MINERVA

The world's first reverse merchant processor.

MINERVA (OWL) addresses mainstream cryptocurrency adoption issues with Proof-of-Transaction, a set of executing properties designed to mitigate risk and generously reward merchants who accept the OWL cryptocurrency as payment with sustainable cashback in the form of a reverse transaction fee. MINERVA doesn't charge transaction fees, it pays them.

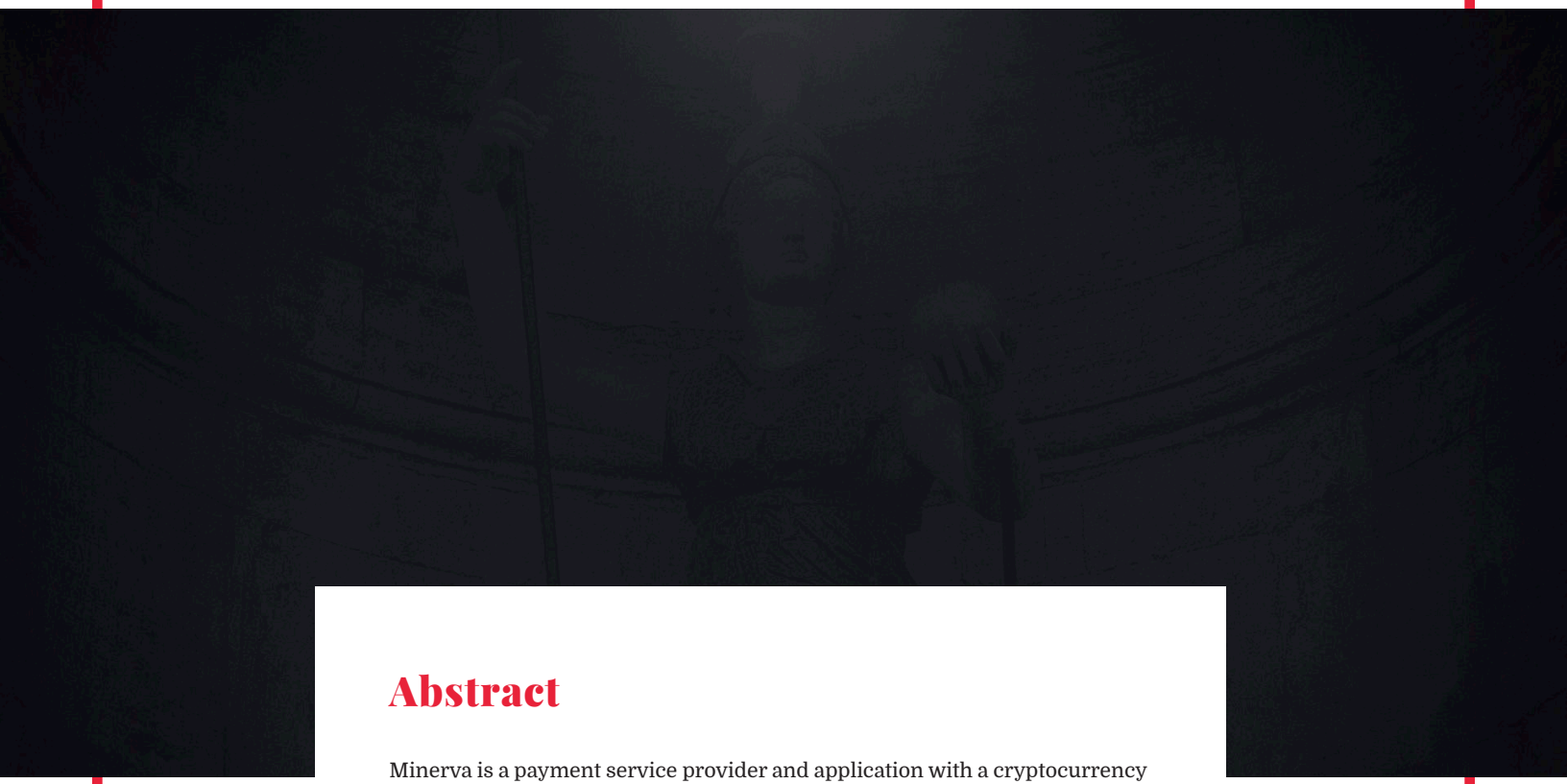
Welcome to "Smart Money" on the blockchain.

Kevin McSheehan, Corey Jackson,
Kol S., Robert F., Jevgenijs S., Paul P., Greg B.

Last Revision: January 4, 2018

* This document is for informational purposes only and does not constitute an offer or solicitation to sell shares or securities in Minerva or any related or associated company. Any such offer or solicitation will be made only by means of a confidential offering memorandum and in accordance with the terms of all applicable securities and other laws.

- **Abstract** 3
- **Introduction To Minerva** 4
  - The Owl of Minerva Backstory 4
- **Minerva Advantage** 5
- **Specifications** 6
  - Technology 6
  - Service and Application Layer 6
  - Financial Security Audits 7
- **Distribution & Supply Model** 7
  - Advanced Methods 7
  - Equation Details 7
  - Distribution & Supply Math Model 8
  - Fork From Ethereum to a New Blockchain 9
  - Minerva Volatility Protocol 9
  - Trial & Subscription Billing with Smart Contracts 10
  - OWL/USD Price Reporting & Voting 11
- **Frequently Asked Questions** 12
- **Integration & Usage** 13
  - Risk Mitigation 13
  - Merchant Incentives 13
  - User Incentives 13
- **Immediate Use Case** 14
- **Minerva Smart Money Alliance (MSMA)** 14
- **Token Sale** 15
  - Basic Information & OWL Migration 15
  - Private Presale 15
  - Final Token Sale 15
  - Discount Structure & Explanation 15
  - Reserve OWL 16
- **Minerva Bug Bounty** 17
  - Minerva's Aggresive Bug Bounty Program 17
  - Social Engineering & Phishing 17
  - Security Vulnerabilities 18
  - In-scope 18
  - Bounty Award Process 18
- **Roadmap** 19
- **Project Team** 20
- **Advisory Board** 20
- **Conclusion** 20



Abstract

Minerva is a payment service provider and application with a cryptocurrency utility token (OWL) which provides an additional revenue stream to approved merchants accepting it as a method of payment. We seek to demonstrate less violent short-term fluctuations through Proof-of-Transaction and introduce incentivized payment solutions to accelerate the mainstream adoption of digital currencies and smart contracts.

Minerva solves an immediate problem with an immediate use case.

Integrating with a **$20 million annual revenue** platform with over **10 million users.**

Introduction to Minerva

Built initially with smart contracts on the Ethereum blockchain, Minerva aims to incentivize approved merchants to adopt its cryptocurrency as a new payment method. Incentivization is achieved by rewarding these merchants with newly minted OWL. These are generated at a variable rate as OWL, Minerva's cryptocurrency, is used.

Today's cryptocurrencies have a serious problem. They're rarely used as currency. The problem is compounded by excessive short-term price swings which creates substantial risk for many merchants to accept them as a viable currency.

We envision a world where smart contracts help address the issue of excessive volatility, changing the way businesses approach cryptocurrencies. By bridging the gap between commerce and cryptographic assets we aim to assist in bringing cryptocurrencies mainstream.

The OWL of Minerva Backstory

Owls were the first widely used international coin. These thick, heavy, silver coins minted more than 2,500 years ago were arguably the most influential of all coins. Through careful control, Owls became known due to great quality and consistent weight, resulting in merchants using them for their portability and global acceptance. They were produced for over four hundred years, and remain the most widely recognized ancient coin among the general public today.

> "The owl of Minerva spreads its wings only with the falling of the dusk."
>
> — Georg Wilhelm Friedrich Hegel, 19th-century idealist philosopher, Oxford, 1967

This is widely interpreted as meaning that philosophy comes to understand a historical condition just as it passes away. Hegel's view on freedom is an interesting one, as he was writing in the wake of the French Revolution he placed great emphasis on how human freedom can be achieved.

Minerva Advantage

New cryptocurrencies are introduced almost daily. Some find utility use, but many are abandoned after their novelty phase wears off. We are committed to building a cryptocurrency with longevity that is viable to be used as actual currency. We believe the use of cryptocurrency as currency hasn't yet been correctly executed. Bridging the gap between routine commerce and the crypto-space is essential for the mainstream adoption of cryptocurrency.

Minerva takes a four pronged approach to achieving this goal:

1. Address the volatility issues present in cryptographic assets.
2. Incentivize merchants with a "reverse transaction fee," which is more or less a system of sustainable cash back for merchants.
3. Request that approved merchants, in turn, pass their earnings onto their clients in the form of discounts or bonuses.
4. Facilitate trials and monthly subscription memberships with smart contracts and cryptocurrency.

We ask:

- What if Ripple provided a unique advantage to companies in industries beyond banking and other financial institutions?
- What if Bitcoin was not controlled almost exclusively by speculation?
- What if Ethereum's mining rewards went to companies that accepted it as payment and were accrued by the merchant's customers?

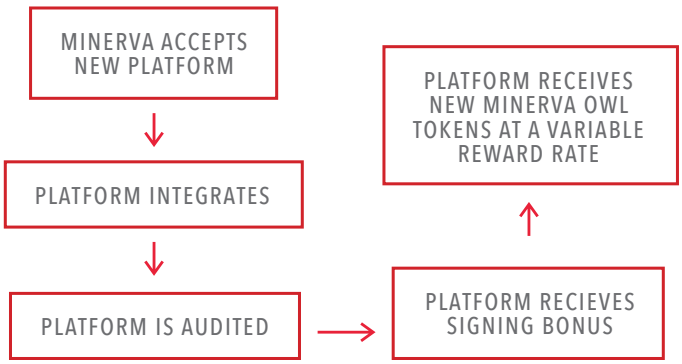
Specifications

Technology

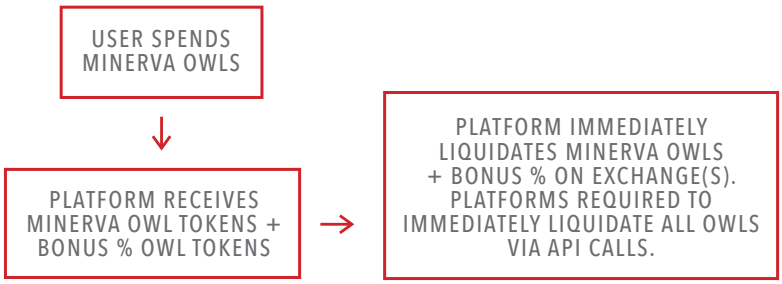
OWL is presently an ERC20 token and Minerva is a payment processor running on top of smart contracts built on the Ethereum blockchain. Following this standard, OWL are easily transferable between approved merchants and their clients by using ERC20-compatible wallets, and can be smoothly integrated into exchanges.

Service and Application Layer

Certain OWL will be held and issued to approved merchants to serve as “signing bonuses” subjected to a slow-time-release and distributed on a first-come, first-served basis at a variable percentage of the bonus vault until a point where the vault becomes nearly exhausted rendering signing bonuses fiscally inconsequential.



Signing bonuses are in addition to bonus Minerva OWL issued to approved merchants via Proof-of-Transaction at a variable rate designed to ease inflation and combat violent price swings. With this model, OWL can be exchanged for services on integrated merchant platforms and released back into the market by approved merchants, thereby creating the added monetary value. Excluding the private pre-sale and final, public crowdsale, OWL cannot be generated by any other method.



This fundamental revenue-generating aspect of Minerva allows approved merchants to increase their revenue immediately upon implementation, and grants more flexibility to these merchants to reward their customers with discounts.

Financial Security Audits

The Minerva team commits to subjecting its platform to comprehensive financial security audits. We will implement multiple strategies to provide maximum transparency in the management of assets. The goal is to prove the following:

1. All integrated merchant profits are properly recorded.
2. The company is in possession of all declared funds.

For each merchant accepting the Minerva OWL as a payment method, we will create a view-only API key which will allow anyone to verify the balance and trade history of its account. To prevent abuse, monitoring and resource tracking will limit users from the exploitation of reward rate loops.

Distribution & Supply Model

Advanced Methods

Minerva uses two advanced methods to increase and decrease the OWL supply.

The first method mints new OWL and inserts them into the circulating supply when an approved merchant accepts OWL as a payment method. The rate at which OWL are currently entering the economy is called the “reward rate.” The reward rate is directly proportional to the price of OWL: as the price rises, the reward rate rises. The reward rate will rise until it increases the total supply enough to prevent violent short-term price swings. When the reward rate is greater than zero (0), a portion of the rewards are taxed to sustain Minerva, and another portion is sent to a smart contract to be stored for incentivizing future MVP and voting participants. The inherently inflationary reward rate used to reward approved merchants is hard capped at 10%. This hard cap means supply will not dramatically change during episodes of significant growth, enabling the market price to naturally stabilize when artificial steadying is inadequate.

The second method sterilizes OWL when its price is decreasing. Instead of a negative reward rate, we enact a system which incentivizes users to temporarily take their OWL out of circulation. Users will freeze their OWL with our MVP contract in exchange for a potential bonus after their funds stay frozen for a certain amount of time. In any instance of price decrease, the MVP contract may be used, but the more drastic the price decrease at the time of MVP contract funding, the higher the bonus given to participants. In the event of a prolonged decline in which the MVP vault funds are exhausted, OWL will have to naturally regain stability as we cannot issue bonus OWL unless they exist.

Equation Details

The equations in the next section explain the circulation of assets in the economy; we use these to adjust the reward rate in order to mitigate price volatility. Price, which is determined through a Schelling points-based voting system to be explained later in this document, will be our known variable. Using price, we can adjust the reward rate to increase the supply or, in the case where the reward rate would be negative, take actions to sterilize assets. Rewards increase as the price increases according to a linear model, thereby guaranteeing that the rewards will increase the supply enough to catch up to rising expected demand.

Distribution & Supply Math Model

Minerva cryptocurrency circulation equation:

$$M_t V_t = P_t Y_t$$

Product demand equation:

$$\frac{dY_t}{Y_t} = \beta + \gamma \left[\frac{dM_t}{M_t} - \frac{dP_t}{P_t}\right]$$

Speculative transactions velocity:

$$V_t = 1 + k \left[\frac{M_t - B_t - P_t Y_t}{M_t}\right]$$

Minerva reward rate targeting:

$$r = max\left\{0, z\left[\frac{dM_t}{M_t} - \frac{dP_t}{P_t}\right]\right\}$$

Minerva supply:

$$\frac{dM_t}{M_t} = \frac{Y_t[r(1-\mu)] + W_t}{M_t}$$

Returns paid for those MVP tokens *j* being redeemed at time *t*:

$$W_t = \sum_j B_j R_j$$

MVP token rate targeting:

$$R = max\left\{0, -\delta\left[\frac{dM_t}{M_t} - \frac{dP_t}{P_t}\right]\right\}$$

Model variables:

- Minerva cryptocurrency supply, M
- Speculative transactions, V
- Product output / demand, Y
- Minerva price index, P (Minerva per unit real demand)
- Reward rate, r
- MVP token return rate, R
- Sum of all MVP token values Bi outstanding at time t, Bt
- Return rate for MVP token Bi established when bought, Ri

Model parameters:

- Output growth rate per period (t), β
- Elasticity of output growth to an increase in real Minerva supply, γ
- Elasticity of speculative transactions to Minerva excess supply, k
- Sensitivity of reward rate to real money supply, z
- Sensitivity of MVP token return rate to real Minerva supply, δ
- Term to MVP expiration, T
- Minerva deposit insurance, μ

Fork From Ethereum to a New Blockchain

Due to cost and scalability problems present in the current Ethereum protocol, Minerva plans to hardfork to a more suitable blockchain. The process of forking will occur as follows:

The fork date will be announced via email list and confirmed by Minerva.com months before we shut down the ERC20 system. On the announcement day we will also launch our new blockchain system. To convert your ERC20 tokens to new OWL tokens, you must first register for an account on Minerva.com. As with crowdsale verification, you will verify ownership of your Ethereum address. You will then be able to send ERC20 OWL tokens to a burn contract that destroys them and credits your account with an equivalent amount of new OWL tokens.

Prior to this fork, we may enact minimum OWL/USD spending requirements on approved platforms to ensure the stability of the Minerva Volatility Protocol.

Minerva Volatility Protocol

The Minerva economy uses OWL tokens, an MVP contract, and Voting tokens.

Minerva is the underlying infrastructure on which its economy is based. Rewards for approved merchants are directly introduced to the economy as OWL tokens, and these OWL tokens are used for all normal transactions.

The MVP contract becomes accessible during episodes of price decrease. Its purpose is to incentive users to temporarily take OWL tokens out of circulation in order to effectively decrease OWL supply and bring the OWL/USD price back up. When users freezes their OWL tokens, they will potentially receive a bonus in OWL tokens when their original OWL tokens are released. This varies on how low OWL/USD was at the time of MVP smart contract funding, and the amount of time their tokens were frozen.

MVP bonuses are never guaranteed without the reserves necessary to satisfy them. A tax is collected from rewards (reverse transaction fees) provided to approved merchants during times when the reward rate is positive in order to deposit into the “MVP Vault” which funds both voting and MVP participation incentives. If the vault is able to distribute enough bonuses to MVP contract participants to exhaust up to all of its current funds, no more bonuses can be given.

Voting tokens are exchanged for users “voting” on (reporting) the current OWL/USD conversion rate to a smart contract. These are necessary because votes are still required during prolonged periods of price decrease, and we therefore cannot guarantee immediate rewards since the MVP vault which holds rewards for voting can at times become exhausted.

```
/**
  * @dev Creates new deposit struct for deposit and updates participant struct.
  * @dev Only accepts deposits from participants then transfers their tokens to this address.
  * @param amount Amount of OWL tokens to be deposited to parking.
**/

function deposit(uint256 amount)
  isParticipant // Require the sender to be a whitelisted crowdsale participant
returns (bool success)
{
    // Transfer tokens from participant to parking contract
    assert(owlToken.transferFrom(msg.sender, address.this, amount));

    uint256 bonus = amount * currentRate / 100; // Extra tokens to incentivize parking
    uint256 maturationDate = now + maturationTime; // Date when deposit & full bonus can be withdrawn
    uint256 newDeposit = participants[msg.sender].currentDeposits + 1; // Index for this deposit
    deposits[msg.sender][newDeposit] = (amount, bonus, maturationDate); // Create & store deposit struct

    participants[msg.sender].currentDeposits += 1; // Keep track of a participants # of deposits
    return true;
}
```

Voting tokens are exchanged for users “voting” on (reporting) the current OWL/USD conversion rate to a smart contract. These are necessary because votes are still required during prolonged periods of price decrease, and we therefore cannot guarantee immediate rewards since the MVP vault which holds rewards for voting can at times become exhausted.

Trial & Subscription Billing with Smart Contracts

OWL is the only cryptocurrency with subscriptions built into its token. To accomplish subscriptions with other cryptocurrencies, a consumer would have to relinquish control of their funds or manually pay their subscription each month. With Minerva, a user can sign-up for a recurring subscription as easily as they would send a payment. This is a recurring subscription that requires the consumer to trust no one, is very simple, and is impervious to chargebacks.

A recurring subscription is achieved by a consumer using a web3 browser plugin such as MetaMask, and the consumer calling a function with the subscription title as the only parameter. However, Minerva aims to simplify the subscription process with internally designed software and sales funnels for merchants. We are committed to simplifying the subscription process until it ultimately resembles more of a traditional checkout process than an experiment in cryptocurrency.

As noted in the Merchant Incentives section, Minerva eliminates the necessity of banks and credit cards in the facilitation of trial and subscription membership processing. Many merchants, especially those in high chargeback verticals such as adult, travel, nightclubs, etc. stand to benefit from Minerva as a new, alternative billing solution.

In addition, with methods employed to reduce short-term volatility, eliminate chargebacks and financially incentivize merchants with Proof-of-Transaction and the Minerva Volatility Protocol, Minerva and OWL stand to be an attractive billing solution for merchants in every vertical.

The Solidity code for subscribing is as follows:

```
/**
 * @dev Customer calls subscribe with the title of the subscription to sign up.
 * @param _title The title of the subscription to sign up for.
**/

function subscribe(string _title)
  external
returns (bool success)
{
    // Get information on the subscription.
    CustomSubscription memory customSub = subscriptionInfo[_title];

    // If there is a trial, only take the trial price from sender.
    uint256 initialCost;
    if (customSub.trialPeriod > 0) {
        initialCost = customSub.paidTrial;
        if (initialCost > 0) this.transfer(customSub.beneficiary, initialCost);
    } else initialCost = customSub.cost;

    // Long-term subscription only starts after the trial period.
    uint256 subscriptionStart = now + subscriptionInfo[_title].trialPeriod * 1 days;

    // Craft the unique subscription info for the buyer with the start time and last paid (now).
    UniqueInfo memory uniques = UniqueInfo(subscriptionStart, now);

    // Add the sender to the list of this custom subscription's subscribers.
    subscribers[_title].push(msg.sender);

    // Add the new unique info to the subscriberInfo.
    subscriberInfo[_title][msg.sender] = uniques;

    // Add the subscription to the list of this sender's subscriptions.
    subscriptions[msg.sender].push(_title);
    return true;
}
```

In this code you see the user paying the initial trial cost, and their new subscription being recorded in their records and the records of the approved merchant.

The approved merchant will then call a function when a user's subscription requires payment and OWL will be automatically transferred from the user to the merchant, and the subscription payment information will be updated. If desired, the subscription can be cancelled by the user or the merchant at any time.

OWL/USD Price Reporting & Voting

In order to maintain a decentralized safeguard in determining the approximate OWL/USD conversion rate, we use a voting system based on a Schelling point method inspired by Vitalik Buterin's SchellingCoin, yet modified to be more resilient against manipulation (explained further below). In addition to the normal transfer of OWL, users will be able to use a function which allows for the transferring of tokens and voting within a single transaction. Because of this "piggybacking," voting will require minimal gas (Ethereum transaction fee) costs. In exchange for voting, voters are provided a specific number of voting tokens correlated to their stake deposited for the vote.

Minerva employs four key methods to deter voter manipulation:

1. Oracles polling exchanges for automated OWL/USD reporting as a first line of defense with a decentralized voting process as a failsafe.
2. A deposit is required to vote; the deposit corresponds to the influence the participant's vote has on OWL's "contract price" and the deposit decides the reward received for voting. This deposit will be lost if the vote is found to be illegitimate.
3. A "votechain" is employed in this process. The votechain permits further judgment of the validity of past votes as new votes are input. When a participant votes on the current price, they are also asked to input the price from selected past moments. These votes are then compared against the previously cast votes and votes found to be illegitimate will lose their deposit. "Illegitimate votes" are defined as not falling between the 25th and 75th percentile--and not being reasonably close to either end--given a sufficient sample size.
4. If the amount of votes is sufficient, all cast votes are rewarded, while at the same time only a certain percent are permitted to influence the contract price of Minerva.

In addition to these voter manipulation prevention tactics, Minerva employs the following methods to avoid manipulation of MVP (Minerva Volatility Protocol) OWL/USD price reporting:

1. The time at which the new contract price comes into effect is randomized so as to avoid a level of predictability that would allow manipulators to know the optimal times to deposit into the MVP contract.
2. A small fee is enacted when releasing MVP bonuses or a required holding time is set to discourage market activity that resembles speculative trading.
3. An "MVP Door" is enacted in which the price must decrease for a certain period of time before the ability to deposit to the MVP contract is available.

Frequently Asked Questions

How is Minerva profitable if it PAYS transaction fees?

Minerva taxes a portion of paid out reverse transaction fees for operational costs.

Why isn't cryptocurrency more widely used?

The biggest reasons cryptocurrencies aren't more widely used are: the amount of money saved by using it is often less than the costs of using it, and the price of cryptocurrencies often change dramatically over short periods of time, making it difficult for both buyers and sellers to feel comfortable using them.

Why would people spend OWL instead of fiat currency or other cryptocurrencies?

Minerva's OWL is preferential to fiat currency for users because of the incentives approved merchants will be provided based on the rewards system. Approved merchants receive rewards when OWL is used. We firmly suggest that these merchants take full advantage of this extra revenue stream by offering their customers discounts, freebies and exclusive content for paying with OWL.

Does the reward rate invariably have to hit zero and stay there permanently?

The reward rate doesn't have to hit zero. If OWL's market price is rising for any reason, the reward rate will not be zero. Since supply rising decreases the price of OWL, we can increase supply as the price increases in order to decrease the price and prevent short-term violent rises and decreases in price. We will be able to use various methods to decrease the amount of OWL in circulation, one notable method being the MVP (Minerva Volatility Protocol) system described in the "Distribution & Supply Model" section of this document.

If the economy is ever-expanding we can keep reward rates forever, but if the reward rate does hit zero it is a good thing. It would likely imply that OWL is very widely used, and at that point, if the OWL stays stable for a long time, we could abolish reward rates altogether. It is important to remember that bonus OWL will never be issued to approved merchants unless the bonuses can be accounted for.

What is your token sale's soft cap?
$1,000,000

What is your token sale's hard cap?
$10,000,000

Integration & Usage

Risk Mitigation

The founder of Ethereum, Vitalik Buterin, has said, “There would then be multiple separate classes of cryptoassets: stable assets for trading, speculative assets for investment, and Bitcoin itself may well serve as a unique Schelling point for a universal fallback asset, similar to the current and historical functioning of gold.” While Bitcoin itself is not the unique Schelling point, our aim is for OWL to become a comparatively stable cryptocurrency which allows businesses to benefit by simply accepting it as a method of payment.

The reward system is designed so OWL enters the economy at variable rates, making efforts to ensure that demand does not cause short-term volatility. As is evident below with our first and immediate use case, we will be integrating with a large company at launch, and future businesses requesting integration will require vetting through a rigorous security-focused protocol.

Speculation, exchange scams, drug markets and the common negative publicity of cryptocurrencies will all have little-to-no impact on our partnered merchant platforms. Minerva tokens have utility beyond speculative value as they represent a practical medium of exchange between merchants and customers, as well as agents, contractors, vendors, content creators and more.

Merchant Incentives

Minerva provides a generous reward system for businesses that accept it as payment. Upon receiving Minerva OWL, each merchant is issued a bonus that resembles a credit card’s “cashback” incentive. When Minerva’s OWL is received from their customers, they are automatically liquidated to fiat.

Merchant incentives include:

1. Instant liquidity via API from Minerva-relevant exchanges.
2. The elimination of chargebacks and reduction of traditional fees.
3. More protective measures from short-term cryptocurrency price volatility.
4. Reverse transaction fees, a sustainable cashback system for merchants.
5. Eliminating the necessity of banks and credit cards in trial and subscription processing.

User Incentives

When customers pay using Minerva’s OWL, approved merchants have more flexibility to offer them discounts. This is because, rather than paying transaction fees, Approved merchants can be paid bonus OWL at the time of each approved transaction. Users are able to purchase OWL from any exchange or market where they are traded, transfer them to one of many ERC20-compatible wallets and spend them on Minerva-integrated platforms.

Immediate Use Case

The first merchant to integrate into the Minerva economy is a live-streaming service with $20MM in revenue and over 10 million users. We will show a clean and concise before-and-after revenue impact of integrating with Minerva. At this time, Minerva has been advised to temporarily withhold the name of our first partnered business. We aim to integrate across a wide spectrum of large niche and mainstream businesses spanning several industries by recruiting select groups into the Minerva Smart Money Alliance (MSMA).

Minerva will allow content creators to receive payments and exchange funds indiscriminately while enabling the business to provide more value to both customers and content creators alike.

Minerva Smart Money Alliance (MSMA)

The Minerva Smart Money Alliance (MSMA) is a proposed consortium of organizations that either accept OWL as payment or are strategically partnered with Minerva Technologies Limited, an Isle of Man based blockchain software company and parent entity to the Minerva platform. We plan to work with various groups and individuals to optimize value exchange and the secure storage and transmission of sensitive data. It should also be clarified that “Smart Money” is a double entendre specific to the OWL cryptocurrency and Minerva platform.

Token Sale

Basic Information & OWL Migration

Early adopter participation takes place through a token sale dashboard accessible via Minerva.com. 60,000,000 of roughly 100,000,000 total initial OWL tokens will be distributed in two token sales. A private presale followed by a final token sale. 40,000,000 Minerva will be excluded from the token sale which is described below in the "OWL RESERVE" section. After the initial roughly 100,000,000 OWL tokens are created, new token creation, apart from bonuses associated with merchant platform utility, will be halted permanently. Within 1 year (365 days) of the token sale an announcement will be made regarding any potential 1:1 token exchanges relating to any proposed private blockchain migrations. Such an announcement would be made via mailing list, confirmed on the Minerva.com website and across all official social media channels. All OWL token transfers may be restricted for unspecified period of time no longer than 1 year (365 days) after the completion of the token sale.

Private Presale

We will be holding a token presale which will likely be held privately for accredited parties. The hard cap for the presale is $3MM.

Final Token Sale

After the token presale the primary and final token sale will take place. The total hard cap between the private presale and primary public crowdsale is $10MM, and the soft cap is $1MM.

Discount Structure & Explanation

Private Presale Structure

Price per OWL: $0.175
Total Funding: $10,000,000
OWL Tokens Distributed: 100,000,000

Discounts:

- **$0 - 1MM:** 40% discount ($0.105 per OWL) ($1,666,667 in token value) = 9,523,809 OWL
- **$1MM - 2MM:** 30% discount ($0.122 per OWL) ($1,434,426 in token value) = 8,196,721 OWL
- **$2MM - 3MM:** 20% discount ($0.140 per OWL) ($1,250,000 in token value) = 7,142,857 OWL

Total Tokens Distributed: 24,863,387

- **OWL distributed without discounts for first $1MM:**
  $1,000,000 / $0.175 = 5,714,285 OWL
- **OWL Distributed after 40% discount for first $1MM:**
  $1,000,000 / $0.105 = 9,523,809 OWL
- **Total extra OWL tokens distributed for first $1MM:**
  9,523,809 OWL - 5,714,285 OWL = 3,809,524 OWL

Estimated OWL tokens remaining after presale hard cap: 75,136,613

Token Sale Price Structure

Price per OWL: $0.175
Example Price of Ether: $900
ICO Hard Cap: $10,000,000 - Presale
** All math below is presented on the basis that the presale hard cap was successfully reached ($7,000,000 remaining)

Discounts in regard to ETH contributed:

- 0-2,000 15% Discount
- 2,000-2,500: 12.5% Discount
- 2,500-3,000: 10% Discount
- 3,000-3,500: 7.5% Discount
- 4,000-5,000: 5% Discount
- 5,000-6,000: 3% Discount
- 6,000-Hard Cap: 1% Discount

Token Sale ETH Hard Cap: Every contribution will be based on $0.175 per OWL, before discount. The token sale portal will be self-adjusting to the current price of ETH (Ethereum) at the time of contribution. We will adjust the hard cap of the public and final token sale, prior to the official launch, based on the amount raised in presale. If, $3MM raised presale, our, token sale's hard cap will be set to $7MM worth of ETH. (i.e. 7,777.77 ETH @ $900 ETH estimated market price).

Example of OWL to ETH Ratio: 1 ETH @ $900 = 5,142 OWL

To ensure the hard cap can be reached without running out of tokens, we will be creating tokens as ETH (Ethereum) is sent to the token sale smart contract. Using a set price of $0.175 per OWL and factoring in the amount raised during pre sale, we can allow ourselves to reach hard cap without having to limit ourselves to our projected 60,000,000 Owl estimate. The primary issue with a discount model (and fluctuating price of ETH) is trying to cap the amount of tokens that can be distributed prior to launching the smart contracts.

This method will let us reach our hard cap and ensure that all discounts are satisfied.

If the presale hard cap is not reached, the main adjustable number for our public token sale is the amount of ETH we accept in the 1% discount range. This will allow our discounts rates to be consistent and still reach our hard cap.

We aim to integrate into an exchange that is beneficial to the Minerva ecosystem soon thereafter.

At the end of the token sale the founding team will receive a 20% allocation of OWL tokens, subject to a twelve-month (12-month) holding period. These tokens will serve as a long-term performance incentive for management and the founding team. An additional 7% will be allocated to strategic advisors, 5% for long-term operational costs, 5% partnership signing bonuses (new approved merchants), 2% for a bug bounty and 1% for a promotional bounty.

CALLING ALL HACKERS!

MINERVA BUG BOUNTY

Introducing Minerva's Aggressive Bug Bounty

In line with our security-forward approach, we are issuing an open letter to all hackers. We do not care if you are a ruthless blackhat behind seven (7) proxies, an ethical whitehat who follows the rules, or anything in between. We do not care if you are the evil hacker who drained $30M from an ICO contract running Parity or a stand-up guy who teaches the elderly how to use anti-virus software and ad-blockers. If there are critical security vulnerabilities present in Minerva, and you find them, you will be significantly rewarded with Minerva. The tech world, and the world itself, would not look the way it does today without hackers.

Social Engineering And Phishing

This counts. We are not quite sure why this is not included in many bug bounties. Human error is a massive security issue. As a hypothetical target, if you are able to socially engineer our web host and/or data center and gain access to critically sensitive information we would, in this case, be switching web hosts and/or data centers and paying you for your efforts. However, if such actions violate the TOS (terms of service) of a hypothetical target, due to the potential negative legal consequences of this Minerva and its parent entity would both discourage these actions and waive all legal liability involving such an incident.

Critical Security Vulnerabilities - Smart Contracts

Vault contract error: exploit in the MVP/voting vault which may result in significant loss of funds
Voting contract error: direct exploit in voting contract that results in significant loss of funds
Voting Token ERC20 error: any error critical to the operation of the token
MVP ERC20 error: any error critical to the operation of the token
Minerva OWL ERC20 error: any error critical to the operation of the token

Critical Security Vulnerabilities - Minerva.com

Anything resulting in significant financial loss in excess of $100K (100 thousand)

Not-So-Critical Security Vulnerabilities

Creative DDOS attack vectors
Creative spamming attacks

We follow most of the Ethereum bug bounty rules and the severity ranking chart for low, medium, and critical severity vulnerabilities. In the bounty we also include small vulnerabilities such as accidental function failure, functions not working as intended, and even functions not working as described. Please report any vulnerabilities no matter how small.

Not Vulnerabilities

Targeted attacks on Minerva team members
Self-XSS
Forced logout CSRF
Simple web oddities without critical privilege escalation
Rate-limits
Password structure
Vulnerabilities unrelated to Minerva exploitation on 3rd party platforms
Vulnerabilities involving privileged access.
User enumeration
Automated scans without detailing critical issues
Creating multiple accounts from the same email address by altering the address

In-Scope

Minerva smart contracts / Minerva.com / Crowdsale.Minerva.com / Private Blockchain / Minerva Software

Bounty Award Process

Bounties will be awarded from the roughly 2,000,000 (2% equivalent) reserved OWL vault set aside for this bug bounty program. This vault will be used to issue bounties to qualifying hackers and will be subjected to a slow-time-release algorithm and distributed on a first-come, first-served basis at a rate of 1% of the reserved pot for critical vulnerabilities, and at a rate of 0.1% for not-so-critical vulnerabilities until a point where the pot becomes nearly exhausted and a 0.1% to 1% bounty is fiscally inconsequential. At such a point, the Minerva parent entity would compensate you for your efforts.

Roadmap

Tier 0 (Complete)

Base Platform Development
Internal Market Simulations
Integration Testing / Compliance
Content Translation
Legal Counsel
Initial Security Auditing

Tier 1

Advanced Internal Security Audit
Bug Bounty Program (Tier 1)
Advanced Simulations and Modifications
MVP (Minerva Volatility Protocol) Beta
Exchange Integration Communications

Tier 2

Minerva Smart Money Alliance (Tier-1)
Team Expansion (Tier-1)
Bug Bounty Program (Tier-2)
Cross Platform Minerva Wallet
Voting Dashboard
MVP Dashboard and Management
Merchant Integration Automation
New Merchant Platform Developer Documentation
Improved Revenue Reporting Interface

Tier 3

Minerva Smart Money Alliance (Tier-2)
Team Expansion (Tier-2)
Advanced Platform Automation
Advanced Revenue Reporting Interface
Resource Tracking
Continuous Audit Implementation
Cross Platform Minerva, Ethereum & General Purpose ERC20 Wallet

Tier 4

Minerva Smart Money Alliance (Tier-3)
Team Expansion (Tier-4)
Private Blockchain Research
Debit Card Partnership(s) Research

Tier 5

Minerva Smart Money Alliance (Final Tier)
Team Expansion (Tier-5)
New Blockchain Research

Tier 6

Team Expansion (Final Tier)
New Blockchain Fork

Notice: While Minerva makes no guarantees of specific timeframes, and certain roadmap items may take out-of-order precedent over others, we make a good faith assurance that we will work to push out the most critical elements of the Minerva platform during 2018. We will keep the community informed via the Minerva.com blog as well as through our social media channels and email newsletters.

Project Team

Kevin McSheehan – Founder / CEO
Corey Jackson – Founder / Lead Developer / CTO
Kol Shtufaj – Creative Director, Brand & UI/UX
Robert Forster – Lead Solidity Developer
Greg Bailey – Strategist
Keidi Carrington – Attorney
Paul Petratos – Head of Communication
Courtney Turner – Social Media Strategist
Jevgenijs Steinbuks – Founding Economic Advisor

Advisory Board

Michael Brooks – Strategic Advisor
Rob Johnson – Strategic Advisor
Steven Ormond-Smith – Strategic Advisor
Lee Hills – Strategic Advisor
Bryce Case Jr. – Strategic Advisor

Conclusion

Minerva is a platform and its cryptocurrency, OWL, is designed to be used as a currency; employing methods to influence the supply of OWL, we aim to combat extreme short-term price swings that plague other cryptocurrencies.

We employ a smart money cycle powered by real economic activity and business incentives. A positive feedback loop occurs that expands the Minerva market: The more incentives we provide for businesses to accept the Minerva OWL, the more purchases will occur. The more purchases that occur, the less impact speculation will have on OWL's market price. The less impact speculation has, the more stable the market price will be. The more stable the market price, the more purchases occur.

If the value of the OWL cryptocurrency increases, more incentives are provided to businesses to accept it as payment, therefore increasing the supply and stabilizing the market price. If the value of the Minerva OWL decreases, more incentives are provided to freeze Minerva OWLs in the MVP contract, effectively decreasing the supply and stabilizing the market price.

In our quest to stabilize the Minerva OWL we have spent considerable time ensuring that our volatility model is both viable as well as the most optimal decentralized cryptocurrency stabilization solution to date (outside of fiat tethering, a system reliant on cash reserves that presents non-trivial risks of frozen assets via the direct and indirect affiliations to traditional bank accounts). Additionally, fiat tethering prohibits cryptocurrencies from appreciating or depreciating in value in a volatility-tolerable manner and is limited in its flexibility and application in comparison to Minerva.

As an endeavor in "smart money" and "reverse merchant processing," we assert no claims regarding any initial high volatility in market behavior or outcomes for an unspecified period of time as Minerva becomes institutionalized through community participation, platform integration, and the utilization of MVP (Minerva Volatility Protocol).

Market simulations aside, we use real-world field testing to produce critical data with our immediate large-scale use case. We expect to encounter challenges, and we expect to overcome them. We will continue to work with accredited economists, mathematicians and programmers with the goal of producing the most optimal Minerva-compatible stabilization model achievable. Through concerted time and effort will be needed, it is a realistic expectation that Minerva and its OWL cryptocurrency will become one of the most enterprise-friendly platforms and cryptocurrencies available.