>
<td>50,000</td>
<td>3,200</td>
<td>/80</td>
<td></td>
</tr>
<tr>
<td>Windscribe</td>
<td></td>
<td></td>
<td></td>
<td>$9.00</td>
</tr>
<tr>
<td>Encrypt.me</td>
<td></td>
<td></td>
<td></td>
<td>$9.99</td>
</tr>
</tbody>
</table>

*Figure: Competitive landscape: best rated VPN providers
Based on multi-month or multi-year prepayments*
The Orchid Network
**Orchid:**
A decentralized bandwidth marketplace

- Orchid delivers a permissionless decentralized marketplace for bandwidth
- The developer community may build other applications in the future
- Focused on $70+Bn (2026) bandwidth market for Virtual Private Networks
- Enables connections to multiple providers, with multiple hops for more robust privacy
- Orchid customers can mix and match existing subscriptions using WireGuard & OpenVPN protocols with the Orchid protocol
- Enables customer growth for lesser-known VPN providers
- Pay-as-you-go suits light usage and encourages first-time users

**A two-sided marketplace for bandwidth**

**Users**
- Get the bandwidth they need
- Explore the Internet freely
- Perform multiple tasks at once

**Providers**
- Earn income
- Put extra capacity to use
- Reach more users

Source: Orchid
The Orchid Network Token

OXT powers the network

- Pre-mined ERC-20 token with a fixed supply of 1 billion OXT
- VPN providers can stake the token and receive network traffic proportional to their stake
- Subscribers to the service buy OXT and use it to pay for VPN service, based on usage rather than a fixed monthly fee
- The utility resides in VPN vendor revenue driven by relative token stake

Source: Orchid
Scalable VPN with White label providers

• VPN vendors can monetize excess bandwidth
• Customer acquisition costs for VPN vendors are the largest expense – bandwidth is cheap
• Share of customers acquired across the network is proportional to each vendor’s stake
• Resources of VPN providers will be required to help drive customer acquisition momentum
• Community is very active with a regular cadence of open-source contributions to the network, including Google Play, iOS App store, MacOS and a just-launched, well-received Windows desktop client

Network overview

Orchid solves the problems of incentives, scalability, and supply

Probabilistic Nanopayments
“Flip a switch” to pay for services just like household utilities

Staking
Orchid Token (OXT) staking requirements protect against abuse

VPN Aggregation
Orchid is a one-stop destination for private browsing

Source: Orchid
Orchid Providers
Largely Tier 2

- Orchid VPN providers tend to be Tier 2 vendors – smaller companies with fewer subscribers and spare capacity
- Orchid network helps address their customer acquisition by directing network customers to participating VPN providers
- Customer acquisition and scale are the big barriers to entry in VPNs
- Orchid network lowers these barriers for anyone who wishes to enter the space

Source: Orchid
Expanding ecosystem
Eases user experience

OXT is supported by the most popular wallets

- MetaMask
- Gemini
- Edge
- BRD
- Coinbase Wallet
- ImToken
- Trust Wallet
- ABRA
- BitGo
- Ledger

OXT now trades on the top exchanges worldwide

- Coinbase
- Coinbase Pro
- Gemini
- Kraken
- Bittrex Global
- Bitcoin.com
- OKEx
- ABRA
- 1inch
- IDEX
- Uniswap
- Coinlist
- Binance
- Binance US
- CoinDCX

Source: Orchid
Growing social media presence

Drives adoption

- Orchid network through its community of users and providers has demonstrated accelerating social media presence
- Although it is still early, network effects can help drive adoption
- It is noteworthy that Orchid already has over 50k Twitter followers, while industry leader NordVPN has about 84k followers as of this writing

**Orchid’s social channels are growing fast**

- **Twitter** - 58,504 followers
- **Telegram** - 8,106 members
- **Reddit** - 2,500 members
- **KakaoTalk** - 1,984 members
- **WeChat** - 11,000+ members

Source: Orchid
Target markets
Already receptive to VPN adoption

- The service is oriented toward key markets that have demonstrated consumer VPN demand
- Language compatibility is essential to penetrating Asian markets – and the Orchid app is already compatible with most local languages

Targeting the markets with high VPN use

<table>
<thead>
<tr>
<th>Country</th>
<th>Population</th>
<th>Internet Users</th>
<th>% Using VPN</th>
<th>Approx. Total VPN Users</th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>1,394,015,977</td>
<td>904,000,000</td>
<td>29%</td>
<td>262,160,000</td>
</tr>
<tr>
<td>Indonesia</td>
<td>267,026,366</td>
<td>171,260,000</td>
<td>61%</td>
<td>104,468,600</td>
</tr>
<tr>
<td>South Korea</td>
<td>51,835,110</td>
<td>46,350,000</td>
<td>17%</td>
<td>7,879,500</td>
</tr>
<tr>
<td>Japan</td>
<td>125,507,472</td>
<td>116,800,000</td>
<td>9%</td>
<td>10,512,000</td>
</tr>
<tr>
<td>US</td>
<td>332,639,102</td>
<td>280,860,000</td>
<td>25%</td>
<td>70,215,000</td>
</tr>
<tr>
<td>UK</td>
<td>65,761,117</td>
<td>62,100,000</td>
<td>23%</td>
<td>14,283,000</td>
</tr>
</tbody>
</table>

Source: Orchid
Orchid is timely
Amid rising privacy concerns

- Privacy is a particularly relevant issue in 2020
- Orchid’s team has been a thought leader during this challenging year, helping both highlight concerns and also offer solutions
Community Milestones
Past 12 months

- Orchid’s open-source community has maintained a steady cadence of progress over the past 12 months
- The availability of a Windows command line client is an important step, paving the way for a full GUI
- This would be a catalyst, in our view

Dec 2019
Coinbase lists OXT
App available on Android and iOS
Testflight

Jan 2020
Additional Top VPN providers join the network

Feb 2020
Support for English, Japanese, Korean, and Mandarin

Mar 2020
CNET calls it “the next generation of privacy tech.”

Apr 2020
Bloq builds OXT staking demand

May 2020
CoinList and Gemini list OXT

Jun 2020
Kraken lists OXT
Chainlink provides OXT pricing oracle support.

Jul 2020
iOS App Store launch with in-app purchases, MacOS client launch

Aug 2020
Support for WireGuard, third VPN protocol, after Orchid and Open VPN

Sep 2020
Indodax, largest Indonesian crypto exchange, lists OXT

Dec 2020
Linux and Windows command line client

Figure: Key milestones

Source: BitOoda, Orchid
Future Orchid network community initiatives
Community-led service expansion

- Orchid essentially is a platform that the community can use to build additional internet services (in addition to the fully functional VPN service), including adjacent products such as computing power, storage, video processing and delivery
- A robust ecosystem will see a variety of third parties seek to identify market needs and develop solutions

Orchid V2: a decentralized market for services

Orchid V2 will enable general-purpose nodes

Users will be able to buy services beyond bandwidth on Orchid

Source: Orchid
# OXT’s Peer Group Overview

- We look at BAT, LINK, OCEAN, OMG and SIA as the peer group for OXT
- Most of these projects are further along than OXT
- OXT is yet early in the adoption curve

---

<table>
<thead>
<tr>
<th>Name</th>
<th>Ticker</th>
<th>Description</th>
<th>Status</th>
<th>Market Cap</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic Attention Token</td>
<td>BAT</td>
<td>Privacy focused browser with BAT token rewards for opt-in to advertising</td>
<td>22mm monthly active users</td>
<td>$934mm</td>
</tr>
<tr>
<td>Chainlink</td>
<td>LINK</td>
<td>Decentralized smart contract oracle bringing off-chain data on-chain</td>
<td>Live on mainnet since 6/1/2019</td>
<td>$13,088mm</td>
</tr>
<tr>
<td>Ocean Protocol</td>
<td>OCEAN</td>
<td>Proof of Stake Data sharing protocol</td>
<td>Running on Ethereum mainnet</td>
<td>$485mm</td>
</tr>
<tr>
<td>OMG Network</td>
<td>OMG</td>
<td>A trustless, non-custodial, Layer-2 scaling solution for value transfer on Ethereum</td>
<td>Live, including USDT integration</td>
<td>$901mm</td>
</tr>
<tr>
<td>Sia coin</td>
<td>SIA</td>
<td>Decentralized peer to peer cloud storage platform</td>
<td>Live, early stage</td>
<td>$613mm</td>
</tr>
</tbody>
</table>

**Orchid Protocol**  
**OXT**  
**Programmable Virtual Private Network protocol delivering a decentralized bandwidth marketplace**  
**Live, early stage**  
**$317mm***

*OXT market cap excludes treasury tokens*
Token Economics
OXT Token economics
Staking share = revenue share

- VPN providers acquire and stake OXT tokens
- Their share of the network traffic and revenue is based on their share of stake
- User account balances are charged for services provided
- VPN providers receive revenue according to delivered bandwidth
- Their share of revenue equals share of bonded tokens
- It takes 3 months to unbond tokens, during which those tokens do not count toward the revenue share
- Revenue earned is not bonded and can be liquidated to pay expenses

**User**
- Buys OXT or fiat "package" to prepay account
- Currently balance is held in OXT in smart contract, but user experience need not involve crypto
- OXT balance is charged on usage

**Orchid Network**
- Selects VPN provider on relative stake size
- User payment released to VPN providers on probabilistic traffic
- This simulates "nanopayments" with fewer transactions and lower ETH gas fees

**VPN Provider**
- Stakes OXT
- Is selected to provide service proportional to OXT stake
- Receives tokens from user as payment for service
Token Supply: 497mm
Tokens released as of Dec 9

- OXT has a fixed supply of 1 billion tokens
- Of these, 497 million have been released as of Dec 9, 2020
- As per Orchid Lab’s treasury policy, no more than 10 million OXT per month will be available for potential release, beginning Dec 9, 2019

---

![OXT Token Allocations](image)

<table>
<thead>
<tr>
<th>Allocation Type</th>
<th>Allocated</th>
<th>Issued</th>
<th>Pending</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seed SAFT</td>
<td>172,500,000</td>
<td>172,500,000</td>
<td>0</td>
</tr>
<tr>
<td>SAFT 2a</td>
<td>44,940,046</td>
<td>22,470,022</td>
<td>22,470,024</td>
</tr>
<tr>
<td>SAFT 2b</td>
<td>33,790,106</td>
<td>33,790,106</td>
<td>0</td>
</tr>
<tr>
<td>Team A</td>
<td>122,500,000</td>
<td>122,500,000</td>
<td>0</td>
</tr>
<tr>
<td>Team B</td>
<td>93,520,000</td>
<td>93,520,000</td>
<td>0</td>
</tr>
<tr>
<td>Team C</td>
<td>17,296,268</td>
<td>9,985,247</td>
<td>7,311,021</td>
</tr>
<tr>
<td>Team D</td>
<td>3,732,312</td>
<td>1,851,837</td>
<td>1,880,475</td>
</tr>
<tr>
<td>Other</td>
<td>40,500,000</td>
<td>40,500,000</td>
<td>0</td>
</tr>
<tr>
<td>Treasury / Network Incentives</td>
<td>471,221,268</td>
<td>0</td>
<td>471,221,268</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>1,000,000,000</td>
<td>497,117,212</td>
<td>502,882,788</td>
</tr>
</tbody>
</table>

Source: Orchid.com
~32mm OXT released
To SAFT 2a and team after 12/9

- SAFT 2a token holders paid $0.50 per OXT, vs. $0.70 for SAFT 2b holders
- SAFT 2a holders received half of their tokens on Dec 9, 2020, with the balance received in 6 subsequent equal monthly tranches
- The final Tranche D of token issuance to the Orchid team also unlocks over time

<table>
<thead>
<tr>
<th>Release Date</th>
<th>Seed SAFT @$0.03</th>
<th>SAFT 2a @$0.50</th>
<th>SAFT 2b @$0.70</th>
<th>Tranche A</th>
<th>Tranche B</th>
<th>Tranche C</th>
<th>Tranche D</th>
<th>Other</th>
<th>Treasury</th>
</tr>
</thead>
<tbody>
<tr>
<td>Released to Dec 9, 2020</td>
<td>172,500,000</td>
<td>22,470,022</td>
<td>33,790,106</td>
<td>122,500,000</td>
<td>93,520,000</td>
<td>9,985,247</td>
<td>1,851,837</td>
<td>40,500,000</td>
<td></td>
</tr>
<tr>
<td>January 6, 2021</td>
<td>3,745,004</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>January 9, 2021</td>
<td>3,745,004</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td><strong>93,520,000</strong></td>
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<td><strong>3,732,312</strong></td>
<td><strong>40,500,000</strong></td>
<td><strong>471,221,268</strong></td>
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</table>

Figure: OXT Token Release Schedule
USD million

Source: Orchid.com
Value Accrual
Value accrual to staked token

Driven by network usage, revenue and stake

- The entire user base has purchased bandwidth credits in a variety of currencies. The balances are held in OXT in Ethereum smart contracts.
- User accounts are charged as per usage.
- VPN providers are selected proportional to their stake and total revenue accrues proportionally to the providers.
- Thus, we can outline the key variables of the network economics as follows:
  - Some 7-15% percent of new VPN users will install the app or otherwise explore Orchid.
  - We assess a conversion rate of 5-10% of these “installs” is reasonable and in line with other common apps and services. A small but growing number of new subscribers would switch from other VPN vendors – Orchid has no switching costs between vendors in the network, while many incumbents lock in customers with pre-paid annual or 2-3 year subscriptions.
  - We assume an average monthly revenue per user (ARPU) of $3-6, which is consistent with incumbents although we note that the non-expiring pay-as-you-go credit system implies unlimited rollover, which is ideal for light users who may underutilize traditional monthly usage limits.
  - Based on these assumptions, one can estimate monthly Orchid network revenue for providers.
  - VPN providers in the Orchid network have the same bandwidth infrastructure costs as traditional VPN models. There is an additional ETH gas transaction fee cost for the smart contracts, but a saving on customer acquisition costs in the Orchid environment. Customer acquisition is the largest cost for incumbent VPN providers.
  - The revenue and after-expense income earned by the VPN provider is directly proportional to stake.
  - Each provider should see the identical revenue per OXT token staked as the overall network average.
  - Revenue / OXT is a function of network usage (subscribers x ARPU) and number of tokens staked by providers.
  - While only staked tokens earn revenue, those earnings represent an opportunity cost for other token holders who prefer liquidity.
  - We assess this revenue per OXT is the key driver of value accrual for each 100,000 tokens staked by provider.
Monthly Orchid Installs
Projected at 7-15% of industry user growth

- We assume that 7-15% percent of new VPN users will install the app or otherwise explore Orchid
- Many new users may check out multiple solutions before making a selection
- There is limited functionality for the app until a user pays for it

Figure: Monthly installs of Orchid solutions, compared with broader market growth

Source: BitOoda estimates, Global Market Insights
Implied market share of VPN
Estimated at 4-36bp by the end of 2025

- In the base case, we assume 7% of installs eventually convert to paid subscribers (5%-10% in bear and bull scenarios), from an initial near-zero conversion rate.
- Given that functionality is curtailed until payment is made, the actual conversion rate is currently around 10%, though we caution that it is early.
- Our model scenarios imply a market share of between 4 and 36 basis points.
- We believe a 0.13% market share is reasonable in the base case and that a 0.35% market share might be achievable in the bull scenario.

Figure: Orchid implied market share if subscriber growth assumptions are met
1 basis point = 0.01%

Source: BitOoda estimates
5 Year Revenue Model
For Providers
$1.3 – 11mm in monthly network revenue

- Based on our model assumptions, the monthly install growth translates into a paid subscriber base of between 0.5-4 million users
- The model is sensitive to both the install rate and the conversion rate
- Further, we assume average revenue per user ranges from $3-6 per month
- Combining the lowest assumption set leads to a bear case revenue projection for providers of $1.3 million per month; base case is $6.5mm, with a high end of $11.3mm

Figure: Monthly Network Revenue is a function of Monthly Installs and Conversion Rate to Paid Users, as well as Average Revenue per User

Source: BitOoda Estimates, Global Market Insights
Gross profit growth for providers
Drives increased staking, stabilizing per-staked token earnings

- As adoption grows and the network sees increased revenue per month, the number of staked tokens can be expected to follow suit.
- We estimate the stake peaks at ~25% of total supply, leaving room for user holdings.
- The rate of staking growth should prove to be a competitive process, as each provider would increase their stake – to the extent economically viable – to increase their revenue share.
- Hence, monthly gross profit per 100k staked tokens should stabilize.

Figure: Revenue growth could drive increased token staking and stabilizing gross profit per staked token for VPN Provider network.

Source: BitOoda estimates
We summarize the three cases below:

- The revenue and gross profit estimates refer to the entire network of participating VPN providers.
- We assume that the providers grow their OXT stakes along with subscriber growth in a competitive effort to maintain or grow share within the network.
- Based on these criteria, VPN providers could earn annualized gross profit of up to $0.58 per token by the end of 2025.
- We assess that the fundamental value of an OXT token is related to the earning potential of a staked token, perhaps with some liquidity premium for tokens held by VPN providers or users that are not staked.
- We view our approach as a framework for valuing the OXT staked token.
- However, we do not ourselves attempt to value the OXT staked token.

### Scenario Summary

A Valuation Framework For Staked Tokens

<table>
<thead>
<tr>
<th>Case</th>
<th>Average Monthly Revenue per User</th>
<th>Paid Users in Month 60</th>
<th>Revenue</th>
<th>VPN Provider Gross Profit</th>
<th>Staked Tokens</th>
<th>Annualized Gross Profit / 100k Staked Tokens</th>
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<tr>
<td>Base Case</td>
<td>$5.00</td>
<td>1,488,512</td>
<td>$6,518,540</td>
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<td>Bear Case</td>
<td>$3.00</td>
<td>517,980</td>
<td>$1,352,070</td>
<td>$1,137,835</td>
<td>147,822,647</td>
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<td>Bull Case</td>
<td>$6.00</td>
<td>4,106,847</td>
<td>$11,317,491</td>
<td>$9,409,793</td>
<td>196,333,715</td>
<td>$57,513.05</td>
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</tbody>
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**Figure:** Adoption Scenario Summary, Dec 2025  
**Source:** BitOoda estimates
Risks
Risks to our adoption thesis

**Downside Risks**

- Sufficient numbers of VPN providers may not join the network or may not remain, limiting available capacity – although we believe demand would invite supply
- Delivered download speeds could fail to keep up with the competition or degrade with increasing adoption
- The volatility of the OXT token could cause unacceptably high fluctuations in the volume of future bandwidth available with the account balance
- Pay-as-you-go model could attract a lower-usage customer mix, with account balance lasting longer than expected
- This could drive disappointing monthly revenue per user
- Customer acquisition costs for providers could prove high relative to the average revenue per user and be unsustainable vs the lifetime value of a user
- This could prove especially challenging should Orchid emerge as a low-cost entry-point for first-time VPN users, many of whom later migrate to incumbent VPN providers
- VPN providers are the only ecosystem participants who earn revenue, but since revenue is proportional to stake, they have no incentive to allocate funds to customer acquisition
- A robust customer acquisition model may need to be developed by providers and the Orchid network community in order for the ecosystem to experience healthy growth if organic growth is not sufficient

**Upside Risks**

- Revenue could exceed our projections if Orchid’s market share surprised to the upside on word-of-mouth publicity
- Current privacy concerns are creating a supportive environment for VPNs – industry growth could prove more robust than expected
- There may be a community of potential VPN customers who have stayed on the sidelines because of the high cost of entry and 12-36 month commitments needed to get the best subscription rates
- VPN providers and Orchid network community could develop a robust customer acquisition model that drives upside to the subscriber base
- Average monthly usage patterns could prove stronger than modeled
- Subscriber growth should drive scalable capacity growth as the revenue opportunity attracts new providers as well as incentivizes investment by incumbent providers
- We assess that the Orchid protocol could find applications in data storage, computation, video processing and delivery. Any community initiatives in these areas that gain traction would be additive to our estimates

**We examine what could cause actual results to fall outside of the ranges we have outlined**

**Although early signs are promising, Orchid is only slightly past a large-scale public beta**

**Customer acquisition costs for providers, average revenue per user, market share growth and conversion rates are all highly uncertain and could surprise, both to the downside and the upside**
Disclosures

Purpose
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Sam Doctor, the research analyst denoted by an “AC” on the cover of this report, hereby certifies that all of the views expressed in this report accurately reflect his personal views, which have not been influenced by considerations of the firm’s business or client relationships.

Conflicts of Interest
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