NERVES
NEURONET OF THINGS

THE INTEGRATED BLOCKCHAIN OF BLOCKCHAINS

WHITEPAPER

NEURONET — OF — THINGS

CONTENT

BACKGROUND

The Blockchain has emerged as the most disruptive technology of the last decade. Its range of uses is mind-boggling. How will this help us? Well, this could be a very popular alternative to traditional banking. Instead of having institutions such as banks doing the verification and keeping the record of the transaction, you can use the blockchain, thus eliminating the middleman (in this example the banks). This method of banking can definitely make it easier for individuals and companies to make transactions, since it is very time-efficient and money-efficient

In another example where the use of blockchain can be very practical- Imagine that there is a dispute over an inheritance of $50,000 between two siblings (ex. A brother and a sister). This is money that they inherited from their father. They are publicly arguing over the matter in institutions such as the state court, with lawyers and attorneys doing the business for them. Well, there will be no need for middlemen such as lawyers for these siblings if they are users of the blockchain.

In the blockchain, there will be a date and time of a certain information stating who inherited the money and when it happened (for example the sister).
The dispute is settled, and there is no need for middlemen doing the job for individuals. Do you see the basic goal here? This means less time, money and effort is spent, and the blockchain is helping to simplify the world and make it more practical.

— This could well be one of the newest fastest-growing technologies that could be revolutionary.

UNDERSTANDING THE BLOCKCHAIN

Blockchain is a public electronic ledger that is actively being created from 2008. Essentially, the blockchain is a system of data where information is stored in a network backed up by a server. Each information is called a block, and similar information is stored on the same "chain". Thus, this is where the name blockchain derives from.

Originally blockchain was intended to be used as the technology that will power Bitcoin, but since its launch in 2008, blockchain is starting to be used for almost every single type of data. Many technologies such as cryptocurrencies (Bitcoin, Ethereum etc.) rely on the technology of blockchain.

The information and data stored on the blockchain can be openly shared among the users of it. This electronic ledger creates an unchangeable record of many different types of information, with each information being time-stamped and directly linked to the previous ones in the chain.

To simplify things, the blockchain is based on technology where data can be stored globally on many different servers. Anyone in this network can access all of the data and the information stored on the servers. One of the main benefits of the blockchain is that it is impossible for one person or company to gain the full control of all of the data in order to abuse the information entered.

This system works in a way that it is impossible to erase or destroy the data once it has entered the system. For example, the blockchain can be used to keep track of transactions. Once a transaction has been made, the transaction itself enters the data system with the date and time it has happened. This block (information) has now entered the system, and thus it can never be erased or modified. Only another block can come after it with different data, as well as a different date and time.

Blockchain is destined to change the world as well as the technology worldwide. The adoption of this system is expected to be relatively slow and steady, with large companies being first in line as users.

What other industries could benefit from using blockchain? Many different types of business in the areas of shipping, healthcare, energy and technology could well benefit from the use of blockchain.

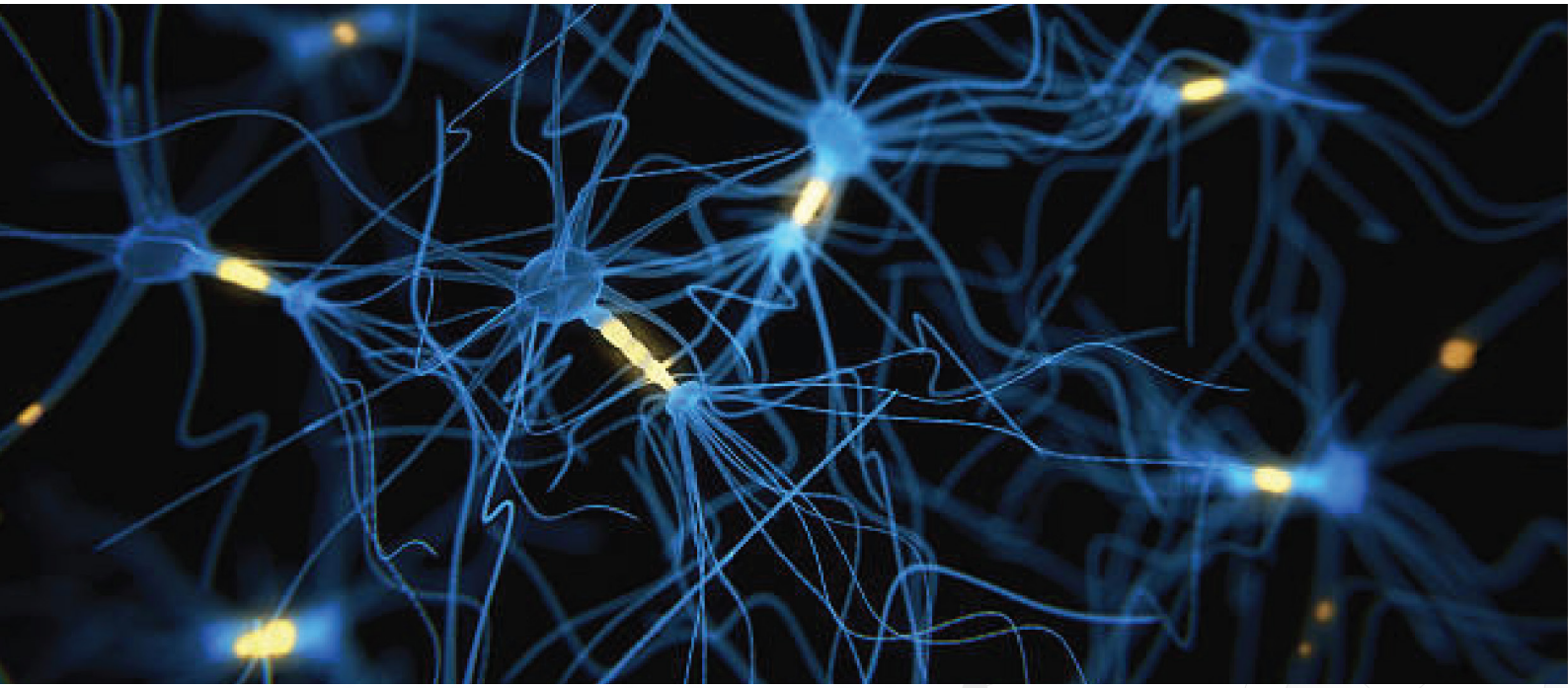
In the healthcare industry, people would be able to see their healthcare records in real time without the use of other institutions. Many people will benefit by having access to their medical records in order to control their own health. This could be done by keeping records of entered data, such as blood sugar levels and cholesterol levels.

Also, it is important to state that blockchains can be divided into two basic categories: public and private blockchains.

Public blockchains allow anyone to see and send transactions as long as they are connected to the server. In public blockchains, all of the blocks (information) can be easily accessed by anyone as long as they are a member of the system.

To the contrary, private blockchains are restricted and not many individuals can access them. This means that the information and transactions that are stored in the chain of blocks is private, and they cannot be accessed by every single individual connected to the network. For example, private blockchains can be practically used between individual companies and organizations wanting to send information and transactions among themselves. No one else can access this private blockchain since it is made private.

— This could well be a way of communication between similar entities wanting to ensure their privacy without outside interference.



PROBLEMS WITH CURRENT BLOCKCHAINS

Many people think that blockchain will be the technology that is poised to change the world in many ways. However, as much as blockchain could change the world for the better, it can also change it for the worse.

There are many issues with the current situation of blockchain.

» A certain price must be paid for blockchain to continue working the way it does currently.

» The blockchain system runs on a large amount of energy. A very large quantity of computing power is used for blockchain to work in the way it works now. In a recent study it was concluded that Bitcoin used as much computing power as almost 160 of the world's nations used to run their computer systems.

» The reason behind this is the complex system of algorithms and other processes for this chain to run. It is important to state that the Bitcoin blockchain comes with a very large market itself, with the current market capacity costing around $170 billion. Nevertheless, this amount of cash may not be worth the environmental cost that we are paying to run this complex system.

Many investors in popular blockchain technologies such as Bitcoin have started questioning their investments in the recent years. A recently revealed scheme happened with Onecoin, which is believed to have robbed millions of dollars from investors, lying to them that this would become the "next Bitcoin".

Many regulators and legislators have tried to keep up with the inventors having the goal to scam many people, but they were definitely not able to compete.

These schemes happen because many people have the “fear of missing out”, believing that they will regret the chance for earning real cash with no effort. Thus, many scammers exploit this weakness of aspiring businessmen.

Even if you are an investor willing to invest in relatively stable and familiar cryptocurrencies, such as Bitcoin, Litecoin or even Ethereum, there is always a chance that your online deposits could be hacked or even shut down with a fall of a certain system. Even many governments doubt the capabilities of such cryptocurrencies due to the fear of “suspicious practices”.

Here are points of consideration:

» The system is with a great complexity.

An average Joe who wants to start implementing and using the benefits of blockchain will make a large effort in time wanting to understand how to use it. It does take a certain amount of time before the average man on the street will start to understand the principles of encryption that are behind technologies such as Bitcoin.

Certain people might even fear the complexity of the blockchain system. Since blockchain is promising to remove the middleman (example banks) this could scare away its potential users. Many people using banks as middlemen are relatively satisfied with the services they are provided with, including transacting and banking. These services are usually at a low cost for the user.

One of the only ways that we can see people starting to use the blockchain system will be a change that is caused from disappointment and frustration from the current way of functioning in the finance industry. Maybe a financial crisis similar to the ones that have happened in previous years could ignite the will for change for the average person.

With the previous financial crises many people start taking initiative to change the system and the current way that institutions provide their services. An unexpected crisis could well be one of the ways that blockchain starts being used in our everyday lives.

» Blockchain can be very slow.

The cause of this is once again due to the complexity of the blockchain transactions that are due to take place. Compared to traditional payment systems with direct transfers, Bitcoin transactions can take several hours to complete and process.

The principles of the blockchain networks have the potential to be extremely slow due to a small computing power. After all, the transactions and interactions in the blockchain network system are all powered by computers, and this could well be a detriment to the development and processing of the blockchain system.

It is highly recommended that with the growth of the system and networks of the blockchain system a larger, more advanced and a progressive system should start being used in place of the old one. We hope that this will change in the future. Nevertheless, at this point in time this remains a problem that seeks improvement.

» Large corporations will be faced with large losses if blockchain is implemented.

It is not in the best interest of large corporations to implement the technology of blockchain. Many people would be just as a happy if blockchain just “quality disappeared”.

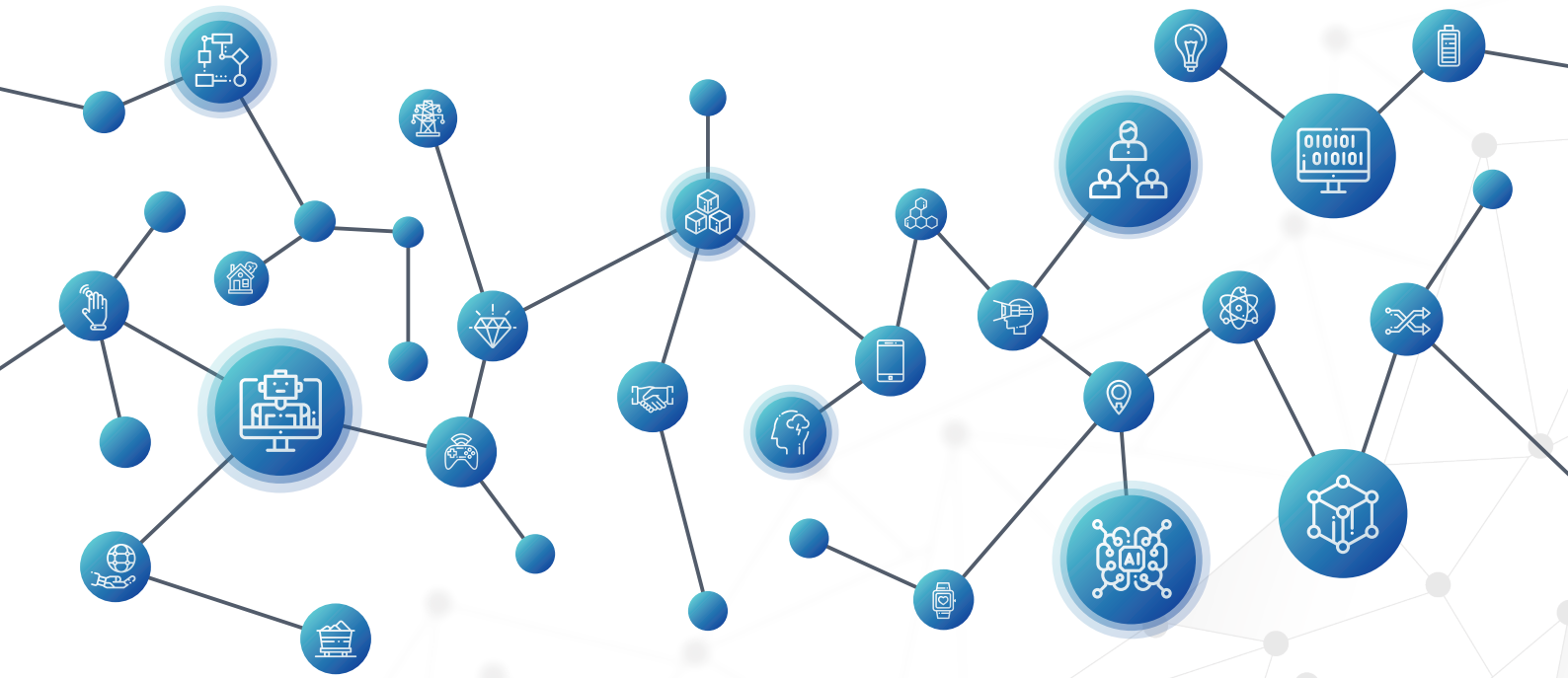
Many institutions including banks would be faced with very large losses if the transactions are processed on platforms promised by the blockchain system. Even though this might be practical for individuals owning companies, banks will lose millions of customers that pay a small amount individually. Banks function and profit with being the middleman in transactions in the finance industry.

» There is a large amount of skepticism.

Some professionals are skeptical in the usefulness of the new blockchain technology that is emerging. They state that the blockchain has a desire to exert control over the masses.

Since banks and governments carry large lobbying power, it is quite unlikely that they will allow a blockchain system to be widely implemented in the world. If blockchain does become widespread for the masses, many institutions, including banks will dramatically lose their power, and will be faced with very large losses.

It is absolutely normal for any technological revolution to be faced with barriers and treacherous passes. This includes blockchain. It is definitely unavoidable to say that the current blockchain has certain limitations and problems, and it is believed to be slightly inappropriate for many interactions in the digital world.



CHALLENGES AND SOLUTIONS

Throughout the world, many industries including financial services, healthcare, governments and innovators are just a few of many who are exploring the ways that the blockchain system could help them. A large amount of industries have already received meaningful benefits from the promise that the blockchain system has for them.

However, before blockchain becomes the technology that revolutionizes the world for the better, there are quite a few challenges that it must overcome. There is a large number of concerns regarding this system that are preventing it from becoming adopted all around the world.

Let's start with the cost that the blockchain system might have.
Even though in the long-term blockchain promises efficiency and reduced prices, it might initially cost billions of dollars to establish. It is believed that companies and organizations might have to obtain sophisticated technology before they are fully capable of utilizing the benefits that blockchain holds.

Professionals also question the storage capability that blockchain will have.
Imagine storing every single medical record ever from the healthcare industry onto a network. This would require a very large amount of storage space, probably one that we are not yet capable of maintaining with our current level of technological development.

Also, many people will question submitting their data in the blockchain system, since they will be quite unsure of their privacy. Who can access their data? These rules and regulations have not been established yet. We must force progression in this direction, so that people can seriously establish and trust this structure.

For the blockchain system to be established and continue working in a successful manner, it is absolutely necessary for many laws and regulations to be addressed. This is a system that is still a “baby” in the digital world, and for this system to become an “adult” in this world of modern technology, it is very much necessary to create a complex structure of laws and rules that will regulate this for us.

If we try to transfer all of the data available into the blockchain world, we will definitely be faced with a large number of serious problems. Before we do this, we need to address the fact that all blockchains have their own system of governance. For example, Bitcoin and Ethereum are different, both of them have different goals and offer different services.

The Nerves Blockchain that acknowledges these differences and it is trying to pursue a platform where we will be able to solve all of the challenges the blockchain system is faced with.

Since its creation, blockchain has changed. There are very big differences, as well as difficulties in the way each blockchain currently performs its tasks. Nerves Blockchain is a project that contributes to solving the challenges the current blockchain system is faced with, thus making the blockchain ecosystem much healthier. This is a promise for a brighter future, where complex data will be properly managed and organized.

Nerves Blockchain is promising to be a channel that will connect all of the blockchains. The purpose of this channel would be to create a multi-dimensional blockchain, hoping to put together and redesign all of the services available on the internet into a one sophisticated platform.
The system promised by this project will be consisted of multiple chains in the blockchain ecosystem, where each chain will communicate with each other and they will be directly fused.

— So, you might ask, what solutions and advantages does this Nerves Blockchain project offer?

» Speed is a Promise

Well, first of all, Nerves blockchain promises to increase the speed of the transactions of cryptocurrencies. With the current situation of Bitcoin, the average time to complete a single transaction in Bitcoins is 15 minutes. This is not the transaction speed we are all expecting.

» Better Storage Capacity

Nerves Blockchain also promises to solve the issue with data storage capacity. Not every single bit of information will be added onto the blockchain network. Instead, “smart contracts” would be used. They will upload the data into a binary file, thus saving storage, energy and time.

» Reduced Complexity

Also, there is a large window for improvements in the sector of the complexity of the blockchain system. Since this would be a system that is entirely new, the complexity will be an issue that has to be resolved in some manner. In the future, we are hoping to see a method that will reduce the complexity, therefore simplifying things for many people hoping to incorporate blockchain in their business.

» A Native Currency

This large project is also promising to create a native currency. It is expected that 10 billion tokens will be issued at the beginning of the Nerves Blockchain project. Throughout the following year, the total quantity of the tokens will decrease, thus making the value of the currency proportionally higher.

» Efficient Block Data

The size of a block of data will be reduced and lightened. This will be done by storing the minimal amount of information required. It promises to optimize performance by connecting all of the different chains, thus achieving maximum optimization of the performance and the capacity.

Nerves Blockchain will be a benefit to each and every participant of the blockchain ecosystem. Cryptocurrency developers will benefit by the increased speed of the transaction and the optimized performance. The cryptocurrency miners will definitely be satisfied with the stability of the system, because this stability offers miners very constant earnings. The investors will also benefit from the optimized performance and stability that is provided.

Nerves blockchain promises a better performance and advanced stability.

So, to summarize, Nerves Blockchain promises to create the most practical and achievable ways to overcome the biggest challenges that blockchain is currently faced with. It promises to improve the issue with processing speed of transactions with a method of decentralization.

— Let us delve further into more functionality of the Nerves Blockchain in the next section.

OVERVIEW AND VISION OF NERVES

In this 21st century, technology has taken its chance at making our lives better. We now live in a world where we don't have to walk to the bank anymore to make deposits. The introduction of blockchain has made lives better by promoting transactions through a centralized or decentralized system. Most of the devices that operate on Internet of Things (IoT) have also been designed to work in a centralized way while being decentralized.

With the introduction of Blockchain, the problems below have been maintained and corrected:

- High operating cost
- Scalability
- Privacy exposure
- Low functional values
- Security risks

THE BLOCKCHAIN FOR EVERY CHAIN

Blockchain since invention was created for transparency and convenience. For every chain of a system, blockchain serves as the spinal cord or nervous system to make sure it is in full operation by solving problems of scalability, privacy leak and operating costs. It ensures a well-stabilized distributed network.

With Blockchain, transactional cost is reduced and privacy is maintained on every other chain by monitoring payment codes, ensuring a constant ring-size signature and implementing bullet proof system against external issues.

The blockchain for every chain enjoy benefits as a result of the systematic makeup and properties of Blockchain. Blockchain has 4 properties which will be explained below;

» Decentralization

With Blockchain's decentralization, users of different platforms can access a centralized system or network. Controlling and monitoring of these platforms by centralized systems become limited, by treating risk that could result from the dominance of centralized system in the market.

Decentralization also means elasticity i.e. the ability to withstand changes in workload either by provisioning or de-provisioning. Either ways, decentralization is controlled automatically and ensures a cost-effective system.

» Tolerance

Blockchain uses a tolerance scheme called Byzantine Fault Tolerance which addresses system failures and ensuring maximum performance of such system. It has been designed to protect against system failures such as incorrect outputs, locality misplacement, etc.

» Transparency and Immutability

This is one exotic thing about Blockchain; it makes sure that the data on these chains are transparent and immutable without any discrepancy. These data can go a long way in transaction processes such as auditing, forensic analysis and notarizing, management of identity, authentication and authorization procedures; without Blockchain the whole system becomes unreliable to users.

» Programmability

The programmability properties of a Blockchain allow different chains and networks to have their own signature. For instance, Bitcoin has a Blockchain program that only allows successful transaction when small scripts which are under-laid have been successfully executed. Also, Ethereum uses a small virtual machine called EVM to translate top-level programming language in their smart contract.

WHAT IS NERVES BLOCKCHAIN?

Nerves Blockchain is a different type of network that is supportive of Internet of Things (IoT) devices which is more interested in self-privacy, ensuring scalability for other systems and networks, as well as acting as the core backbone for other chains.

Nerves Blockchain thrives on a network basis, which has been designed with specific features to surpass that of a single blockchain. However, it has the following principles based on its mode of operation;

TASK SPECIALIZATION

The aim is to connect all different networks into one single blockchain but while blockchain may not be able to deal with all systems at once due to transparency and privacy concerns, Nerves Blockchain has been designed to do that with regards to these concerns.

On a single blockchain, the more the number of networks or systems, the faster it increases in size and computation. This increase will reduce performance and limit blockchain's potential.

However, with the aid of "Task Specialization", each blockchain on Nerves Blockchain can interact independently with other blockchains of the different platform present without having issues. These small interactions through Task Specialization can form a large communication system which the system depends on for stability.

DISTINCT IDENTITY

This is simply being able to "mind your own business". Nerves Blockchain ensures that each blockchain has its own function and application i.e. the one required for privacy status should be different from those relaying transaction procedures to other sub-chains or to one connecting two platforms or devices together at a constant location.

FRIENDLY

For effective communication, performance and scalability, the systems on the network must be friendly i.e. be able to work in place of the other without resulting into system failure.
It must be lightweight and also be able to conserve resources such as storage, computation, etc.

HOW NERVES BLOCKCHAIN
WILL BE THE BLOCKCHAIN OF THE FUTURE?

Nerves Blockchain has every potential to lead blockchain to another different level. Being a system of chains forming a network, it operates both independently or simultaneously on different blockchain which have been arranged based on hierarchy.

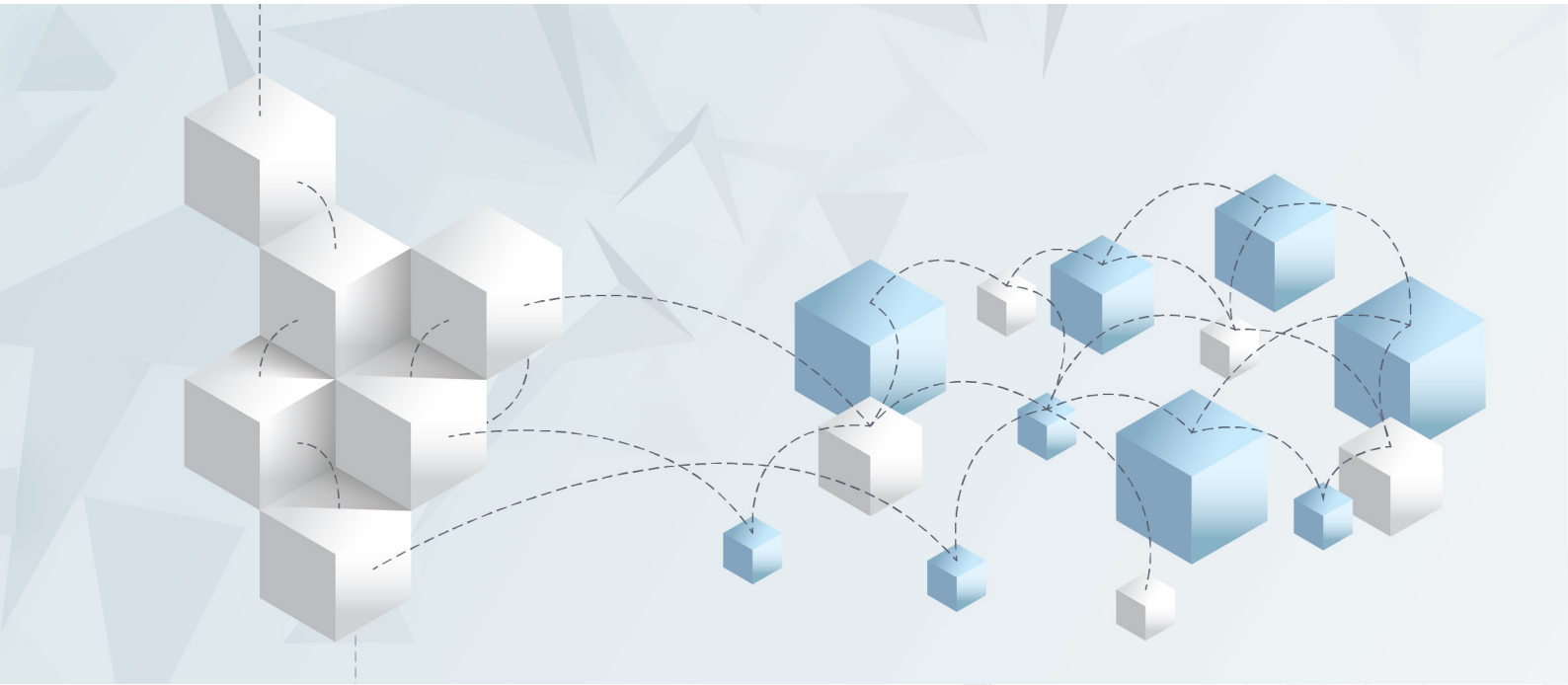
However, the fact that it settles problems with privacy and transaction cost with transparency, it will be widely received in the market in years to come. Also, it allows cross-blockchain communication which makes it very useful, interesting and reduces workload.

In addition, this network can accommodate different sizes of data without reducing performance or limiting how well it processes information.

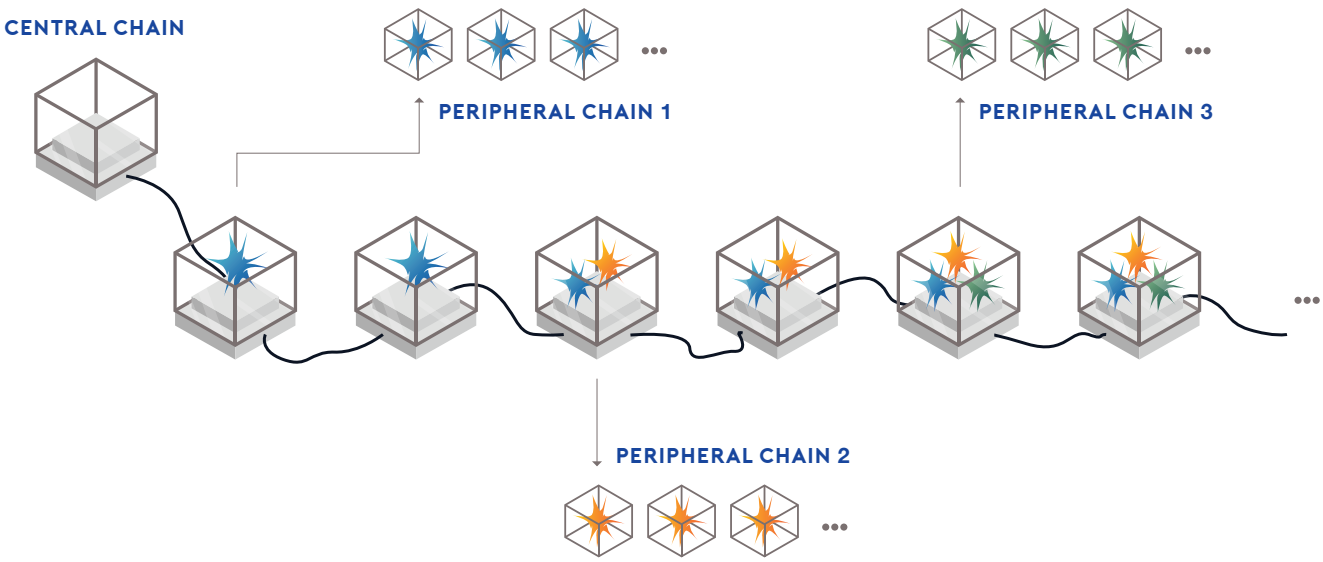
This network will be divided into 2 major groups; the root blockchain and the sub chain. The root blockchain which is the largest part that is accessible by anyone being a public chain while the sub blockchain is the smallest part which is not accessible by everyone being a private blockchain that interacts with other sub chains within the blockchain of the network.

Blockchain has changed so many lives and improved many transactions effectively for the past few years; the introduction of a system of network of blockchains will only enhance its performance. Nerves Blockchain has special features needed to improve the use of blockchain and to make sure transaction is 100 % safe, secure, transparent and immutable without discrepancies.

— In conclusion, Nerves Blockchain has the power to change the world and improve businesses with its potential and principles if given the opportunity; it holds the future of blockchain.



DESIGN AND ARCHITECTURE



Nerves blockchain is built to connect all blockchain network together as one. Due to the nature at which it is being built, it is termed a trust-inclined or trust-based multidimensional blockchain technology which connects different internet services into one system or platform.

Nerves blockchain is made up of 2 types of chain:

- Central/Central Chain: A blockchain ecosystem.
- Peripheral/Peripheral Chain: A chain where communication takes place.

Series of Peripheral Chains makes up a Central Chain; this Central Chain in turn produces a multidimensional network called Nerves blockchain.

CENTRAL CHAIN

Central chain also called a Central Chain is the important chain on the platform in which also serves as the base of the Nerves blockchain ecosystem. This central chain gives an aggregate hereby producing information and data of all Peripheral Chain within the system.

The primary purpose of the central chain is for optimization which has to do with transaction processing scalability and how expandable it could be when it stores the least information like; address of each Peripheral Chain, etc.

However, in Central Chain, Peripheral Chains are connected through address referral of each Peripheral Chain, and with the aid of this, it is able to monitor its full operation; from how it was created to when it was modified and how each chain were destroyed.

PERIPHERAL CHAIN

Peripheral chain, also known as Peripheral Chain is simultaneously an independent blockchain, as well as a DApp. The Peripheral Chain has been designed in such a way that it can form its own agreed governance depending on the operating algorithm. At the end, the Peripheral Chain stops at the DAO (Decentralized Autonomous Organization) level.

Although a Peripheral Chain is similar to a side chain in terms of structure, but they are different in functions and connections. This difference is very important in order not to confuse the idea of Peripheral Chain. Peripheral Chain has channels which are connected by AI technology such as Atomic Swaps which enhances performance.

The whole system of Nerves Blockchain deals with connecting blockchain technology; this can connect both Peripheral Chain and Central Chain together, hereby producing a system or platform where both chains act interdependently and ensuring easy transaction.

— Also, with regard to the fact that a Peripheral Chain is an independent blockchain, it manages overloading problems efficiently and handles other Peripheral Chains where transaction failures may occur. The official cryptocurrency or token used in this platform will be given a distinct identity.

Under peripheral or Peripheral Chain, there are 4 types of Peripheral Chains, they are:

» Immunity chain

This is a Peripheral Chain that doesn't make use of the native currency but is used in Nerves systems or platforms without removing them from the list of Peripheral Chains.

» Mutable chain

This Peripheral Chain makes use of the native currency at intervals and according to its design, created by users.

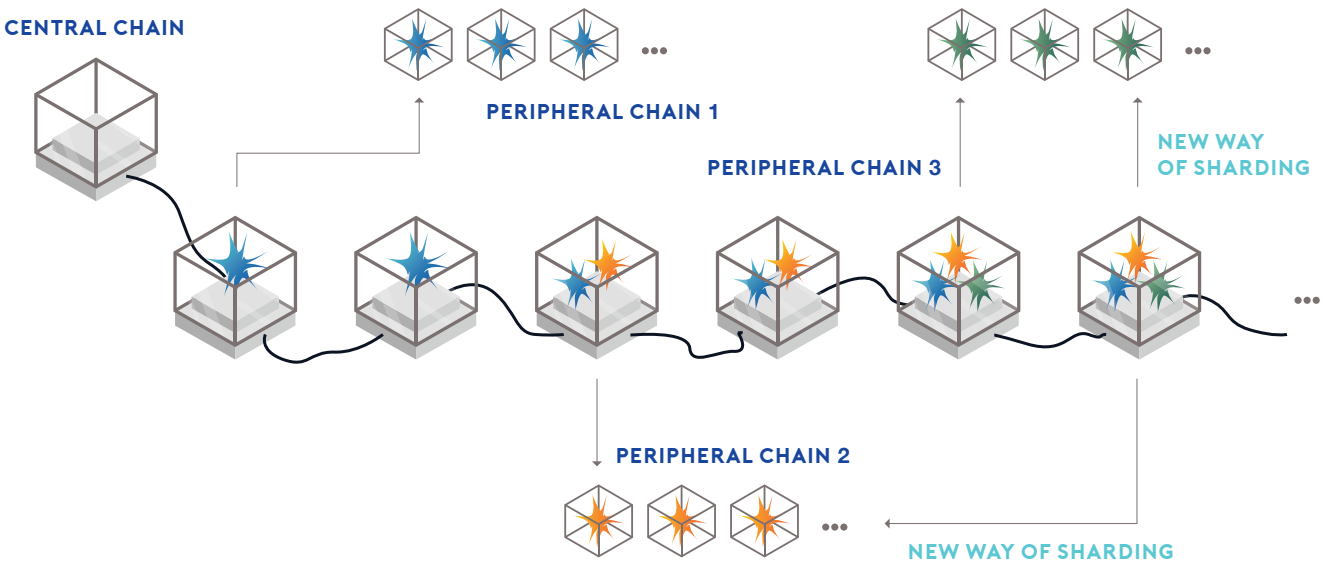
» Instant Chain

This is also another Peripheral Chain created by users and like Immunity Peripheral Chain, does not make use of the nerves currency but its duration is only for a certain period of time, after which it ceases to exist.

» Private or Test Peripheral Chain

This Peripheral Chain is not as important as other types of Peripheral Chain because it doesn't have anything to do with Nerves Blockchain, however, they are only tested, used and shared between users with limited numbers i.e. only available to those who have information or are familiar with the Peripheral Chain's owner.

THE SHARDING FRONTIER



Since Nerves with connecting systems and networks together, it also allows sharding with the aid of the features present on its multi-dimensional blockchain. This gives sharding a better future ahead.

In sharding, there is similarity in governance between Peripheral Chains and inasmuch as this is made possible, there should be no limitations to providing of information between each Peripheral Chain.

There is a criterion to which sharding is made possible; it involves the account number of each Peripheral Chain, which may be odd or even numbers, depending on its structure.

A simple equation to show a sharding effect goes thus;
Sharding effect = Number branch sharding / 2 = 50% from same Peripheral Chain plus 50 % from other Peripheral Chain.

— In addition, one Nerves Peripheral Chain is designed to give a result between the range of 1,000 TPS to 500,000,000 TPS. So, when more than one Peripheral Chain is involved in sharding, there is an enhanced processing performance within the system. Therefore, this blockchain technology allows easy payment and quick or effective processing that requires quite a number of transactions for small payments.

CROSS-CHAIN COMMUNICATION

The cross-chain communication involves how effective each Peripheral Chains of the blockchain and the Central Chain can work together to yield positive results. The ability to work hand-in-hand gives an optimized performance of main chain processing. This is done in such a way that the Central Chain acts as a channel or path where all Peripheral Chains become connected, thereby doing the following;

» Reduces Block Data size:
Central Chain only stores data with minimal information such as address, reducing the size of block data that comes on the system. The lesser the size of the data, the better the performance of the system.

» Optimizes consensus procedures and block generation:
With the aid of DPOS (Decentralized Proof of Stake), the Nerves blockchain consensus algorithm. An algorithm is built mainly for users in order ensure stability, reliability and improving processing speed on the network.

Nerves' is able to solve major blockchain problems by introducing Central Chain and Peripheral Chain as its component. Both blockchains serve different purpose but work hand-in-hand for effective processing. They both provide services without delay by using the usual blockchain DApp. This network has created an ecosystem where an active DApp can now be serviced or operated anywhere, under any condition.

NERVES NETWORK

The journey of the blockchain started off with the Bitcoin blockchain. The very foundations of the Bitcoin blockchain revolve around the POW concept.

The POW idea means that there is active work proof that has to be presented before a block can be validated on the blockchain. This invariably leads to duplication of data, high energy consumption, and slow processing times

It was to shake off the tedious POW that POS emerged so that the validation of a block will be based on the certification that a stake is available to secure the transaction. While the POS gave rise to better processing times, the limitation of commercial adoption was still locked in as the problem of network clogging and speed persisted.

The attempt to improve on the first and second generation blockchains led to the third generation era which was birthed by Dan Larimer's Delegated proof of stake mode. For the first time, stakeholders began to see the ray of light that a commercial adoption of the blockchain was feasible.

DPOS sought to take away the limitation of processing capacity and transaction authorization by initiating a system of elected witnesses. This gave a better network pace to transaction processing.

However, the limitations of the first to third generation of blockchains were what led to the emergence of Nerves Blockchain. By leveraging on smart contract capacity, a diverse network of chains with task-specific capabilities, the pace of transaction processing is clearly to witness an upswing.

Security, data privacy, specialized chains and an incorporated range of multi-signature, passphrase encryption and separation of private and public keys makes the Nerves Network revolutionary.

» An Emergent Network

Nerves Blockchain is a 2-layered blockchain system that desires to power decentralized applications with the idea of “Smart Contracts” and Additional information of users on the chain.

This type of blockchain enriches the transactions of the original blockchain concept by adding a second layer of data, which can store any relevant information, including data about the senders, the receivers and the transactions.

The second layer of Nerves Blockchain is also capable of attaching information and carefully re-using it in the future.

» Data Privacy

Nerves Blockchain intends to allow users to control the privacy of their data. Large organizations cannot exploit users’ data without their permission (unlike Facebook, where data was stolen and sold to advertisers). Nerves Blockchain wants to create a type of reward-system, in which the users of Nerves Blockchain will be rewarded with a certain amount of crypto-value for making their data public.

Duplication of data has been a case in multiple occasions, in which users cannot claim their own data publicly. This leads to many privacy problems that we mentioned previously. Therefore, we can conclude that Nerves Blockchain perfectly resolves the cases that we’ve just mentioned.

PROOF OF LINKAGE

Nerves Blockchain is intending to also develop a governance system called Proof of Linkage. This would be an automated algorithm that will ensure better performance. In addition to increasing performance, the POL also promises to enhance security while regulating the privacy and accessibility of data.

By opting to enable a system of chains that can work in synchrony, there is the benefit of synergy, and better efficiency. A number of chains that are specialized for a variety of tasks and processes can work together to produce the desired outcomes on a round-the-clock basis.

— The big gains in developing specialized chains for specific tasks make it possible to have better processing speed of transactions than what currently obtains in the blockchain world.

PRIVATE NODES

The idea of private nodes in the Nerves Blockchain is rooted in nodal differentiation.

The introduction of specialized chains in the Nerves Blockchain aim to create the avenue that is supportive for specialized services.

In this sense services like governments, medical and health delivery, Real Estate and financial services will be segregated into specific chains.

CENTRAL CHAIN NODE

The central chain node governs the entire Nerves ecosystem and is the point of call for anyone who has to interact with the blockchain.

PERIPHERAL CHAIN NODE

The peripheral chain node is the platform for DApps in the Nerves ecosystem. The design and functionality gives enough room for independence and autonomy.

Developers can explore this to host their service apps and gain a foothold on the blockchain.

SECURITY

The security of the blockchain is a subject that has drawn attention across the globe. This is not for some unbeknown reason. The first to third generation of blockchains has a drawback in terms of assured security.

The areas of concern have been:

- Access controls
- Transaction cloning
- Account hacking
- Data retrieval and storage

The loophole that renders blockchains vulnerable to attacks stems from a poor approach to network security. This is an area that the Nerves Network aims to provide a set of solutions that tightens up the loose ends.

To upgrade the security of the network all of these are activated:

PUBLIC AND PRIVATE KEYS

The cryptography of Nerves Blockchain is known to have both a Public and Private key. They are used in a signature scheme where a unique algorithm that uses a finite field defined by a prime number for the Private Key.

The public key also derives in a similar manner, indirectly from the Private Key in a number of steps.

PASSPHRASE REQUIREMENT

Building in a passphrase requirement for account access surely is a layer of security that beats the prevalent blockchain models.

So, while a private key can make for access to account details, without a passphrase, transactions cannot be authorized.

MULTI-SIGNATURE AUTHORIZATION

To ensure the privacy of users, Nerves Blockchain also adds a secondary layer of security, which features signing all of the transactions in order for them to become valid.

The process of generating the second layer is the same as the process for the main layer of security. This is the multi-sig advantage in the Nerves Blockchain.

CONCLUSION

In appreciating the problems or significant hurdles in the path the blockchain technology, the talking points have to be recognized. For the success of the system and advancement of the digital world, it is absolutely necessary for blockchain to evolve and advance in many different ways.

What is your opinion? Do you think that blockchain will advance in such a way that it will surpass all of the barriers it is faced with? Nerves offer a better option.

The outlook of the blockchain point in the direction of higher adoption rates in many spheres of human endeavor. It is against this standpoint that it becomes necessary to appreciate the Nerves blockchain.

In innovating a system that optimizes linked chains in order to efficiency, transaction speed, and security a new frontier is certainly unlocked in the push for a real-world relevance and sustainability.

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