

# PLANET NINE

**White Paper**

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## A NEW DIGITAL ECONOMY

**In 2008 the Bitcoin white paper introduced a decentralized system for exchanging value via a distributed ledger called blockchain, creating the first cryptocurrency.**

Over the next few years a number of new cryptocurrencies entered the market. The most notable cryptocurrency after Bitcoin is Ethereum. Ethereum introduced a new concept to the blockchain space: a smart contract. Ethereum's smart contracts allowed anyone to utilize the Ethereum network of nodes for their own purposes. This led to people creating their own tokens on the Ethereum network and an avalanche of cryptocurrencies arrived.

At the start, all of these tokens were fungible--that is one unit of a token could be exchanged for any other unit of that token. Soon thereafter, the concept of non-fungible tokens was explored. CryptoKitties burst on the scene with a non-fungible token game where their tokens represented different digital cats. These cats (tokens) were trade-able and could be used to create more cats (tokens). Since CryptoKitties there have been a number of other non-fungible token projects to launch in the crypto space, but none have quite caught the attention of everybody the way CryptoKitties did at its launch.

Gaming is a natural fit for cryptocurrencies and non-fungible tokens. A non-fungible token is a way of representing a digital asset and almost every game has some notion of a digital asset whether that be a weapon, or a card, or a monster. Cryptocurrencies themselves work similar to in-game currencies like gold or gems, in both cases there's a ledger keeping track of transactions and your balance, just one's decentralized.

Unfortunately the similarity breaks down when it comes to usability. In gaming, the user experience, and especially user on boarding, is paramount. In crypto, the user experience is sorely lacking and getting started is difficult and costly. Secondly, most games give you a way to earn their in-game currency as you play (even if purchasing it is how they make money). To earn cryptocurrency you need thousands of dollars of equipment to mine it.

Today in the market, there is already some overlap between online games and cryptocurrencies. dApps (distributed apps) are integrating cryptocurrencies into their platforms. However, these games are limited by the user-base of those cryptocurrencies. None of the dApps are getting more than a [few thousand daily users](#).

## **Planet Nine believes there is a better way to optimize the gaming and crypto experience.**

By leveraging the usability of in-game currency and its natural alignment to both fungible and non-fungible tokens, there is an opportunity to make a cryptocurrency that is as easy and fun to use as those found in gaming. By focusing on the game as a way to earn crypto, the experience of cryptocurrencies that is currently confusing and largely inaccessible can be enhanced and more accessible to a broader range of users.

Below we discuss a dual-resource protocol that attempts to create a compelling user experience for users to engage with a digital economy that is made up of digital resources similar to cryptocurrencies and non-fungible tokens. While not quite a cryptocurrency, the first of two resources, Power, behaves like an in-game currency that you can use to find the second resource, Nineum, which is a non-fungible token. Combining these two digital resources into the dual-resource protocol alongside open source developer tools enables a platform that is scalable, is easy to implement into 3rd-party applications, and allows for broad adoption across various media. With Planet Nine, any game can become a means of earning profit for both the game developer and the gamer.

## **PROBLEM**

**Since 2008 the world has been working to understand cryptocurrencies. What are they exactly and how can they benefit individuals and humanity?**

Most cryptocurrencies are fungible tokens with a finite token pool. Fungible means that one token is the same as any other token and they can be exchanged as such. Most tokens are only available to purchase using fiat (i.e. regular) currency like US Dollars. This fact has brought the scrutiny of the SEC in the US and regulatory bodies in countries around the world. When combined with a finite token pool, the value of these tokens should go up over time. This is indeed what has happened making many of these tokens too expensive for the average person to engage with.

Though "Crypto" is leading the way in using technology to redefine currency, it's too hard to set up, earn, and spend which deviates from the fundamentals of currencies. Fiat currencies generally are earned over time in exchange for work. Cryptocurrencies do not behave the same. To start, one must navigate the confusing process of setting up a wallet on any of the myriad cryptocurrency platforms. Then, to partake in the economy, one must pay to invest in one or more of the currencies. This on boarding experience followed by a paywall results in aggravation. Additionally, once the wallet is set up and an investment has been made, there is no reliable way to continue to earn the cryptocurrency over time.

## Market Size

The online and gaming worlds have seen a growing number of microtransactions in order to monetize content. These microtransactions take two forms. First there are monetary transactions under \$3.00 which are carried out either by standard transactions or in-game currencies. Second are advertisements which are themselves microtransactions where a third-party (the advertisement platform) pays the monetary value and the user pays with their time and attention. A dual-resource protocol can replace both of these.

[CNET predicts](#) that in-game consumer spending will hit \$32 billion in 2020. While another survey by [W3i](#) shows that about 6% of in-game revenue comes from transactions between \$0.99 and \$1.99. If we extrapolate that out to say about 9% of revenue comes from transactions between \$0.00 and \$2.99 then a dual-resource protocol has a target market of \$2.88 billion. Even 1% (\$28.8 million) of that market is significant, and we don't know the additional effects of utilizing a dual-resource protocol. If that encourages more spending then the market grows further.

In-game consumer spending is large, but advertising itself is much larger. eMarketer estimates that global digital advertising spend will be \$327 billion by 2019, of which about \$105 billion will be for mobile games. Ads are monetized on a cost per mil (CPM) and cost per click (CPC) basis. If the CPM for an ad stream is \$5.00 then the effective price of each individual ad impression is \$0.005 this is a perfect range for a dual-resource protocol. If a protocol can replace even 1% of 1% of these ads, that will be \$32.7 million.

<b>TAM</b>	<b>SAM</b>	<b>TAM</b>
<b>\$108.9 B</b>	<b>\$55.5 B</b>	<b>\$108.9 B</b>
<b>World-wide Gaming Market</b>	<b>Free-to-Play Gaming Market</b>	<b>Highest Earning Free-to-Play Game</b>

## Fungible Tokens

The crypto space has both fungible and non-fungible tokens. Fungible tokens can be exchanged for each other and usually act as currencies whereas non-fungible tokens are unique and can't be exchanged for each other similar to collectibles like baseball cards. Fungible crypto tokens (cryptocurrencies) have the problem of trying to compete with fiat currencies in their respective marketplaces. Any currency is given value because it is a medium of exchange for a marketplace. Little paper tickets have value at the beer festival because they're the medium of exchange for beer at the festival. Similarly the US Dollar has value because it's the medium of exchange for the largest marketplace in the world. Cryptocurrencies unfortunately cannot establish themselves as the de facto medium of exchange for a national marketplace and thus are doomed to fighting an uphill battle for adoption. Looking at these three examples, we can see that digital currency can have greater adoption in a contrived marketplace such as the beer festival.

This is a double-whammy. The first problem limits the adoption of new currencies. The second problem limits their usage. Money that's hard to get and hard to spend is hardly going to replace fiat currency any time soon. Certainly in some unstable places, cryptocurrencies provide a modicum of security, but insulating oneself from the volatility of the Bolívar only does so much good for a bag-holder in Duluth.

## Non-fungible Tokens

Non-fungible tokens, or digital assets, are an even more recent development than their fungible cousins. First what is a non-fungible token? Fungibility is the property of a good whereby a unit of that good can be exchanged for another of the same unit of that good. For example gold is fungible because one ounce of gold is the same as any other ounce of gold. Money needs to be fungible by definition, one dollar is the same as every other dollar. A good becomes non-fungible when its units cannot be interchanged. For example houses are non-fungible because one house is different from all other houses, even if they have the same floor plan, their locations will differ making them unique.

When you read about fungibility, it's usually presented as a binary--either something is fungible or it isn't. But the real world is of course never so simple. There are a whole range of goods that are fungible in one respect and non-fungible in another. Take beer as an example. Beer manufacturers go to great lengths to ensure that each of their beers taste the same, that they would be fungible with each other. At the same time Beer manufacturers go to great lengths to ensure that their beer does not taste like any competitors making their beer non-fungible with other brands. Virtually everything we consume that's branded falls into this category of fungible within/non-fungible without. For lack of a better term let's call these types of goods half-fungible.

Current non-fungible token specifications are not capable of gracefully handling the half-fungible case. This is because current specifications give non-fungible tokens unique addresses which do not contain additional information about the token itself. This is not that big of a deal in context of a single digital experience for the non-fungible tokens. A database mapping addresses to values is sufficient for providing the half-fungible feel of the asset. For non-fungible tokens to be used in multiple digital experiences, however, half-fungibility must be taken into account.

## Centralization vs Decentralization

When Bitcoin was released it was heralded as having solved Byzantine Fault Tolerance, a long-sought after goal for trust-less decentralized systems. Decentralized systems are those where no person or organization is responsible for the smooth operation of the system. Instead members of the system hold each other accountable for adherence to their protocols and delivery of a consistent user experience. Centralized systems are essentially every system that exists outside of the cryptocurrencies and crypto-assets that have implemented Byzantine Fault Tolerance. Centralized systems do have a person or organization responsible for smooth operation of the system, and usually this manifests itself as a company with a platform.

There are many decentralized projects out there, and many reasons to prefer decentralization. Unfortunately the big issue with decentralized systems currently is scalability. The most popular decentralized protocols, Bitcoin and Ethereum, cap out at ten transactions/second and 15 transactions/second respectively. Moreover as the transaction limit is approached, transaction fees for both platforms increase significantly.

A dual-resource protocol will hit those transaction limits at about 100,000 users (5-10 transactions per user per day). Starting off with a limit on your user base due to the protocol being used would not be a recipe for success. For this reason the Planet Nine implementation of a dual-resource protocol is starting off centralized. We are keeping open the possibility of making it decentralized if and when decentralized systems can meet the transaction threshold.

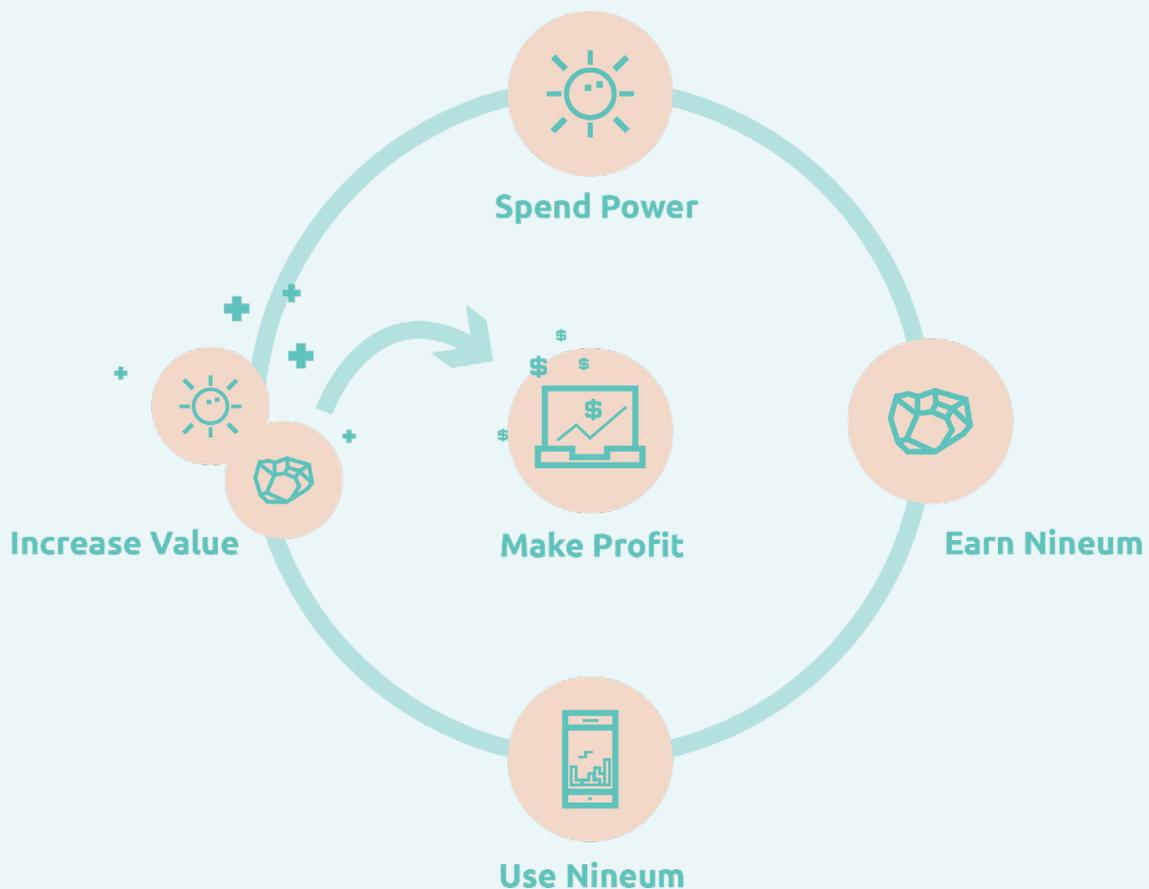
There are some other benefits that come along with being centralized. Most notably is account recovery. The Planet Nine platform will allow users to attach either email or phone number or both to their account in order to recover their account should their device be lost or stolen. This is an improvement over current decentralized systems where losing one's private key results in all their assets being lost forever.

This improvement comes at the cost of anonymity. While we believe there are some situations where anonymity is desirable, we believe in our system these are outweighed by the convenience of account recovery and the discouragement of illicit (anonymous) transactions that plague other systems.

## SOLUTION

Planet Nine introduces a dual-resource protocol that solves for the above. In the protocol there is a fungible resource called Power which is both free to earn and easy to spend. There is also a non-fungible resource called Nineum which is designed to be used in multiple gaming experiences.

Nineum could work as an inventory item in an RPG like World of Warcraft, or as a card in a game like Hearthstone, or as a collectible monster in a Pokemon-like game; there are a myriad of possibilities. These two resources, when used together, are able to provide value for their holders. This value can be realized by exchanging the non-fungible resource (Nineum) for the currency of one's choice - crypto or otherwise.



## Generating Value

Both Power and Nineum could exist on their own, but it is only when they are used together that they truly shine. A cryptocurrency that is evenly distributed among users and which regenerates over time, doesn't have any value of its own. Similarly, non-fungible tokens with useful properties aren't useful unless there is a way to get them. One strategy could be to airdrop the tokens to a group of interested parties, but that doesn't give a way for new users to engage in the system.

By creating Power and a way to join the system, and then using Power in order to gain Nineum, both Power and Nineum gain value. First Nineum gains value when it is used in digital experiences like games. For example a piece of Nineum could be an item in an RPG like World of Warcraft, and that same piece could be a card in a card game like Hearthstone, and that same piece could be a monster in a monster collecting game like Pokemon. Each one of those experiences increases the demand for Nineum.

If that demand lends itself to having the average price of Nineum to be say five cents per piece of Nineum then, because the only way to get new Nineum is by spending Power, Power will in turn gain value. At 200 Power per piece of Nineum, if the average price of Nineum is five cents then spending 200 Power is like spending five cents. This gives value to Power, which would have no value if it wasn't associated with finding Nineum. On the other hand, since Power is limited to the number of users of the system and time, the supply of Nineum is kept scarce, which in turn gives value to Nineum.

Both Power and Nineum supplies increase with users (assuming users are finding Nineum of course), both of their values should go down over time. At the same time, however, more users of Nineum experiences increases the demand and thus the value of Power and Nineum. The hope is that these two competing forces will work to stabilize the values of Power and Nineum over time, but if not the protocol can be adjusted to increase or decrease the rate of change in Power and Nineum supplies to provide stabilization.

## Power

Power is a fungible resource, meaning one unit of Power is the same as any other unit of Power. Unlike existing cryptocurrencies, one does not need to buy Power. Instead Power is granted to all users freely. When a user joins the dual-resource network, 1000 Power is added to the Total Power Supply and given to the user to spend as they please. Power that is used regenerates over time according to a Global Regeneration Rate that is the same for all users. Power regenerates until a cap is reached.

The cap is equal to the Total Power Supply divided by all users. This means if the current cap is over 1000 a new user will push the cap down. With every user bringing 1000 Power this means that the cap will never be under 1000. Users of the protocol can increase the Total Power Supply by purchasing additional Power. To start the protocol is pricing 1000 Power at \$4.99. This will be above the market rate of 1000 Power and is priced at a premium because this Power goes to increasing the Total Power Supply. In increasing the Total Power Supply, all users' Power cap increases thereby making each purchase benefit everyone.

As Power is spent, it will regenerate over time. At the start of the protocol this regeneration rate is 100 Power/hour. As with increasing the Power Supply, users will be able to buy Power Hours which will increase the Global Regeneration Rate. When users purchase a Power Hour it will increase the Global Regeneration Rate by the Power Hour Rate \* the Incrementing Rate. At protocol start the Incrementing Rate is set at 0.000003. This number was chosen as it's the rate where half a million Power Hours will double the Power Hour Rate.

The Total Power Supply and the Global Regeneration Rate combine to give every user the Power that they can use. The growth numbers and prices for each were chosen to allow the dual-resource protocol to grow organically and at a reasonable pace. All numbers are adjustable in order to guarantee the overall health of the protocol.

Power is not exchangeable and is not meant to ever be handed over to another user. Its only purpose is to "discover" Nineum. One finds Nineum by spending Power. Each time a user spends Power they do so with a partner. For transactions above the Power/Nineum threshold the additional Power is used for the partner to find Nineum. The Power/Nineum threshold is 200. So if a user spends 400 Power with the partner cooluser23 the user will find one piece of Nineum and cooluser23 will find one piece of Nineum. If a user spends 1000 Power with partner awesomeo9 then the user will find one piece of Nineum and awesomeo9 will find four pieces of Nineum. For numbers not divisible by 200 the fraction is used so if a user spends 300 Power with princesspeach33 then the user will find one piece of Nineum and princesspeach33 will have a 50% chance (100/200 or  $\frac{1}{2}$ ) of finding a piece of Nineum.

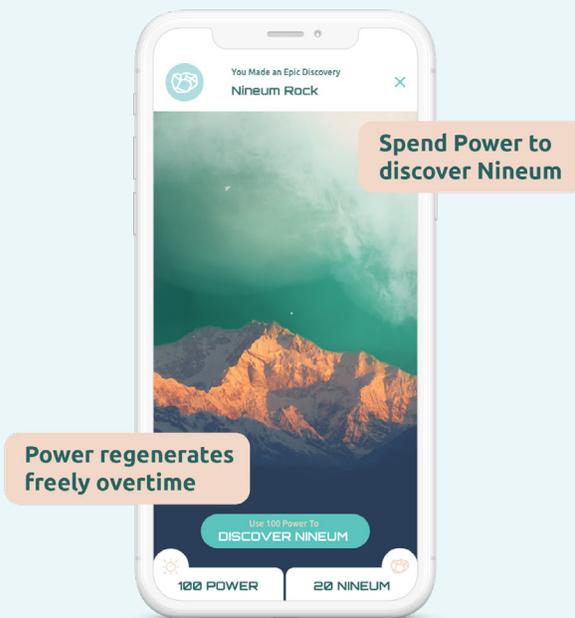
The Planet Nine app will feature a 400 Power transaction where the partner is Planet Nine. This is to make it as easy as possible for users to start discovering Nineum, and also gives a starting

point for people to compete with. Enterprising Nineum-seekers can provide a similar button, but have it cost 300 Power, or bolder Nineum-seekers might provide transactions of greater value for greater Power. For example, one might create a special power in a game for 600 Power.

The places where users can spend Power are called Power Gateways. Power Gateways are platform agnostic and we are building out libraries for every platform as we speak. The APIs for Power Gateways are open so others can build out libraries as well. For more information on how and where to build Power Gateways check out the Planet Nine Platform section.



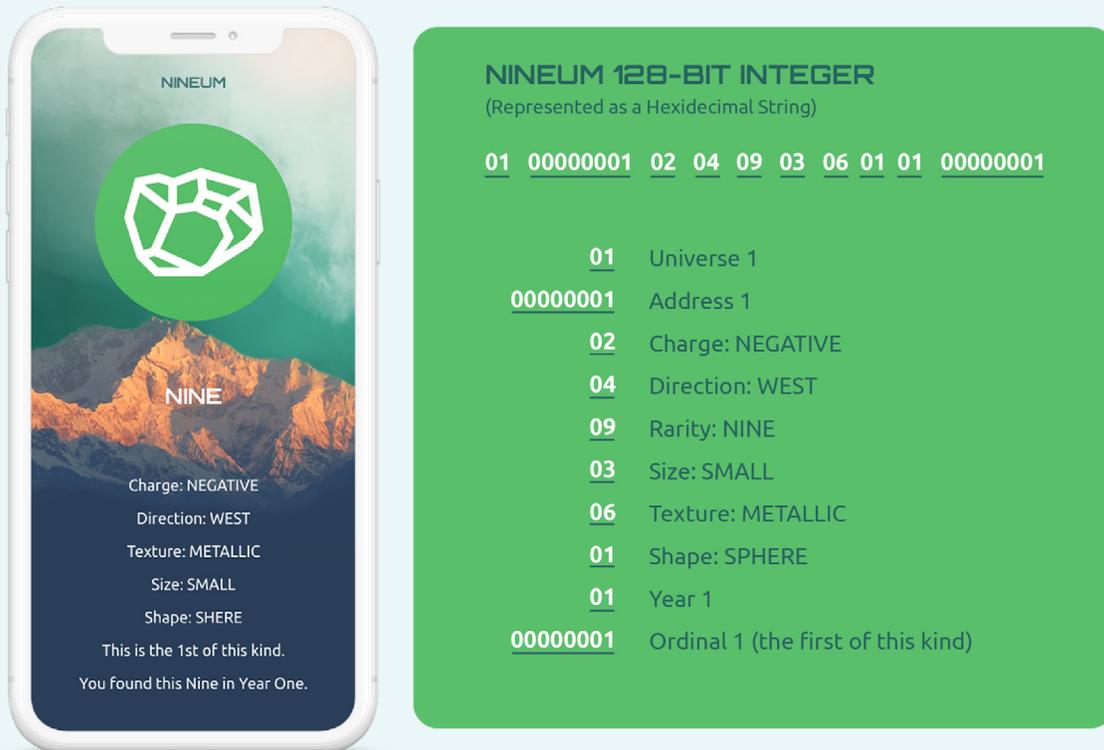
## HOW POWER WORKS



## Nineum

Nineum is a non-fungible token useful in digital experiences like games. The only ways of getting Nineum are to “find” it by spending Power or to purchase it from another user. As digital experiences are built that utilize Nineum, the demand for Nineum will increase. This demand, along with the fact that Nineum is both exchangeable and scarce will give value to Nineum. This value is then translated to Power as Power is the only way to find Nineum, just like how pickaxes become more valuable once people need them to find gold.

Each piece of Nineum is represented by a 128-bit integer. This integer encodes a number of properties that are useful for developers to utilize to develop cool experiences using Nineum. They breakdown as follows:



The image shows a smartphone on the left displaying a resource card for 'NINEUM'. The card features a green circular logo with a white geometric shape, a mountain landscape, and the text 'NINEUM' at the top and 'NINE' in the middle. Below the landscape, it lists properties: Charge: NEGATIVE, Direction: WEST, Texture: METALLIC, Size: SMALL, and Shape: SPHERE. At the bottom, it says 'This is the 1st of this kind. You found this Nine in Year One.'

To the right of the phone is a green rounded rectangle titled 'NINEUM 128-BIT INTEGER (Represented as a Hexidecimal String)'. It displays the hexidecimal string '01 00000001 02 04 09 03 06 01 01 00000001' with each byte underlined. Below this, a list of properties is shown with their corresponding bit values underlined: '01 Universe 1', '00000001 Address 1', '02 Charge: NEGATIVE', '04 Direction: WEST', '09 Rarity: NINE', '03 Size: SMALL', '06 Texture: METALLIC', '01 Shape: SPHERE', '01 Year 1', and '00000001 Ordinal 1 (the first of this kind)'.

**One byte - Universe:** This is the universe that the protocol lives in. Future universes are possible, but unexplored as of now.

**Four bytes - Address:** This is the address of the resource, many other addresses can live in the same universe as this dual-resource protocol. Future addresses will be for future resources.

**One byte - Charge:** This can be positive or negative. Other charges are possible as the protocol is explored.

**One byte - Direction:** This can be up, down, north, south, east, or west. Other directions are possible as the protocol is explored.

**One byte - Rarity:** This can be common, nine, uncommon, rare, epic, legendary, mythical. Other rarities are possible as the protocol is explored.

**One byte - Size:** This can be minuscule, tiny, small, medium, standard, big, large, huge. Other sizes are possible as the protocol is explored.

**One byte - Texture:** This can be soft, bumpy, satin, rough, gritty, metallic, plush, woolen. Other textures are possible as the protocol is explored.

**One byte - Shape:** This can be sphere, cylinder, tetrahedron, cube, octahedron, dodecahedron, cone, torus. Other shapes are possible as the protocol is explored.

**One byte - Year:** This is the numbered year since protocol start (starts at 1)

**Four bytes - Ordinal:** This is the ordinal of the Nineum with this universe+address+flavor.

As you can see there are a number of useful properties to help developers develop fun experiences using Nineum. The number of unique possible Nineum is  $\text{Charge} * \text{Direction} * \text{Rarity} * \text{Size} * \text{Texture} * \text{Shape} = 2 * 6 * 7 * 8 * 8 * 8 = 43,008$ , which seems to be a good number for game developers wanting unique items. This number can grow (or shrink though that's doubtful) over the lifetime of the protocol.

Note that this set up is perfect for half-fungible items as the flavor defines a unique item and the ordinal allows for multiple versions of that item. Nineum also has collectible flavoring built in with the different rarities. Of the seven different rarities their drop rate is as follows:



**Common:** ~27%



**Nine:** ~23%



**Uncommon:** ~20%



**Rare:** ~15%



**Epic:** ~8%



**Legendary:** ~4%

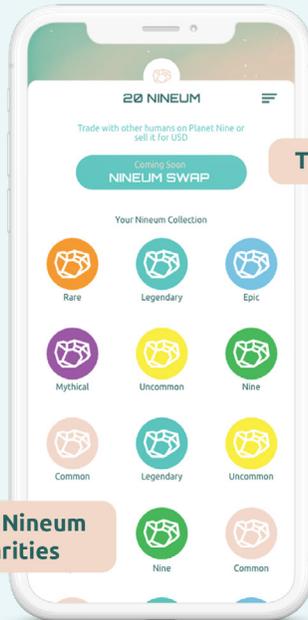


**Mythical:** <1%

As the only way to get new Nineum is through spending Power, the supply of Nineum is scarce based upon the Total Power Supply, global power regeneration rate, and rate of spending by the user base. The maximum amount of Nineum that can be found in a time T is given by  $URT/200$  where R is the Global Regeneration Rate and U is the total users. For example if there are 100,000 users and the Global Regeneration Rate is 200 Power/Hour and total time is 24 hours then the maximum Nineum that can be found is 2.4 million pieces of Nineum. In practice, less Nineum than the maximum will be found as not everyone will be 100% efficient in spending their Power.



## HOW NINEUM WORKS



Trade and Sell

Collect Nineum of all rarities



Nineum properties can be integrated and used by 3rd-party platforms

# OPPORTUNITY

## Adoption

As the Planet Nine Platform is free-to-use, and doesn't require a large upfront investment of resources, we expect adoption to grow steadily as more Planet Nine Gateways become available on the platform. These gateways are easy to develop and implement and work to drive adoption not only of Planet Nine, but also of the game/site/stream that is implementing the gateway as Planet Nine users will seek out experiences to use their Power in.

To bolster this virtuous cycle, Planet Nine will be looking to promote projects that have Planet Nine Gateways in them. This promotion will start by listing projects on the website. As the platform grows, other promotional avenues may be explored.

In addition to the above, Planet Nine will be collecting Nineum alongside its users. This Nineum may be sold in order to bolster the market, or it might be airdropped among users in order to drive user adoption. Planet Nine may also explore temporary increases to the Power Supply and/or the Global Regeneration Rate in order to help increase adoption.

## Monetization

The monetization for this dual-resource protocol doesn't come from taking a piece of the transactions, instead it comes from users supporting the protocol by increasing the Power Supply and Global Regeneration Rate. Thus the opportunity is a function of the total number of users and the monthly average revenue per user. At an average Nineum price of \$0.05, replacing the \$61.5 million worth of transactions discussed above would be  $61.5 \text{ million} / 0.05 * 200 = 246 \text{ billion Power}$ . This could be done by 280,000 users at the base Power Supply and Global Regeneration Rate.

The question is then, how much revenue can we expect from 280,000 users. At \$5.00 per 1000 Power and 0.000003 Global Regeneration Rate incrementing, it would take a little less than \$15.00 per user to double the Power Supply and thus the cap for users and double the regeneration rate. If we set doubling both as annual targets then we get a monthly average revenue \$1.25 per user. At 280,000 users this would generate \$350,000 per month. This is equivalent to a little over 6.8% of the total transactions that the protocol is replacing, without needing to charge fees to generate it.

It is in this way that the protocol monetizes while allowing for fee-less transactions. This benefits the merchants of microtransactions since they no longer need to pay processing

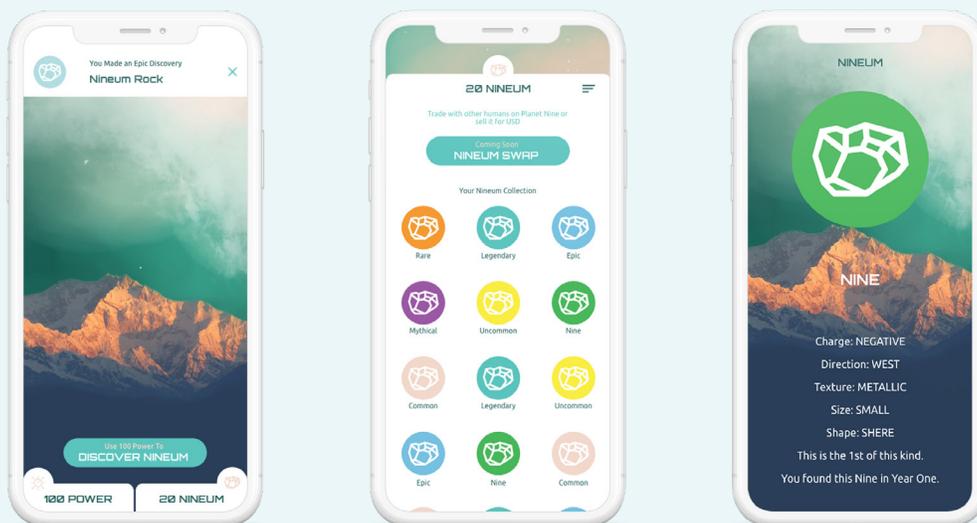
fees for their transactions. This benefits users because they're able to use a resource other than money or their attention to enable microtransactions. Paying into the protocol also benefits users by growing the Total Power Supply and increasing the Global Regeneration Rate, which in turn allows for more transactions to take place. This creates a virtuous cycle where the protocol, users, and merchants all benefit each other by participating in the protocol.

## PLANET NINE PLATFORM

### Mobile App

At the center of the Planet Nine Platform is the Planet Nine mobile app. This app will be available on iOS at launch and will be available on Android once funds are available to develop it on Android. The app will allow a user to create an account, protect their account with email and/or phone number, earn Power, purchase Power and Power hours, discover Nineum, view their Nineum collection, and eventually trade Nineum.

All that it takes to join the Planet Nine Platform is to create a username. Usernames must be unique. Once a username has been created, users are taken into the Planet Nine experience where they can discover Nineum by tapping the "Discover Nineum" button. This action will cost 400 Power and has the user partnering with Planet Nine. This means that the first 200 Power goes to the user finding Nineum, and the second 200 Power goes to Planet Nine finding Nineum. Planet Nine will use this Nineum to fund creating cool experiences for Planet Nine users as well as initiatives that are working to save Planet Earth.

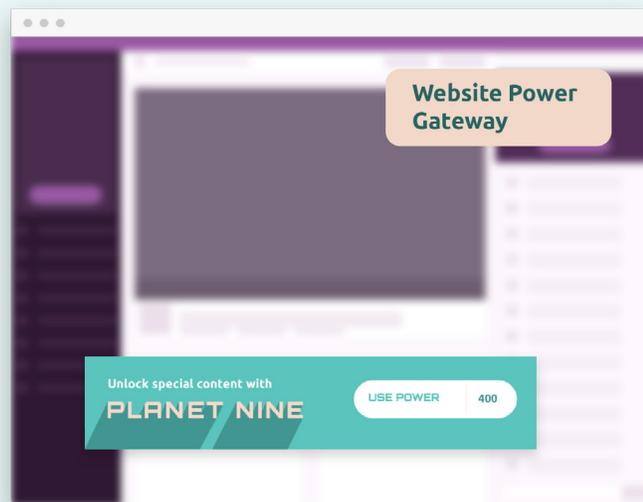


## Power Gateways

Power Gateways are the main way for users to spend Power at a 3rd-party website, game, or stream. There are two different types of gateways. There are one-time use gateways and ongoing gateways. One-time use gateways don't require any account information to be shared and are perfect for one-off Power expenditures. Ongoing gateways will retain account information on behalf of the user and can use that to make Power expenditures. Ongoing gateways don't require the user to interact with the app after establishing a connection so are perfect for Power expenditures when you want to persist the user experience.

In addition to these gateways, Planet Nine also supports BLE gateways. A BLE gateway is perfect for use at a physical location like a store counter. BLE gateways do require the user to use their app to interface with the gateway, but are perfect for when you have a device for the user to interact with.

Planet Nine will provide libraries for both web (JavaScript) and iOS (Swift) at launch with libraries for Node.js and Unity following soon after. These libraries will be open source and the APIs they use will be open so developers can create their own libraries in the languages of their choice rather than waiting for Planet Nine to create them. Planet Nine's goal, however, is to be on every platform possible so official support is coming in time.

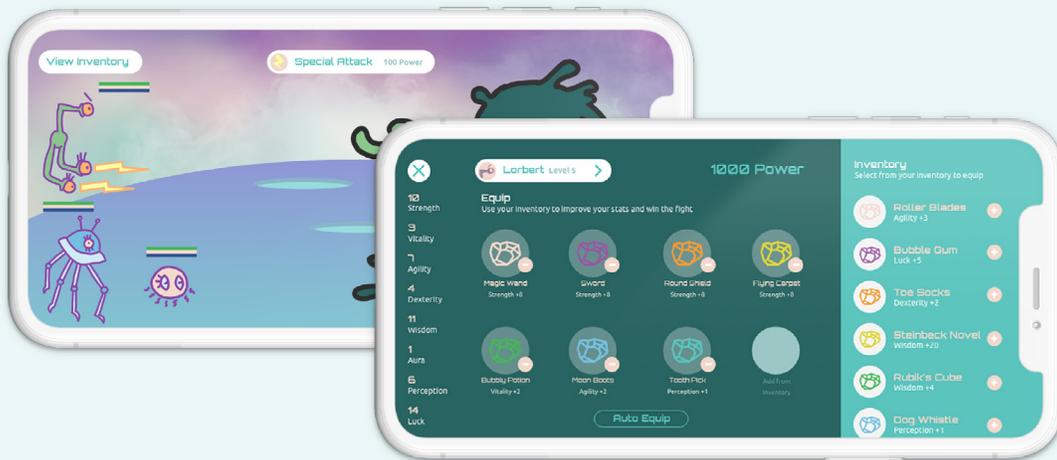


## Developer Resources

In addition to the app, Planet Nine has created [developer resources](#) to help with setting up Power Gateways. At launch there will be a javascript gateway for web implementations, and an iOS cocoapod written in Swift. There will also be instructions on how to create Gateway libraries in other languages and on other platforms. The code for these implementations will all be open sourced so that others can use them and learn from them for creating other Gateways.

## Reference Game

In addition to the developer resources above, a reference game which uses the iOS cocoapod called The Ballad of Lorbert has been developed. It is [open source and available here](#). Apple does not allow unfinished apps in the app store, so The Ballad of Lorbert is only available in code form, but developers should be able to use that code as a jumping off point for building other game experiences.



## How It Comes Together

These three pieces: the mobile app, Power Gateway libraries, and games are the three pillars of the Planet Nine Platform. Users engage with the platform through the Planet Nine app. Content creators create Power Gateways on the platform of their choice using the Power Gateway libraries. And game developers make games that utilize Nineum. The games give value to Nineum which gives value to Power which can then be spent at Power Gateways in order to find Nineum for users and content creators.

For an example let's say a user has 1,200 Power. They spend 400 Power in the app to find Nineum, which also lets Planet Nine find a Nineum. They then go to a friend's blog that is set up to accept Power transactions at a Power Gateway that costs 500 Power. The user spends 500 Power so they get one Nineum and their friend gets one Nineum and a 50/50 chance at another Nineum. The user then goes to a trading card game where pieces of Nineum are cards. There they find that they've received two new cards, the two new pieces of Nineum received from their transactions.

Taking a popular card game like Hearthstone as an example, we can try and predict how valuable a trading card game could make Nineum. In Hearthstone packs of five cards are sold for \$1.99 meaning that the approximate price per card is \$0.40/card. In Hearthstone some cards are rarer than others so while \$0.40/card is what a single pack averages out to, in reality some cards are worth much more than \$0.40 and most cards are worth much less. Still if a card game was developed that was selling packs of five Nineum cards for \$1.99 the \$0.40/piece of Nineum this represents would be some premium over the effective price per Nineum, but since such a premium is possible the price per Nineum would have to be more than \$0.00 giving value to Nineum. This in turn would give value to Power.

Let's say that the effective price of Nineum is \$0.05/Nineum then the Power transactions above would be worth \$0.05 and \$0.075 respectively. So long as \$0.075/user is greater than the ad revenue from a similar engagement for the user's friend then the user's friend is incentivized to use the Planet Nine Platform to monetize their site. And this is another example of the virtuous cycle where users, content creators, and game developers all create value for each other by engaging in the dual-resource protocol through the Planet Nine Platform.

## Universe and Address

The dual-resource protocol sets aside an 8-bit universe and a 32-bit address. These are for future opportunities for the dual-resource protocol. First let's look at address. As the popularity of the protocol grows, the user base will grow large enough to start supporting more than one non-fungible token type. Just as in physical mining, some can mine for gold while others mine for gems, in the digital world once enough users are engaged with the

protocol some can discover Nineum while others can discover some heretofore unknown digital asset. These new digital assets will be added to the platform with a different address. They will be added by Planet Nine in coordination with an interested third party for a yet to be determined fee structure.

If an organization wants to create their own dual-resource protocol they can license the technology from Planet Nine. In this instance the organization will be creating a new “universe” and will mark their tokens as such. Just as with address the fee structure for this is to be determined.

## OUR TEAM

Planet Nine is founded in Portland, Oregon. We are a small but mighty team working quickly to get to build the world of Planet Nine. We are passionate about technology, design, and making Planet Earth sustainable.



**Zach Babb**  
**Chief Executive Officer**

Zach started his career learning Retail Operations Management at Starbucks and Apple before heading back to Reed College to change careers. There he discovered his love of programming and parlayed a startup weekend win into a job at GlobeSherpa where he lead mobile development. In addition to developing killer software, Zach enjoys hiking, brewery hopping, and tinkering with new gadgets and gizmos that appear on the market.



**Alex Peter**  
**Chief Design Officer**

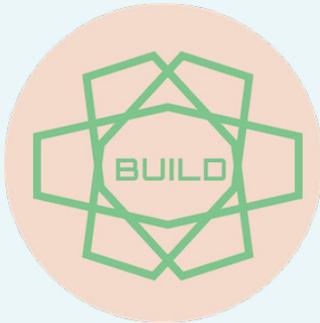
Alex is passionate about creating technology solutions that empower connected, accessible, and sustainable communities. Previously, she was the Director of Product for moovel North America, focusing on the future of urban mobility. At the startups earliest stage, Alex led the design for the company’s brand and product. She enjoys her house plants, dog sitting, going to local shows, and biking around town.



**John Klein**  
**Developer**

John loves working with technology, solving problems, and building things. It’s great being able to do all those things at Planet Nine. John studied Chinese at Reed College and lived in Beijing for a couple years where he worked at a leading Chinese technology company before returning to Portland to focus on software development. Outside of work, he loves to read, travel, and eat and he’ll do just about anything to get outside on a sunny day or up to the mountain when there’s snow.

# Roadmap



## Public Demo

Q1 2019



## Go Live

Q2 2019



## Partnership Program

Q4 2019