

# The Dawn is Coming: PI DAWN-NETWORK (PDN)



White Paper

Building diverse application scenarios based on PI NETWORK

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## FORWARD

As the world becomes more and more digital, cryptocurrencies are becoming a natural trend in cryptocurrency development. PND, the first fork of PI, will facilitate the commercial marketable application scenario of PI NETWORK in everyone's daily life, marking a major step forward in the use of PI cryptocurrency worldwide.

**Our Mission:** To build a platform for diverse applications of cryptocurrency smart contracts with digital capabilities at the core these are both secure and easy to operate, accessible to everyone.

**Our Vision:** To build the world's most inclusive marketplace for digital capability elements based on Pi (the world's most widely used cryptocurrency) and driven by PND's diverse application scenarios.

**Disclaimer:** Because PND's mission is to be as inclusive as possible, we will take this opportunity to introduce PND to PI owners and newcomers to the blockchain, and invite more people to join us in building the PI NETWORK decentralized ecosystem together.

## INTRODUCTION: THE IMPACT OF DIGITISATION ON MONEY

The digital age has had an impact on human society in all walks of life. It not only dramatically increases productivity, but also technology with blockchain at its core has even begun to transform production relations in organisations. Against this backdrop, digital currencies have emerged and developed rapidly, and have even begun to challenge the current system of currency issuance. The impact of digitisation on human money is reflected in three areas: the monetary dimension, the radiation space and the source of value.

### The changing dimensions of money

As human society has evolved from primitive to agricultural and industrial societies, the dimensional form of money has also evolved from multidimensional to three- and two-dimensional. Driven by digitalisation, money completed its historic transformation from a physical object to a string of data, to a one-dimensional substance.

Primitive societies exchanged material things such as skins and shells, but the medium of exchange could not be unified, at which point the dimensions of money were multidimensional. In agricultural societies, the iconic precious metals such as gold, silver or copper began to act as monetary intermediaries, at which point the dimension of money became three-dimensional. With the advent of industrial societies, paper money followed and the dimensionality of money became mainly two-dimensional.

After the 1980s, money became increasingly electronic, with the rapid development of electronic wallets, credit cards, stored memory cards and mobile phone payments. Money essentially became a string of symbols in a memory, and the dimensions of money took on new forms.

And today, digital currencies, represented by Bitcoin, Pi, Libra and legal tender, are beginning to emerge and money is beginning to usher in a one-dimensional era.

## The radiant space of money

Barter in primitive societies was basically confined to a very small tribal area. In the Eastern Zhou or Warring States period, vassal states such as Qin, Zhao and Qi each had their own currency, and circulation was basically confined to the boundaries of the vassal state.

After the industrial society, basically all countries had their own paper money, and cross-border trade brought about the use and circulation of the paper money of the big countries all over the world, and the radiation of the currency widened dramatically.

By the digital age, digital currencies issued by non-sovereign countries are global once they are created, and it is difficult to control its flow from a smuggling perspective, from a gateway perspective, regardless of customs and government border controls. For example, the encrypted, anonymous, decentralised nature of Bitcoin allows it to operate free of the banking network, SWIFT, and can be used by unscrupulous individuals for money laundering, terrorist financing, etc. However, a currency such as Bitcoin, which is free from temporal and spatial restrictions, is detached from sovereign credit, the basis of issuance cannot be guaranteed, the value of the currency cannot be stabilised, it is difficult to create real social wealth and is not suitable as a circulating currency for humanity.

## The source of value of money

The value of money is derived from the 'monetary anchor', which is the basis or reserve of money issuance and serves to support and constrain the size of money issuance.

In the early days of barter, the value of 'things' that served as money, such as furs and shells, was derived from the scarcity of human labour time or material. The widespread use of gold, silver, copper and other financial materials as money during the agrarian and industrial societies was due to the fact that gold, silver and copper were not easy to mine, and the stable nature of these metals made them suitable for use as money, while the natural increase in production was difficult to manipulate and guaranteed a stable value. The currency of the Western countries, led by the United States, was not actually held in reserve in any physical form, but was only issued as a function of national law, hence the term "fiat money". The source of value of the currency became national credit linked to national sovereignty, GDP and fiscal revenues, but the lack of physical reserves and a clear mechanism of restraint led in practice to a serious over-issuance of money.

After 2010, digital currencies based on blockchain technology began to emerge, typically Bitcoin and Facebook's Libra. the former is generated through real "mining", its anchor is the mining "algorithm", which requires mining machines, mining equipment, electricity and other costs. The "value" can be converted into labour time to produce the mining machine, build the mining farm, supply electricity, etc. However, these currencies do not have a fixed issuer, are not backed by assets and are issued according to a specific algorithm. The number of issues is often constant and it is difficult to expand the scale of issues according to the demand of economic development.

The Libra, latter, is anchored to a "basket of currencies", mainly the US dollar, and is essentially similar to the "linked exchange rate system" in Hong Kong. With over 2 billion users worldwide, Libra will have a significant impact on the global financial system and monetary sovereignty, so national regulators are extremely cautious about issuing a stable digital currency like Libra.

## PROBLEM: CURRENT DIGITAL CURRENCY 'ANCHORS' ARE IMPERFECT, LEADING TO A LACK OF APPLICATIONS

In terms of the anchors of digital currencies, the current digital currencies can be broadly divided into three categories: digital currencies anchored by "algorithms", digital currencies anchored by "assets", and digital currencies anchored by "national credit". Digital currencies anchored by "algorithms", digital currencies anchored by "assets" and digital currencies anchored by "national credit". However, none of the three main types of anchors are perfect.

Digital currencies anchored by "algorithms" can only be issued at a fixed size or grow moderately based on smart contract algorithms, but the core of this "algorithm" is actually a trust mechanism that derives from two main things: the robustness of the algorithm and the trust people have in the currency. The core of this 'algorithm' is in fact the trust mechanism, which comes from two things: the robustness of the algorithm and the trust people have in the currency. In practice, both of these are problematic in practice. Digital currencies anchored by 'algorithms' primarily use elliptic curve algorithms, which are the strongest public key cryptosystem available, but their security is still based on the current lack of human computing power. Once computer computing power increases by leaps and bounds, this algorithm will be broken and the basis for issuing digital currencies anchored by "algorithms" will be destroyed. On the other hand, even if the security of the algorithm remains unchanged in the future, Bitcoin's trust base will be artificially weakened in the future as it is not anchored to a "fixed asset" and has its own encryption and anonymity, which can be used to launder money across borders, finance terrorist organisations and avoid taxes.

Some countries and regions are also issuing digital currencies anchored to "assets", such as Ecuador's digital currency, which is anchored to the value of amber beeswax, and Petro, a digital currency issued by the Venezuelan government, whose value is linked to the price of oil. However, such digital currencies issued based on "assets" also face two major problems. On the one hand, the issuance of such currencies is secured by the commodity held by the subject, making it difficult for counterparties to verify the authenticity of the actual assets of the issuer. On the other hand, the value of the anchored 'asset' can fluctuate. In the case of oil, for example, in the event of a war crisis, the price of oil could spike due to changes in supply and demand, resulting in a significant increase

or decrease in the value of the currency. As the price of 'assets' is difficult to stabilise, these currencies are prone to problems similar to bank runs in the event of a panic crisis.

As cryptocurrencies have been abandoned, some private companies and governments have started to issue digital currencies anchored to sovereign currencies. For example, Walmart Group in the US is planning to issue a stable currency that will be pegged to the US dollar, while Japan's UFJ Mitsubishi Financial Group plans to launch the "MUFG coin", which will be pegged to the Japanese yen at a ratio of 1:1.

Currently, digital currencies anchored to fiat currencies are being issued year after year, mostly pegged to the US dollar. However, such stable currencies are expensive to operate and private companies need to provide large amounts of cash and bank deposits as collateral for the issuance of digital currencies. Therefore, the more digital currencies a platform issues, the stronger its willingness to counterfeit real cash or deposits, and the more the platform will face a crisis of confidence if it refuses to accept public scrutiny or if a bad event occurs.

At the same time, some central banks have started to issue digital currencies based on their national currencies, such as the Chinese central bank's digital currency. The Chinese central bank's digital currency acts as an alternative to cash (M0) and its anchor is still the national credit. A digital currency anchored by national credit would in fact face problems such as sovereign currency overdraft.

The current digital currency 'anchors' are not perfect and cannot form a mainstream social consensus, resulting in a lack of applications.

## **SOLUTION: LARGE-SCALE DIGITAL CURRENCY ADOPTION BASED ON DIGITAL CAPABILITIES AS AN ANCHOR**

Having identified these key barriers to adoption, the PDN core team set out to find an anchor that would allow ordinary people to mine (or be rewarded with cryptocurrency by verifying transactions in the distributed transaction record). As a guardian, one of the main challenges of maintaining a distributed transaction record is ensuring that updates to this public record are not fraudulent. While Bitcoin's process of updating the record has been proven (burning energy/money to prove trustworthiness), it is not very user (or planet!) friendly. For Pi, we

have introduced an additional design requirement to use a consensus counting algorithm that is very user friendly and ideally can be mined on PCs and mobile phones.

There are several principles that we believe need to be followed when identifying anchors.

Firstly, the anchor must be something that is in general demand by all humans at the moment and for a long time to come, that exists in the real world and that is closely related to core human needs.

Secondly, the anchor must have a specific value, not some algorithm or national credit.

Thirdly, the anchor does not need to be backed by any centralised system.

Fourthly, this anchor can be increased in line with the efficiency of social production and can continuously meet the money supply.

Fifth, this anchor can become the common pursuit of all mankind and the basis for building a community of human destiny.

In reality, anchors that meet both of these requirements are difficult to find. Both gold, which once acted as an anchor, and national credit, which is now widely used, only partially satisfy the requirements. But a review of history shows that money, at different stages of its development, has often been closely linked to the core means of production of the time.

At the beginning of capitalist development, British coal production accounted for two-thirds of the world's total production, and by the early 20th century, US oil production was approaching 90% of world output. Having had the major pricing power for the energy necessary for social production at the time, the pound and the dollar became successively the hegemonic currencies. Although oil production in the Middle East surpassed that of the United States in the late 1960s, the United States, through agreements with the major oil producing countries, made the dollar the sole denominated settlement currency for oil and the dollar became the nominal anchor for most currencies.

The above summary shows that whoever is able to combine their currency with the most current means of production is often able to establish a leading position in the competition for world currency.

The world economy has now entered a period of transition between old and new dynamics, and the digital economy, as a new driving force and engine for economic recovery, has become a global consensus and a major trend. In recent years, the role of data in economic activities has become increasingly important, and the digital economy has increasingly become a new source of growth for the world economy.

In the digital era, the core means of production are not just oil and coal, which may be replaced in the future by sustainable energy sources – solar, wind and electricity – but the core means of production become a complex made up of a series of core elements of digital production, such as big data, computing equipment and technicians, and on top of this complex digital capabilities such as computing capacity, storage capacity, and communication capacity are formed. Countries with strong digital capabilities can further improve the productive efficiency of their societies, raise their level of economic development and stand out in competition with other countries.

It can therefore be argued that the future digital currency can be anchored to the core production factors of the digital era – digital production capabilities such as computing, storage and communication capabilities, and transaction capabilities based on time (event) driven data, computing devices, technicians, etc. The above can be integrated to form a digital index, anchor the digital currency to this index, and determine the amount of digital currency to be issued by measuring the global or national or regional digital index.

Digital production factors, which are not only needed by all mankind currently and will continue to be needed in the future, but also contain value in themselves, can be issued through the distributed, traceable, and tamper-evident characteristics of the blockchain, without the need for national credit guarantees, and are arguably the most suitable monetary anchor in the digital society of the future.

In conclusion, the shape, generation and anchor of future human money will be further fully practised and developed in the digital age. In developing digital money, it is important to be both bold in one's vision and fully aware of the potential impact it may have on the economy and society. Further, the development of digital currencies to get rid of the long-standing chronic problem of monetary history – monetary over-issuance – can be achieved in the future by anchoring the core production factor of the future digital era – digital capabilities. By anchoring this future means of production common to all mankind, digital

currency will have a good basis for operation, and can also further play a good role in promoting the development of digital economy and digital society, and jointly promote the prosperity and progress of human civilization.

We therefore believe that the best anchor for future digital currencies is the time-based (event-driven) digital production capacity of users, and we are therefore formally launching PDN on the basis of PI.

## Building a PI DAWN-NETWORK network based on PI NETWORK

Why PI NETWORK is so important

PI NETWORK's token is a  $\pi$ -coin using interstellar consensus and an improved federal Byzantine consensus algorithm, based on social connections to enable mobile mining that can be engaged by hundreds of millions of people which consuming no power and taking up little CPU and internet speed. It is a digital currency that costs zero for everyone, which can be held by hundreds of millions of participants and used to pay for everyday expenses. Pi coin has 36 million participants and 13 million daily online users since its birth on March 14, 2019, and it is still growing at a rate of 50,000 per day. Pi coin will produce less as time goes by, and will be halved or stopped at a later stage. It is comparable to early BTC mining and is becoming increasingly rare. Its app has a built-in chat room for the project owner and 43 national chat rooms, and every time the number of active users increases by a factor of 10, the basic rate of mining is halved. When the Pi network reaches a certain number of users (say 10 million or 100 million), the rate will eventually drop to 0. At that point, the reward for the miner will be in the form of a transaction fee rather than through outgoing new coins, as with Bitcoin.

*PI NETWORK will go further than other digital currencies.*

Although Bitcoin has the potential to explode due to its anti-inflationary utility and its alternative value compared to gold, the practical value of storage. Bitcoin could be difficult to liquidate if two things happen. The printing of large amounts of money could lead to a decrease in spending

power per dollar, or there could be a large number of bitcoin miners attempting to exchange bitcoins for goods and services.

*PI NETWORK's traffic will attract numerous investments in the future*

Facebook is a social platform, while PI NETWORK is a social + digital currency platform. Facebook took almost 3 years from its creation to have 12 million users. Whereas PI NETWORK was launched on March 14, 2019, it took just under two years for it to surpass 12 million users. If we compare PI NETWORK to a new "Facebook", I believe many people will consider investing in it, because this is after all the era of traffic, and big traffic and fast traffic are naturally the kings.

*PI NETWORK's influence will continue to grow by leaps and bounds in the future*

Since its inception, PI NETWORK has expanded from US users to global users in just over a year, and its global reach has spread to 175 countries. PayPal, the world's largest international trade payment tool, is only available in over 200 countries and territories. Imagine how big you think PI NETWORK's reach will be if you give it 3 more years.

*Pi to become one of the most valuable global interaction centres*

The accelerating popularity of digitalisation has had such a clear impact on global economic growth that it has seriously affected our work and lives. As foreign exchange becomes unstable in today's climate, you may find that money becomes an insecure asset. Everyone is looking for the safest way to keep their assets, and the continued rise of Bitcoin proves just that. Cryptocurrencies have the characteristics of a secure, decentralised asset, especially the popular and well known ones. The emergence of pandemics has forced countries to accelerate into the digital age, and cryptocurrencies are a product of the digital age that can better connect data interactions between people and things. Complete valuable interactions in any country in the world in seconds to minutes.

Much faster than traditional model cryptocurrencies, Pi has users in many different countries around the world. With the launch of Pi's main network, users can reach tens of millions of people and transactions can be completed in less than 3 seconds. Pi will become one of the most valuable global interaction centres.

*PI NETWORK has a faster transaction speed than Bitcoin.*

In terms of technology in the blockchain space, security first, speed second and convenience third. We can leave security and convenience out of this comparison, as they are the two least required criteria in blockchain, a must for any digital currency. Let's look at speed. According to Bitcoin's arithmetic "mining" feature: transactions are recorded in blocks, and each block takes an average of 10 minutes to generate, and only after 6 blocks have been generated can a transaction be finally confirmed. So, in general, it takes 60 minutes for a transaction to be confirmed in the Bitcoin system, i.e. a successful transfer.

In summary, if PI NETWORK is to go further than other digital currencies; to continue to grow in influence in the future; to become one of the most valuable global interaction centres. As well as having a faster transaction speed than Bitcoin, how high do you think the value of Pi will be in the future? This is the reason we chose to do PI DAWN-NETWORK based on PI NETWORK, to accelerate the marketization of PI NETWORK and the construction of industrialized ecological applications.

The prototype of PI NETWORK's digital productivity anchor

Based on the principles of the choice of anchors for future digital currencies, and based on a comparative analysis with PI NETWORK, we believe that

Principles	PI	PDN
Universality	Based on the attention and time of ordinary people (just one act: daily check-in), and their social network of ordinary people)	The PDN can manage more attention and time of ordinary users, and can apply users' work and study, life time and event trading scenarios to the mining behaviour of the PDN, exchanging unused attention and time

		through behavioural mining.
Value	Now similar to points, no application to give value	The user's mining behaviour itself is the accumulation of knowledge, ability, experience and contacts, through the quantitative change to qualitative change, through the accumulation of the value created per unit of time, through time trading change.
Decentralisation	Decentralised and diversified based on ordinary people and their social networks	Based on the attention management and time trading of ordinary people, to achieve the diversity of people
Money supply (social efficiency gains)	PI is now based on user size as a core weight to determine money supply	PDN is based on the size of the user and the value of the user's transactions per unit of time to determine the scale of money supply
Common values	Current PI is engagement without valid behaviour and without value	Web-based digital production is a necessary tool for development

PI NETWORK has been launched in the market for two years, there have been ten million consensus miners, PI NETWORK's innovative technology is a qualitative leap in the development of digital currency, is a new species of blockchain evolution, the process of evolution of new species requires more company and patience, Pi makes crypto mining easier, and PDN will make PI more valuable, as PI's fork coin, PDN will continue to enrich and improve on the application scenarios, giving more value to PI NETWORK, and allowing more miners to embrace hope.

## Introduction of PI Consensus Algorithm

Pi's consensus algorithm is built on top of the SCP, which has been officially proven and is currently implemented within the Stellar Network. Unlike the Stellar Network, which consists primarily of companies and organisations (such as IBM) as nodes, Pi intends to allow individual devices to contribute and be rewarded at the protocol level, including mobile phones, laptops and computers. Below is a description of how Pi will apply SCP to personal mining.

As a Pi miner, Pi users can play four roles. Namely.

**Pioneer.** a user of the Pi mobile app who, on a daily basis, simply confirms that they are not a "bot". The user verifies their presence every time they log into the app. They can also open the application to request a transaction (e.g. to pay another Pioneer in Pi)

**Contributors:** A user of the Pi mobile app contributes by providing a list of pioneers he or she knows and trusts. In total, a Pi contributor will build a global trust graph.

**Ambassador.** a user of the Pi mobile app who brings other users into the Pi network.

**Node.** A user who is a pioneer, a contributor using the Pi mobile application and also runs the Pi node software on their desktop or laptop. the Pi node software is the software that runs the core SCP algorithm and takes into account the trust graph information provided by the contributor.

Users can have more than one of these roles. All roles are required, so all roles are rewarded with a newly created Pi every day as long as they

participate and contribute on that day. In a loose definition of a "miner", as a user who is rewarded with new currency received as a contribution, all four roles are considered to be Pi miners. We define "mining" more broadly than its traditional meaning as equivalent to the execution of a proof-of-work consensus algorithm in Bitcoin or Ether.

### *Mobile application users*

When a Pioneer needs confirmation that a given transaction has been executed (for example, that they have received  $\pi$ ), they open the mobile application. At this point, the mobile application connects to one or more Nodes to query whether the transaction has been recorded in the ledger and to obtain the latest block number and hash value for that block. If the Pioneer is also running a Node, then the mobile application will connect to the Pioneer's own node. If the Pioneer is not running a Node, then the application will connect to multiple Nodes and cross check this information. Pioneers can choose which nodes they want their applications to connect to. But to keep it simple for most users, the application should have a reasonable default set of nodes, such as some of the nodes closest to the user based on the trust graph, and a random selection of nodes with high pagerank. We invite you to provide feedback on how you choose the default set of nodes for Mobile Pioneer.

### *Mining rewards*

One of the superior features of the SCP algorithm is that it is more general than the blockchain. It coordinates consistency across the distributed node system. This means that the same core algorithm is not only used to record new transactions in new blocks every few seconds, but can also be used to run more complex calculations on a periodic basis. For example, the Stellar network uses it once a week to calculate the expansion on the Stellar network and to distribute the newly minted tokens proportionally to all Stellar coin holders (Stellar coins are called lumens). Similarly, the Pi network uses SCP once a day to calculate the distribution of new Pi coins owned by all Pi miners (pioneers, contributors, ambassadors, nodes). In other words, Pi coin mining rewards are calculated only once a day, not at each block ring chain block.

In contrast, Bitcoin distributes mining rewards on each block and gives all rewards to those miners who are lucky enough to solve computationally intensive random tasks. This makes it extremely unlikely that any given

miner will be rewarded. To solve this problem, Bitcoin miners are organised in centralised mining pools, which all help to increase processing power, increase the likelihood of receiving rewards, and ultimately share these rewards proportionally. Not only are mining pools a point of centralisation, but their operators are cut back, reducing the amount paid to individual miners. In Pi, there is no need to mine resources, as each contributor receives a daily allocation of newly assigned Pi coins.

### *Transaction fees*

Similar to Bitcoin transactions, fees are optional in the Pi network. Each block has a limit on the number of transactions contained within it. Transactions tend to be free when there is no congestion. However, if there are more transactions, nodes are sorted in order of charge, with the transaction with the highest charge at the top, and only the highest transaction to be included in the generated block is selected. This makes it an open market. Implementation: Fees are shared between nodes once a day on a pro rata basis. In each block, the fees for each transaction are transferred to a temporary wallet, which at the end of the day is distributed to the active miners of the day. This wallet has an unknown private key. With the unanimous agreement of all nodes, the protocol itself forces transactions in and out of this wallet, just as the unanimous agreement is minting new Pi coins every day.

## The PDN consensus algorithm's adaptation of PI consensus

The PDN consensus algorithm is built on top of PI NETWORK, which has been formally proven and has been running for two years now. Unlike mining, which is primarily done by individuals using time sign-ups, PDN intends to allow individuals to contribute and be rewarded at the protocol level with attention management and time transactions on their personal devices, while receiving attention and time transactions to form The PDN intends to allow individuals to contribute and be rewarded at the protocol level through attention management and time trading on their personal devices, including mobile phones, laptops and computers, while gaining physical rights to the digital content created by the attention and time exchange.

Attention management (relationships, own growth, health management, learning (awareness, knowledge, new trends), focus on the present moment (learning), etc.), time trading (retail, wholesale, buying and selling time, etc.), digital rights (physical health data, consumer assets, social assets, content assets, etc.) and physical rights (assets created by securitising the assets of an object).

The following is an introduction to how PDN applies PI to personal mining

As PDN miners, PDN users can play the same four roles.

Namely.

**Pioneer.** users of the PDN mobile application, each day, simply confirm that they are not "bots". The user's presence is verified each time they log into the app. They can also open the app to request transactions (e. g. to pay another Pioneer in Pi) and while fulfilling the above functions, Pioneers can open the app to do time and attention operations, can price their time and request time transactions and select matches.

**Contributors.** a user of the PDN mobile app contributes by providing a list of Pioneers that he or she knows and trusts. In summary, PDN contributors will construct a global trust graph. After completing the trust map, collaboration is completed by matching based on attention management and time transactions to create greater value.

**Ambassador.** a user of the PDN mobile app who brings other users into the PDN collaboration network.

**Mine owner.** As a user of Pioneer, you can build your own PDN mine, and Pioneer gains more revenue by running the mine. The mine is an important part of the PDN network, a proof of value for contributors, and will also play an important role in the decentralised ecosystem.

Users can play multiple roles as described above. All roles are necessary, so all roles will receive new PDN coins on a daily basis, as long as they participate and contribute on that day. In the loose definition of "miner", a "miner" is a user who receives new coins as a reward for contributing, and all four roles are considered PDN miners. Our definition of "mining"

is broader than the traditional sense of “performing proof-of-work consistency algorithms”, as in Bitcoin or Ethernet.

### Mining rewards

One of the superior features of the PI algorithm is that it is more general than blockchain. It coordinates consistency across a distributed system of nodes. This means that the same core algorithm is not only used to record new transactions in new blocks every few seconds, but can also be used to run more complex calculations periodically. For example, the Stellar Network uses it once a week to calculate the expansion on the Stellar Network and to distribute the newly minted tokens proportionally to all Stellar Coin holders (Stellar Coins are called Lumens). Similarly, the PDN network uses PDN once a day to calculate the distribution of new PDN coins owned by all PDN miners (pioneers, contributors, ambassadors, mine owners). In other words, PDN coin mining rewards are calculated only once a day, not at each block ring chain block.

In contrast, Bitcoin distributes mining rewards on each block and gives all rewards to those miners who are lucky enough to solve computationally intensive random tasks. This makes it extremely unlikely that any given miner will be rewarded. To solve this problem, Bitcoin miners are organised in centralised mining pools, which all help to increase processing power, increase the likelihood of receiving rewards, and ultimately share these rewards proportionally. Not only are mining pools a point of centralisation, but their operators are cut back, reducing the amount paid to individual miners. In PDN, there is no need to mine resources, as each contributor receives a daily allocation of newly assigned PDN coins.

### Transaction fees

Similar to Bitcoin transactions, fees are optional in the PDN network. Each block has a limit on the number of transactions contained within it. When there is no backlog of transactions, transactions tend to be free. However, if there are more transactions, the nodes are sorted in order of charge, with the transaction with the highest charge at the top, and only the highest transaction to be included in the generated block is selected. This makes it an open market. Implementation:Fees are shared

between nodes once a day on a pro rata basis. In each block, the fees for each transaction are transferred to a temporary wallet, which at the end of the day is distributed to the active miners of the day. This wallet has an unknown private key. With the unanimous agreement of all nodes, the protocol itself forces transactions in and out of this wallet, just as unanimous agreement is minting new PDN coins every day.

## THE PDN ECONOMIC MODEL: BALANCING SCARCITY AND ACCESS

### Introduction to the PI Economic Model

#### PI Economic Model Design Principles

The Pi system, on the other hand, tries to find a balance between creating a sense of scarcity for Pi coins while ensuring that large amounts of Pi coins do not accumulate in the hands of a very small number of people. We want to ensure that our users receive more Pi coins when they contribute to the network. The goal is to build an economic model that is complex enough to achieve and balance these priorities, while remaining intuitive enough for people to use.

The design of Pi's economic model requires:

- **Simplicity:** to create an intuitive and transparent model
- **Equitable distribution:** make Pi accessible to a sufficient number of people in the world
- **Scarcity:** create a sense of scarcity to maintain the price of Pi without devaluing it over time
- **Elite income:** reward contributions that build and sustain the network

#### Pi-Token Supply

##### *Token Issuance Policy*

1. Maximum supply =  $M + R + D$

a.  $M$  = total mining rewards

b.  $R$  = Total Referral Reward

c.  $D = \text{Total Developer Reward}$

$M = \int f(P) dx$  where  $f$  is a logarithmic descent function

$P = \text{number of people (e.g., first person to participate, second person to participate, etc.)}$

$R = r * M$

$r = \text{referral rate (referrer and referee total 50% or 25%)}$

$D = t * (M + R)$

$t = \text{developer incentive rate (25%)}$

*M - Mining supply (based on a fixed mining supply minted per person)*

In contrast to Bitcoin, which provides a fixed supply of coins for the entire global population, Pi creates a fixed supply of Pi for each person who joins the network (the first 100 million participants). In other words, for each person who joins the Pi network, the number of Pi's is fixed. This supply is then released over the lifetime of the member, depending on the member's level of participation and contribution to the security of the network. The supply is released using an exponentially decreasing function similar to that of Bitcoin over the life cycle of the member.

*R - Number of referrals (based on a fixed referral reward per person minted and shared between black and white referrers and referrals)*

In order for a currency to have value, it must be widely distributed. To incentivise this goal, the protocol also generates a fixed amount of Pi as a referral bonus for both referrer and referrer (or for both parents and offspring). All parties are actively mining. Both the referrer and the referrer have access to the pool in order to avoid the exploitative model where the referrer is able to "prey" on their referrer. Referral bonuses can be used as network level rewards to grow the Pi network, while

also encouraging active participation between members to ensure network security.

*D - Developer Rewards Provision (additional Pi created to support ongoing development)*

Pi will fund ongoing development through a 'Developer Reward' that is minted alongside each coin minted for mining and referrals. Traditionally, cryptocurrency protocols generate a fixed amount of supply, which is immediately put into the treasury. Since the total supply of Pi depends on the number of members in the network, Pi is progressively rewarded by developers as the network expands. the progressive refinement of Pi's developer rewards is intended to align the incentives of Pi's contributors with the overall health of the network.

*f is a logarithmically decreasing function - early members earn more*

While Pi tries to avoid extreme concentrations of wealth, the network also tries to reward earlier members and their contributions with a larger proportion of Pi. When networks like Pi are set up at the beginning, they tend to offer lower utility to participants. For example, suppose you own the world's first telephone. This would be a great technological innovation, but not very useful. However, as more and more people buy phones, each phone holder will gain more utility from the network. To reward early entry into the network, Pi's personal mining rewards and referral rewards decrease as the number of people in the network decreases. In other words, a certain number of Pi is reserved for each 'slot' in the Pi network.

### Safety Circles

A Circle of Security is a circle of trust created by each Pi member, consisting of 3-5 people they trust. The security circles of each Pi member are aggregated to build a "global trust graph" to protect the currency from fraudulent transactions executed by bad actors. Unlike Bitcoin or other cryptocurrencies that use energy consumption as proof-of-work to protect their ledger, the Pi protects its ledger by ensuring that its members are trustworthy to each other. Pi contributors identify and

guarantee 3–5 other Pi members that they trust by creating a security circle. The security circle should be made up of people you trust and whom you trust not to perform fraudulent transactions. An overlay of the network's security circles can form a global trust graph for determining who can be trusted to perform transactions on the Pi's ledger.

## PDN's economic model at PI implements the following iterations

Arithmetic power

### *Base Arithmetic*

All miners registering with PDN and completing KYC certification are entitled to a base arithmetic of 0.18 PDN/h.

### *Safety Circle Arithmetic*

After some thought, we have refined and iterated on the safety circle rules. Preachers with  $\geq 5$  direct pushes lighting up the miner per day will automatically activate the safety circle, doubling the preacher's base arithmetic for that day.

### *Mining Power*

Invite others to join the PDN network using the invitation code to generate your own mine count revenue.

A miner receives a 25% increase in arithmetic power for Level 1 miners.

10% increase in arithmetic power for Tier 2 miners.

All lower level miners can contribute to the farm for 45 days from the date they start mining, after 45 days, the farm's count gains will be removed.

More revenue can be gained by working hard on the mine.

### *Lucky Mining Power*

If you invite new users to join the PDN network and start mining for 3 consecutive days, you will receive one lucky mine. A one-time token of 2~20 PDN can be earned through a lucky draw.

### *PI users divide the reward*

As a fork of PI, we offer PDN early miner benefits to PI miners. All PI miners submit the invitation code and account screenshot, and after passing the audit, the first 1 million people will share 50 million PDN together, while stocks last.

## PRACTICALITY: BUILDING A DIGITAL COMPETENCE MARKETPLACE

### Innovative attention markets based on customer goals

Attention, the most valuable asset you have! All your value-creating activities will be exchanged for your attention. In an era of scarcity of attention, if you don't value it, someone will "value it for you", and if you don't take care of your attention, it will be harvested by others at any time. Ultimately, all of your output of value will come from the exchange of your attention, so the difference in wealth between people is determined by how they allocate their attention on a daily basis. Failure to manage your attention effectively can result in more than just giving away your most valuable asset to be harvested and exploited by others, and may even lead to more serious consequences.

We are building a marketplace of attention based on customer goals and innovation. Through the marketplace of attention, we can achieve progress and wealth appreciation for our users through attention pricing, while generating real consumption scenarios through the attention economy and providing clearer value creation opportunities for others.

So where should we spend our 'attention'?

1 **Relationships, especially intimate relationships:** building your network can improve your ability to mobilise resources, as many opportunities nowadays are often not seized by one person, but require teamwork and resource support. You need to consciously "invest" your attention in these relationships in your daily life; there is also intimacy, if you spend all your attention on external work and little on family and intimacy, then the deterioration of intimacy is almost inevitable, and the destruction of intimacy will affect all your other areas can be almost devastatingly hard hit!

1 **New trends:** the power of trends is, in most cases, far greater than the power of the individual. The purpose of following new trends is not necessarily to find new opportunities, but to not be a frog in a well. Avoid finding an opportunity that looks like an "opportunity" one day and then throwing yourself into it, not knowing that others have already done it and declared it a failure; or that the opportunity you see is in fact already behind; or that the opportunity you see is in fact already involved in many people, and you are just one of many who are following the crowd. If all you have is a passion for it, and you lack the necessary professionalism and resources to support it (such as the recent hot blockchain), then there is little chance of ending up as anything other than cannon fodder.

1 **Focus on the present:** focus on what you do or what you can do to generate value .... This goes without saying

1 **Focus on your health:** your body is the essence of the revolution.

1 **Your own growth:** this is the most important point: you should spend all your remaining attention on "your own growth"! Why should you spend the most attention on your own growth? Shouldn't it be on the work of the moment and on the things that are productive? The effect of human attention is different and has a high or low energy density. There is an order of magnitude difference between your focus on the "new energy vehicle" industry and the impact of a successful person's focus on the "new energy vehicle" industry. I often hear the phrase: "A crossover is like a mountain", meaning that it is a very difficult thing to do, but in this day and age we often hear of "crossover robberies" and "crossover ventures". "Why? Has the gap between industries become smaller now? No. What do these successful crossover robberies and crossover ventures have in common? They are all people who are "very powerful" in their own right.

Their experience, ability, knowledge, accumulated capital, resources and contacts can all add to their attention. He only has 24 hours in a day, but the energy generated by the same minute of attention is much greater. And so their cross-border success rate becomes much higher than that of ordinary people!

So how can you become a very energetic person too? By projecting your attention on your own growth, you will increase your energy density. For example, read a book for an hour every day to enrich your knowledge; for example, write a daily diary to summarise the day's gains and losses; for example, write a daily share to spit out what you have learnt and help others while consolidating your own learning... At first, this approach may have a very small and insignificant effect, but the increase in energy density of attention is in line with the qualities of exponential growth. Each time you invest, you bring about a small percentage increase, albeit a small percentage, even if it is only 1% each time, but if you persist for 1 year, how many times will your energy density increase? 37.8 times! That's right, just one more hour of reading every day, just a little bit of progress every day, even if it's only 1%, and after a year, you're 38 times more powerful than your previous self! So in the end, the difference between people is not just a few times the difference we usually feel, but actually orders of magnitude, hundreds if not tens of thousands of times the difference!

There is nothing worse than someone who is better than you and who works harder than you! Spend as much attention as you can on self-growth and you will get the highest ratio of input to output, and this is probably the most important piece of advice you will ever hear in your life.

## A decentralised financial marketplace based on digital capabilities

PDN builds the digital capability of users based on PI, so the core application of PDN is to build a digital capability factor marketplace, and decentralised finance is the core section of the digital factor marketplace and the core application of the platform.

## What is DeFi

DeFi is a new financial services industry, it is a new financial services network made up of many financial services robots.

All DeFi protocols are essentially providing a financial service, that is to say, a financial service robot to provide financial services, analogous to the traditional world, a bank to provide you with lending services, or a financial management company to help you manage your money, or a fund company to help you make investments, etc.. These financial bots are in fact the same as financial service companies in the traditional world, except that they are automated, operate automatically and are completely decentralised and made up of code.

So, as an ordinary user, we play DeFi and we enter the DeFi world, it's the same as coming into a room with a lot of bots. If we want to use a certain financial service, including lending, trading or derivatives, etc., we walk up to one of the bots to use its financial service, and the marketplace formed by those bots is called DeFi.

## DeFi's key metrics

**The first is TVL.** everyone talks about TVL, that is, what is the approximate total value of each DeFi protocol lock-in? The higher the better.

**Secondly, Dex volume.** The higher the Dex volume, the better. The higher the Dex volume, the more frequent DeFi transactions are happening and the more heated the hype.

**Thirdly, PDN active addresses and average fees.** The number of active addresses represents the number of DeFi users, and in the long run, the higher the better. What about the handling fee, the lower the better. There are many APPs on Android, and Ethernet can be compared to Android, and DeFi products are APPs. When users use APPs, they seldom hear of Android charging them, and if they are charged such high fees, they will certainly not want to use the APP anymore. So in the long run, the lower the fee, the better.

**Fourthly, the ratio between the market value of DeFi and the market value of PDN.** as an infrastructure, the market value of PDN can be very high, but when it comes to the ratio between it and the market value of DeFi, the lower the market value of Ether should be, the better. very high, because it is an infrastructure. So the higher the ratio of DeFi market cap to Ether market cap, the more mature this market becomes.

The various sub-segments of the DeFi industry

**First, wallets.** When you walk into the DeFi world to play with finance, you definitely need assets, and wallets are here to hold assets, so wallets are a must. According to studio data, the number of wallets with more than one ETH asset on ethereum is already 1.06 million. In other words, there are roughly 1.06 million wallets in the market, all of which are loaded with at least more than one Ether.

**Secondly, asset management tools.** We do a lot of transfers, or mining, through wallets. In this case, it becomes difficult to keep track of the details of the wallets, and the history. Asset management tools (also called Kanban) are dedicated to providing wallet scanning services. The asset management tool can also be thought of as a bot, where you walk up to the bot with your wallet and hand it to the bot. The bot will then perform a scan, after which it will show you exactly what your wallet has done, including total assets, how much debt it has, roughly what it has mined, what the yield is, and all this information will be provided to you.

The three main asset management tools are Debank, Zerion and Zapper, with an average daily UV of around 250,000, which translates into roughly 250,000 people per day walking up to these bots and asking to scan their wallets and check their status. It also reflects the fact that the current user size is probably in the hundreds of thousands.

**Third, mortgage lending.**

Take Compound, a financial services agreement that provides collateralized lending, which we call the bot Little C. Little C can provide collateralized lending services to Little A. The lender, Xiaoming, has bitcoins in his possession. Suppose one bitcoin is worth \$10,000 and Xiaoming thinks it will go up to \$100,000, but Xiaoming is short of money now, what can he do? Instead of selling the bitcoins, Xiaoming can lend

them as collateral to the Little C robot and get another loan, which could be \$6,000 or \$5,000.

Where does the \$5,000 or \$6,000 come from? From Angel, the gold owner, who has spare cash on hand. Little C is a robot, which is completely transparent and open, decentralised. The robot, Little C, tells Angel that you can be absolutely safe by putting the money with me. If Little A doesn't want to pay back the money, I'll sell his bitcoins and let you get that money back. By doing this, Angel becomes comfortable and willing to give his idle funds to Compound.

**Fourth, decentralised exchanges.** Basically trading is at the heart of the whole hype market. Recently, DEX has had an exponential rise, with trading volumes of up to \$1 billion per day. Basically everyone who is going to liquidate their money after making it has to do so through a decentralised exchange. For example, we now have a certain asset in hand, and after giving it to the DEX robot, the DEX robot will automatically return another asset, which completes a transaction service.

**Fifthly, aggregated returns.** This type of robot is very special. Generally speaking, there are a lot of mining opportunities in the market, which is also an opportunity for people to manage their money and make money, at this time, a robot will come forward and say, "I am specialized in helping you to do money-making business, as long as you give me your money, I will go to the market to find money-making opportunities and help you to make money. Such a robot is doing asset management, or providing financial services for money management, and is quite an interesting category, and the very recent YFI is in this category. Currently, across the market, these types of robots are helping users manage around \$1.5 billion of money.

**Sixth, derivatives.** More complex and very diverse, including futures, options, leverage, and insurance can also fall into this category. The number one player in derivatives is synthetic, for example. synthetic does derivatives, and users can go long on gold, or short on gold, or short on the Australian dollar, which is something synthetic can provide directly.

**Seventh, decentralised insurance.** The bots in the blockchain world are decentrally governed, meaning that there is no clear attribution to whom they belong. In this case, if a bot fails, whose responsibility should we look for? What should be done? Who is responsible for the damage? In

this case, there is a need for insurance bots, which are specifically meant to insure other bots.

**Eighth, asset migration and creation.** This type of bot is rather unique in that DeFi is based on the public chain and DeFi is currently the most prosperous on Ether, but not all the assets are on Ether. So, some bots are dedicated to finding ways to move assets from elsewhere to Ether. For example, Ether and Bitcoin are two public chains that don't connect to each other. In this case, these bots will specifically move bitcoins from the bitcoin public chain to ethereum. When they do, they form WBTC, renBTC and so on.

**Ninth, DAO.** these bots are also very special in that the bots in the blockchain world are decentralised and openly transparent and automatically executed. What should be done to upgrade and maintain these bots? How do you ensure the decentralisation of the bots?

DAO bots are bots that help form a decentralised governance relationship between these people and the bots.

**Tenth, the prophecy machine.**

A bot that specialises in providing an asset price. For example, when the small-c bot just cited receives a bitcoin, it needs to know exactly how much a bitcoin is worth. Otherwise, there is no way to calculate how much money should be given to Xiao Ming for a loan. At such a time, the prophecy machine bot would run up to little c, enter a price, and tell the little c bot that the bitcoin is now worth \$10,000.

**Eleventh, industry data analysis tools.**

Etherscan is the data analysis platform built specifically for Etherscan, and learning about the bots that DeFi needs to deal with on a regular basis, which is the enquiry desk. At the enquiry desk, a lot of information is available, including passes, such as a certain type of pass, how much it costs, how much it is in total, on which decentralised exchange it can be traded, etc.

## Time-based (event-driven) decentralised governance

The PI DAWN-NETWORK (PDN) network is an adaptive, self-organising and multi-layered decentralised digital capacity building ecosystem based on individual development driving team development, and in driving

ecological development. Each individual and organisation will do personalised governance around attention allocation, time allocation, asset allocation and processing, wealth allocation, and achieve greater social and economic value by building core competencies based on market scarcity. This includes the building of personal brands, personal products & services, personal business models, collaboration, team building and other services, as well as the trading of time, digital rights and material rights.

## GOVERNANCE: A CRYPTOCURRENCY FOR CROWDSOURCING AND CROWDSOURCING

In an article questioning the merits of chain governance, VladZamfir, one of Ethereum's core developers, argues that blockchain governance "is not an abstract design problem. It's a practical social problem." One of Vlad's main points is that it is difficult to design governance systems "a priori" or before looking at the particular challenges that arise from a specific political system. A historical precedent is the founding of the United States. The first American experiment in democracy, ---- the Articles of Confederation, ended in failure after eight years of experimentation. The founding fathers of the United States were then able to learn the lessons of the Articles of Confederation and create a constitution, which was an even more successful experiment.

In order to build a lasting model of governance, PDN will implement a two-phase plan.

### Interim governance model (<5M members)

PDN will operate under an interim governance model until the network reaches a critical mass of 5M members. This model will be most similar to the "off-chain" governance model currently used by protocols such as Bitcoin and Ether, and the core team of the PDN will play an important role in guiding the development of the protocol. However, the PDN core team will still rely heavily on community input. the PDN core team has been soliciting community input from the PDN mobile app itself and interacting with PDNoneers. the PDN accepts criticism and suggestions from the community and this is done through the PDN login page, the FAQ and the open comment feature of the whitepaper. Whenever people view these materials on PDN's website, they can submit comments in a specific section

there to ask questions and make suggestions. In addition, the core PDN team will be developing more formal governance mechanisms. One potential system of governance is mobile democracy. In a mobile democracy, each pioneer could vote directly on an issue or delegate their vote to other members of the network. Mobile democracy would allow the PDN community to have a broad and effective membership.

## PDN's "Constitutional Convention" (> 5M members)

Upon reaching 5M members, an interim committee will be formed based on previous contributions to the PDN network. This committee will be responsible for seeking advice and making recommendations to the wider community. It will also organise a series of online and offline dialogues where PDN members will be able to weigh up the long-term composition of the PDN. Given the PDN's global user base, the PDN network will implement these engagements in multiple locations around the world to ensure accessibility. In addition to hosting live meetings, PDN will use its mobile app as a platform to allow PDN members to participate in the process remotely. Whether face-to-face or online, PDN's community members will have the ability to participate in the development of PDN's long-term governance structure.

The mobile application is used as a platform to allow PDN members to participate in the process remotely. Whether face-to-face or online, PDN's community members are empowered to participate in the development of PDN's long-term governance structure.

## ROADMAP / DEPLOYMENT PLAN

Phase 1 - Design, distribute, and trust the graph bootstrapping process.

During this phase, improvements in user experience and behaviour are feasible and relatively easy compared to the stabilisation phase of the main network. once the PDN network is launched all coin mining users will migrate to the living network. In other words, during the phase all block mining is decentralised in the hands of each coin holder, during this phase PDN coins are not listed on exchanges and any trading is not feasible.

## Stage 2 - Ethernet based network

At the right time, PDN will be deployed on the Ethernet network. This is a transitional phase before PI launches the main network and PDN will run as an ERC20 token, when PI NETWORK is ready, PDN will migrate to the next phase.

## Phase 3 - Fork coin based on PI Main Network

After the PI Main Network is operational, the PDN completes its migration from ERC20 tokens to the PI Main Network and the community begins formal operations. When the community considers the PI NETWORK network to be stable and ready for full operation, the PDN application software will begin to start deployment. Thereafter, the Phase 1 distribution system and the PDN network simulator will be shut down and the system will operate independently forever. Future updates to the protocol will be provided by the PDN developer community and the core PDN team and will be proposed by the committee. It will be fully distributed. Fake users or duplicate user balances will be removed. At this stage, PDN will be landed on exchanges and traded with other currencies.