LokChain

LCN

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Interconnection of the future blockchain and IoT

LokChain™ WhitePaper

Contents

1.0 INTRODUCTION

LokChain platform is a structured web of interconnecting technologies focused on integrating distributed ledger, mobile and IoT as one cryptographically secure ecosystem. Lokchain includes a serverless operating system with both public, private and consortium distributed ledgers using Secret Key Infrastructure (SKI) that's able to deliver quantum computing immunity for small scale users, enterprises, decentralized applications and internet of things (IoT). Lokchain is developed on the bases of our web of technologies. It taps into NEM (Smart Asset), Hashgraph (Gossip protocol, a-BFT), IoTA (Local consensus) and ECSMID (benevolent Cryptography; 2048 bits encryption derived from AES), and has successfully resolved over 16 problems identified in the current blockchain space.

This is a highly profitable inter-blockchain, mobile-to-mobile (Mo2Mo), IoT-to-Mobile (I2M), Mobile-to-IoT (M2I), IoT-to-IoT (I2I), IoT-to-IoT to Cloud security infrastructure which does not rely on any third-party, vendor or server[7]. The assumption is that all these approaches keep their immutable records on blockchain. We feature some of the most advanced technologies in the industry. This qualifies LokChain to the membership of Blockchain 4.0 (4th Generation BCT) family.

Lokcoin (LCN), is a native cryptocurrency designed to work seamlessly on LokChain platform, open to cross-over alternative blockchain platforms. LCN is to be issued as proposed on the public NEM mosaic-- Smart asset compliant token. LokChain team will integrate its existing "wallet" function to hold LCN balances and allow users to utilize the tokens on the LokChain platform shortly after the tokens are enacted. The LokChain protocol called Zero Knowledge Proof Triangle Flow (ZT-Flow) is being developed for implementation on its own open source blockchain. We have backed up the token life cycle with a smart hub infrastructure project of $400M+. We are not just building a

platform but will engage in staving off cryptocurrency inflation and manipulation with the approach that guarantees market security. This means that the token value will be derived from the amount of money raised against the project cost. When the project is fully completed then we can say that the ecosystem of a smart city is fully converged to maximum profit. It will be a critical point for all contributors.

In the current state of art, IoT and blockchain integration is based on public key infrastructure (PKI) cryptography. There is no change in permission and role for users, vendors, mobile nodes and IoT devices. This implies a continuous breach of privacy. On the contrary secret key infrastructure (SKI) used in lokchain emphasizes total data encryption, secure data life cycle (s-DLC), total privacy, perpetual ownership and total autonomy at rest/transient

SKI features a clear use of attributes and profiles where each of these holds its own autonomy. Attributes are what you are, what you know and what you have e.g Name, address, imei, driver license, biometrics, etc. SKI changes plain attributes into encrypts. A collection of encrypts represent a Data Nucleus Aggregate (DNA). Sets of 16 or more of these attributes build a profile. A collection of these profiles is called Digital Data Nucleic Authority (DDNA). SKI makes certain that the Confidentiality, Integrity, Availability and Privacy are maintained in a serverless and decentralized blockchain environment. More so, Identity Access Management (IAM) is easier to handle. Majority of the IoT devices can now communicate one-on-one in an intelligent manner by using DNA.

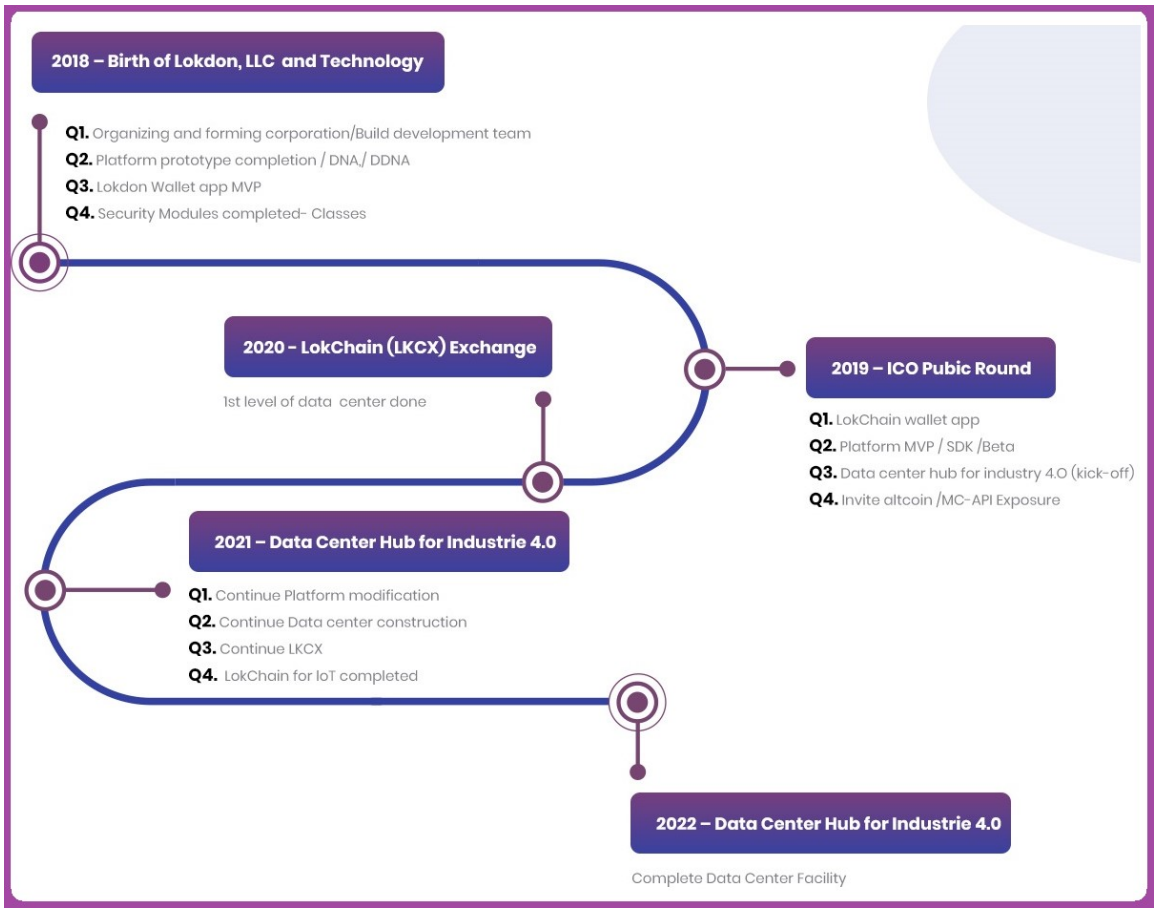
This kind of change will attract more participants, reshape market rules and create entirely new business models. LokChain is especially designed for mobile, IoT, businesses and the marketplace. The platform consists of a blockchain based “virtual machine” and defined modules, middleware and software stacks in serverless modes. It supports decentralized processes governed by smart asset residing on the platform’s web-based software and application stacks.

2.0 MISSION & GOAL

The development of an ecosystem consisting of protocols, a platform and suite of technologies that improve and securely integrate distributed ledgers, mobile and IoT. To accomplish this mission, we need to gather intelligence, break down the problems into smaller pieces. We must invest in continuous education, research, understudy of the dynamics of the technology and requirements. We must understand the global technology trend by gauging how to go from processes to a viable product. More so, security risks, threats, market needs and availability of resources must be considered. We must invest in education of the general population including young entrepreneurs and startups.

3.0 VISION

To make LokChain a Crypto-Industry technology that can be used by the government, businesses and enterprises. To guarantee a seamless merge of people, products and technology into one economic ecosystem. To make certain that people will contract, transact, distribute, share, secure immutable records smartly, in a decentralized network. To cause automated changes in commerce and enterprises by eliminating third parties in banking, finance, health, legal, retail, construction, census, manufacturing, agriculture, property registry, elections, pod habitation and security exchange with little or no trust. To economically strengthen the most advanced industrial barter system the world had ever seen. To combine AI, ML and other innovation for leveraging LokChain platform as a tool of industrial internet of things (IIoT) or Industrie 4.0. The tradition will extend to the completion of a smart city in any part of the world by the year 2023. To end the stealth exfiltration of data by edge devices, data aggregators, analytics and processors. Since, we assume, these devices to still will find uses in this new ecosystem.



4.0 THE CASE AGAINST PKI

LokChain is the first blockchain platform that carefully solved majority of the problems tormenting the use and integration of blockchain technology (refer to DLT). These problems do not preclude:

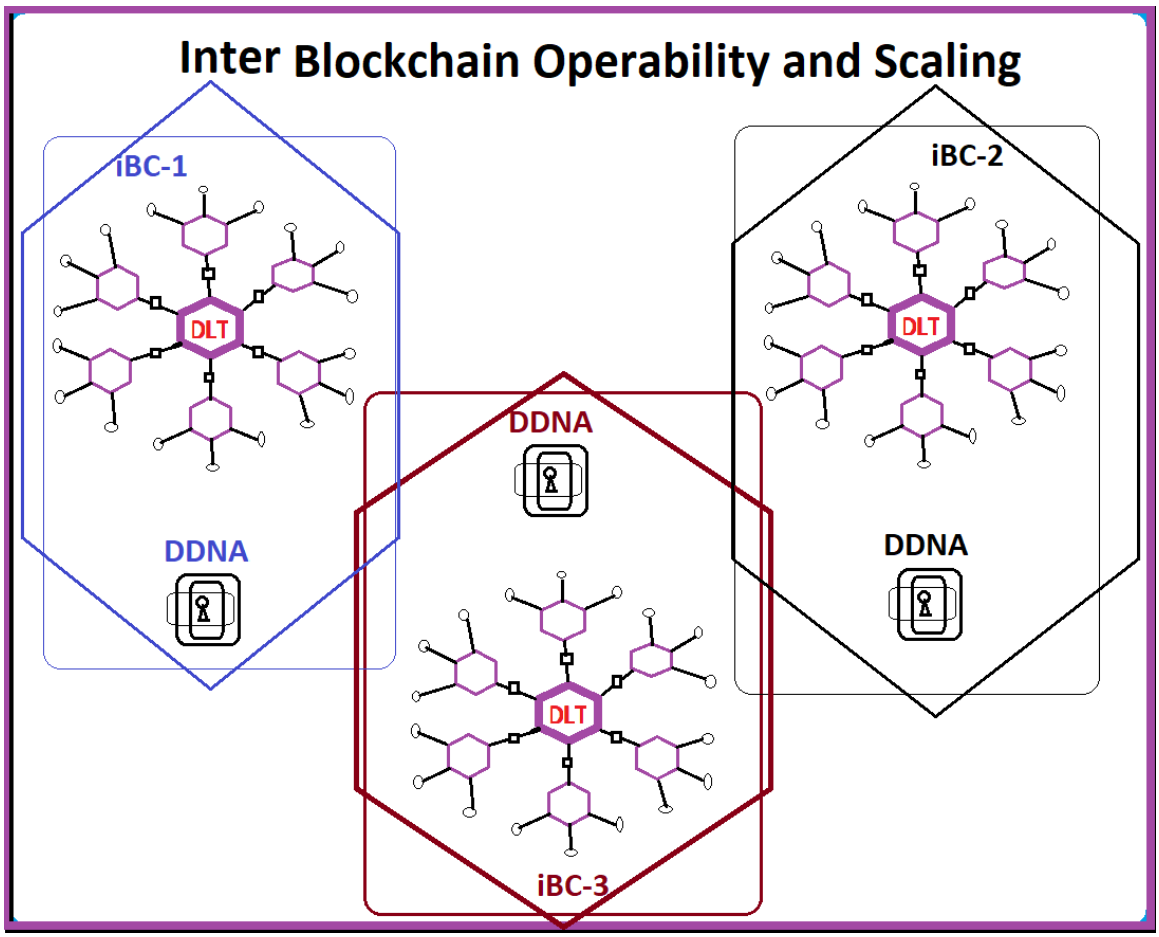
- The stress on PKI
- Scalability
- Interoperability
- Mining (waste of electric power)

All roads to the famous Satoshi paper points to the need for decentralization. The spirit of blockchain is decentralization. Simply put, Lokchain will maintain a hybrid status of certain relevant features of blockchain in line with the intent of the original paper.

1. Distributed ledger system for electronic transactions.
2. Asynchronous Byzantine Fault Tolerance and Gossip or Update protocol
3. Local consensus

We have successfully implemented number 2 and number 3 in our wallet application. The use of smart asset is invoked with smart contracts to establish confirmation of any transaction between two parties. IoT and Blockchain belong to one ecosystem by inception. However, the state of the affairs is met by failed promises and recognition of any practical establishment of the desired vision. Why? Implementation of cryptography (PKI) is the biggest problem encountered as we try to bring inter network of things into the fold of blockchain. We want to take advantage of the immutability, decentralization, transparency and trustless paradigm. So long as there is no one certificate authority (CA) to rule all networks (certificates), there will be no one blockchain to rule them all. With that being said: This brings us back to the network or net. Interconnected networks of two or more networks become inter network or internet.

We surmise that we will be left with inter-blockchain alone and separated from IoT. That outcome is not what we dreamt of or wished for. How can we bring this twin together? This sinister outcome will make, almost impossible the wider implementation of Industrie 4.0 for 20 Billion common things and 8 Billion+ population. These people and nodes in the network are treasures waiting to be tapped. We can no longer wait because unraveling this big marvel will benefit us all. Should we, choose to do nothing about this, it will delay human growth out of poverty, reduce the timely ramping of this new idea and possibly reduce the capacity of wealth creation promised by the integration of these technologies. What we need is in the diagram below. – The architecture of interblockchain.



4.1 WE MAKE OUR CASE:

It had been long known by many in the industry that the Public Key Infrastructure (PKI) is at a precipice [1]. Until now, It was a hard fact which we embraced with no sight of changes in view. Although, PKI might not completely collapse. It will hinder blockchain and IoT from reaching the potential that ushers the 4th industrial revolution. We are bracing up to a future where values are realized in all the unusual places. People, machines, technology and processes are welded together in a secure, decentralized,

trustless internet of things (IoT ecosystem). It is impossible to amass the wealth hidden in these things without first securing many past observations.

This might not be a public knowledge: In any blockchain network there is server/client set up for the issuance of public and the private keys. This public and private key are not accounted for neither are they revoked in any sinister circumstances. As a matter of fact, you are recommended to stow away your private key as well as your password etc,.

"Traditional Public-Key Infrastructure (PKI) is Certificate Authority based (CA-based). Thus, the security of PKI is completely relying on the security of CAs' infrastructure. However, many recent breaches show that the CA's infrastructure can be compromised as well as exposed to operational errors, while the Log-based PKIs and Web of Trust (WoT) approaches have many issues related to the potential points-of-failure and other difficulties."

The above is the abstract from an MIT research paper [3].

PKI was originally designed for server and client network. It was not designed for a P2P or decentralized network nor storage. These are the main problems with PKI:

- **Liability and enforceability**

Improper use of certificate or forged certificate can lead to a catastrophic loss for most enterprises.

- **Interoperability and Cross-Certification**

PKI has many standards which are still unsettled thus Enterprises, Users, Devices and Vendors are not able to share anything that will allow any practical cross-certification, but, a theoretical one promised on paper alone.

In sum, it is agreed on all grounds that great difficulties abound with the use and management of PKI. Especially, in a decentralized network. There is a stress on the use and implementation of PKI. The wake of internet ubiquity and IoT perpetuates the online

presence of many unusual devices. Relying on a benevolent cryptography is not a bad thing. However, when the model does not fit reality anymore, that poses a great danger. Alternatives are sought from many researchers. We have independently researched on the next big thing that will allow or push the intent of Satoshi's paper and bring the IoT to the fold. LokChain is the only answer we see after 17 years of independent research.

We can clearly represent our platform with this single line:

Lokchain = Interblockchain + IoT = IIoT(Industry 4.0)

@ over 850, 000 TX/s 0.1 LCN Fee

4.2 THE RISE OF CONSUMERS

Gartner Research projects there will be 20.4 billion connected things being used globally by 2020. Meanwhile, IDC forecasts the "global datasphere" to increase 10 times to 163 zettabytes (ZB) by 2025 [4]. 1 ZB = 10^{21} or (1,000,000,000,000,000,000,000 bytes). There are approximately 8.5 billion people in the world. 163,000,000,000,000,000,000,000 bytes / 8, 500,000,000 of general population. This means that each person will generate 7,037,481.6 GB of data. The disclaimer is that, most of the data will be generated by Edge devices and sensors. Majority of the cloud services are under-utilized till data.

This is a great news for the consumers, nodes and users. LokChain has a strategy: A great way for consumers and data brokers to generate extra income symbiotically. The possibilities for data owners are very high because every data is encrypted. Analysis and processing will yield no meaningful result for businesses that are scraping data over the internet for analytics. The control will reside with the users or the generators of the information. A user will decide, whether, or not to end the lifecycle of non-relevant data by selling them to the brokers. Google, FB, etc., will now have to pay the users for the information they once collected for free in the past. It will be a pay-back time for the big G and FB.

Furthermore, 80+% of the ''global datasphere'' predicted by IDC will be the creation of Edge devices and sensors. Instead of having the Edge devices replicate data fragments to servers. LokChain platform will meet the challenge in making communication between edge devices and blockchain possible to achieve true decentralization. Remember that the work of edge computing is to push application, data and computing power away from centralization. This increases latency and performance. Imagine the huge difference when the link is built between edge device and distributed ledger technology. Our platform is robust enough generate earning for the users regardless of the system they are found. We think that it is economical for a user to earn money from some data they don't need anymore. Finally, the users organized within interest buckets will be able to sell their personal data to data brokers as alternate income.

5.0 WHY LOKCHAIN?

LokChain will make millions of transactions possible in lightning speed because of its decentralized P2P orientation in both network and storage. By embracing the developmental skills, problem terrains and local technical know-how in the emerging market. It will be a great option for documented world.

You want to use LokChain Platform because it was designed to:

a. Turn disorder into secure governance based on roles, permission derived from combination of physiological and behavioral pattern. -- DDNA
b. Turn IoT devices into secure autonomous blockchain entities of things of values.
c. Turn rural economies and manufacturing into the most secure transactions for wealth creation.
d. Turn blockchain ICO into media of building infrastructural projects in emerging markets.

e. Turn the world' largest business incubator into an innovation complex for Industrie 4.0

Find below some of the features excluded in LokChain platform.

1. It excludes irrelevant features which may not apply in Blockchain for emerging markets:

a. Mining cost of electric power
b. Centralization perpetuates third party
c. Trust management

2. To solve all issues a business may have:

a. Security
b. Privacy
c. Transparency
d. Scalability

3. To bring ubiquity on blockchain

A. Remove Latency problems
B. Remove Low throughput problems

5.1 Special Case of Biometrics

Identity and access will be indispensable in the new era. Thus, there is a need to use identity to leverage access as soon as we figure out: 1. What we need access to? 2. Why we need the access? 3. How we can start the access? We have developed some amazing biometric methods to achieve this. Amongst many, there is Electronic Finger Print Positive Ridge Identification (eFRI).

First thing we did was building a profile for each nodes or users. We have over 14 attributes:

1. Full name/Company name
2. registered:company email/email
3. Location:addr/company addr
4. Finger print
5. Password
6. MPIN
7. Drivers lic # (DL)
8. Passport# (PP)
9. IMEI/MAC/UID
10. Cell Phone/mobile number in use
11. other biometrics
12. Date of birth (DOB)

13 Social Security (SS)

14. Username
15. FEIN

These are encrypted to formulate data nucleus aggregator (DNA) a collection of unique biometric specific to a kind. The platform's profile and built with this protocol. A collection of each different profile is called Digital Data Nucleic Authority (DDNA). This is can be used by any node in lokchain network. The nodes share ledger which contains pertinent data PII, PHI, PCI-DSS and GDPR. It is pertinent that we understand how chosen biometrics can be combines to give the most desired result for authentication and protection of the user and the network.

WYA	WYH	WYK
electronic Finger Print (eFRI)	Registered:Company email/email	Password

Other Biometrics	SS	MPIN
	DOB	
	Location:addr/company addr	
	FULLNAME /COMPANY NAME	
	FEIN	
	PP	
	IMEI/MAC/UID	
	Cell Phone/mobile number in use	
	Username	
	Soft/Hard Token	
	Driver license (DL)	

5.1 Identity Access Manager and Permission

The identity access management here in, differs from what we have used in the past and the present time. It just doesn't show the best way to handle access in a decentralized approach. More so, it holds at the core the concept of:

1. What you are (WYA)-A
2. What you have (WYH)-H
3. 3. What you know (WYK)- K

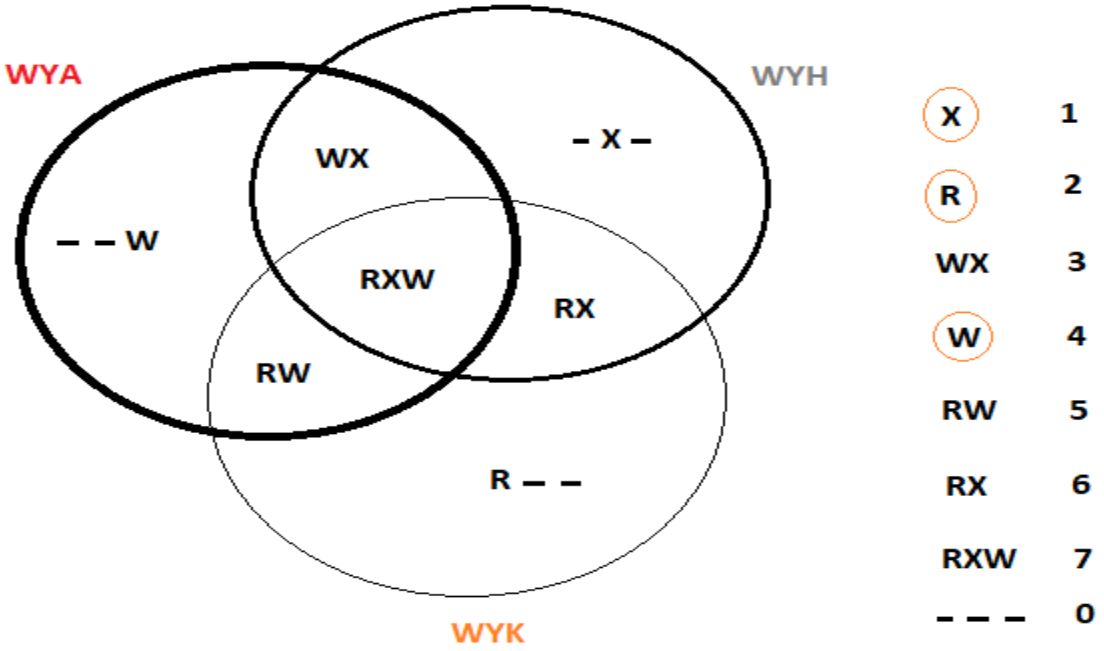
Number 1 doesn't change over time, but you can always loose number 2 and 3. Armed with this information, we can create a table or mathematical set which can emulate the file permission in Unix/Linux operating system. This can absolutely allow some leverage in access permission for all nodes in lokchain network. Other similar method could possibly be derived, but this is the first attempt to 'chmod' permission in distributed ledger permission. We have created a set and subset of the permissions allowed. However, we must define precisely the absolute nature of the parameters presented.

What you are will refer to all anatomical features on a user's being that can be used as an infallible mean of identification: These are referenced to the thumbs and other body parts as unique, printable, non-duplicable, portable and legally collectible as a reference

to physiological facts directly connected to other user's anatomy. E.g Finger print, iris, and face.

What you have will refers to whatever was given to you that you obtained from an authorized person as an enabler to gaining access to any system that authenticates the user in, for further authorization of resource usage. E.g Soft and hard token

What you know will refer to your brainchild in the form of a PIN and Password of a certain acceptable complexity; alpha; numeric and special-character ensemble which none other than possesses except you.



WYA	WYH	WYK
electronic Finger Print (eFRI)	Registered:Company email/email	Password
Vein pattern	SS	MPIN
Typing rythm	DOB	
Signature recognition	Location:addr/company addr	
Gait recognition	FULLNAME /COMPANY NAME	

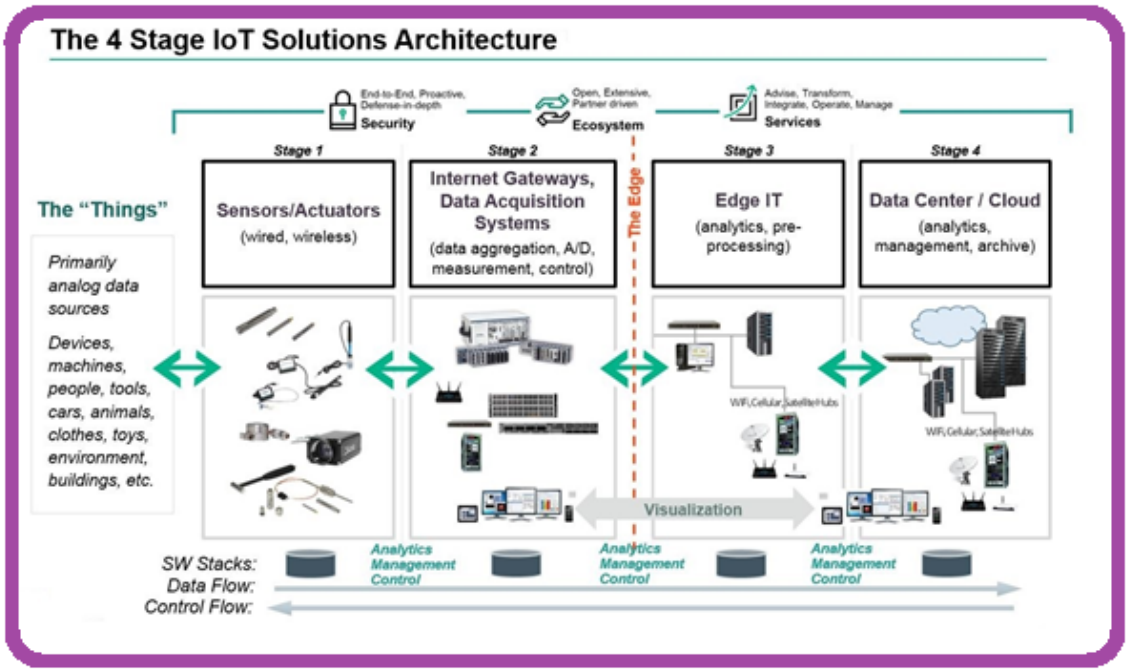
Mouse movement analysis	FEIN	
	PP	
	IMEI/MAC/UID	
	Cell Phone/mobile number in use	
	Username	
	Soft/Hard Token	
	Driver license (DL)	

This will serve as a solid yardstick or measure for users, groups and other policies currently implemented in the ecosystem. The zero permission (no permission for UGO) could be used widely depending on the environment and which permission needs to be curtailed to boost security of data and infrastructure. We can follow the chmod biometric wheels methodology to determine a user or nodes permission to resources. This will ultimately be very useful in constrained environment where autonomy is valued more than policies. This allows easy identification of rogue devices especially when the records kept on these devices are immutable.

6.0 Industrial IoT

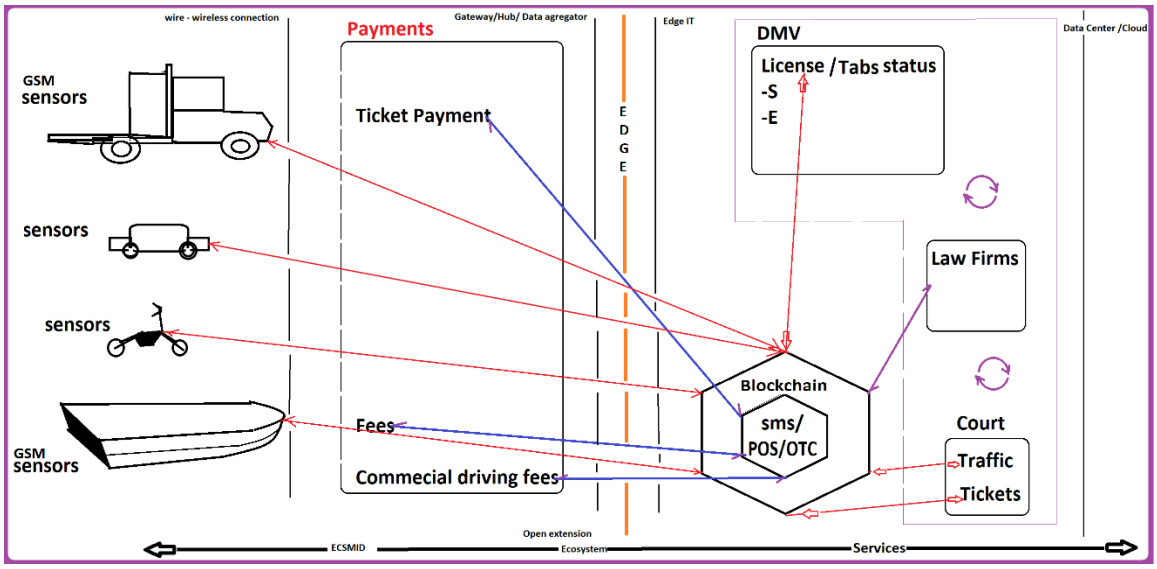
Industrial IoT or Industrie 4.0 will be very instrumental for achieving the 4th industrial revolution. In the diagram below, we will show you the 4 stages architecture of the modern IIoT. We see clearly the direction needed to be taken in order to achieve the fits we deem to accomplish. Creating a serverless world doesn't have to start with just PKI.

We must pay attention to the processes of the EDGE devices. They usually will converge to a common server.



Four stage Fig .0.0

Below you will envision what could be achieved by using LokChain to connect devices to service providers and enterprises. We present to you high level architecture to fill your curiosity. I am sure that you are already thinking of the myriads of possibilities here and below. What if these two stages 3 and 4 happen on the blockchain. This linkage of regions are the crux of IoT longevity and blockchain infancy. Edge devices where introduced for enterprise to increase performance and minimize latency. How well, will all these do as soon as 20Billion^{+} devices show up by 2020? Lokchain introduction of DNA and DDNA as a part of the secret key infrastructure gives all devices and users the autonomy needed as an entity and as well as their use and storage of data.



Ideal IoT ecosystem

Use Case of ZT-Flow protocol

1. **Lokdon Wallet Application**

https://www.youtube.com/watch?v=07qQJTfgzNs

2. **General Data Protection Regulation (GDPR)**
   Using LokChain to implement GDPR is the best way to rid yourself of the data to accomplish the right to forget.

3. **Smart Manufacturing**

Areas where Lokdon Technology can help:

NIST Lightweight Cryptography draft [SIC 2017] calls for standard algorithm for lightweight cryptography. When you look at the drafted document: It is quite clear that IoT devices will be fitted on a second-class encryption capacity. It doesn't have to be that way because IoT will have more footprints and activities come 2020 [6]. Gartner and Cisco have predicted the availability of over 20+B IoT devices in the nearest future. They called this a new terrain of threats as in Internet of Threats (IoTh)

Manufacturing:

There are three smart components needed in the future manufacturing or Industrie 4.0.

1. Humans
   Human can always build and initiate the process.
2. Robotics/IoT Technology
   Humans and the machines will depend on technology to act.
3. Specialized Machines (smart phones) with sensors: MCU forming Cyber physicals devices.
   These are the software and hardware bye products of the technology

We will illustrate a simple manufacturing process by creating a makeshift process. The point is to demonstrate a security gap in the IoT implementation which demands serious solutions. Say Shift supervisor in Germany or Japan wakes up at 5. At 5:30am the production line at a beverage company starts up. He now places a call at 5: 25am to activate the manufacturing line which includes 2 or 3 robots. The duties of the robots are defined below:

1. Reference the container material, size (volume), shape and color (compare stored data)
2. Must be aware of its content (liquid reserve) and the containers capacity (How? AI)
3. Ascertain that the right container is on the conveyor belt (How? Sensor security in Robert /containers)
4. Fill the beverage containers up to the acceptable volume (container sensors)
5. Once done cork, label and box it up in a case of 12s. (AI or robots)
6. Stack them up in pellets (240) for delivery. (AI or robots)
7. Each robot will Continue for 100 pellets, if the containers = > 24000.

The duties of the containers carrying the beverages:

1. Make certain that the right robots serve it. (How? Sensor security)
2. Ascertain that he beverage is consistent in volume, color and density(texture)

We are equipped to solve this problem identified in #3 of the robot's duties and the #2 of the container's duties. These now becomes pervasive problem to all. If this identification is not effectively carried out, then rogue containers and robots could easily be used by swapping the real ones.

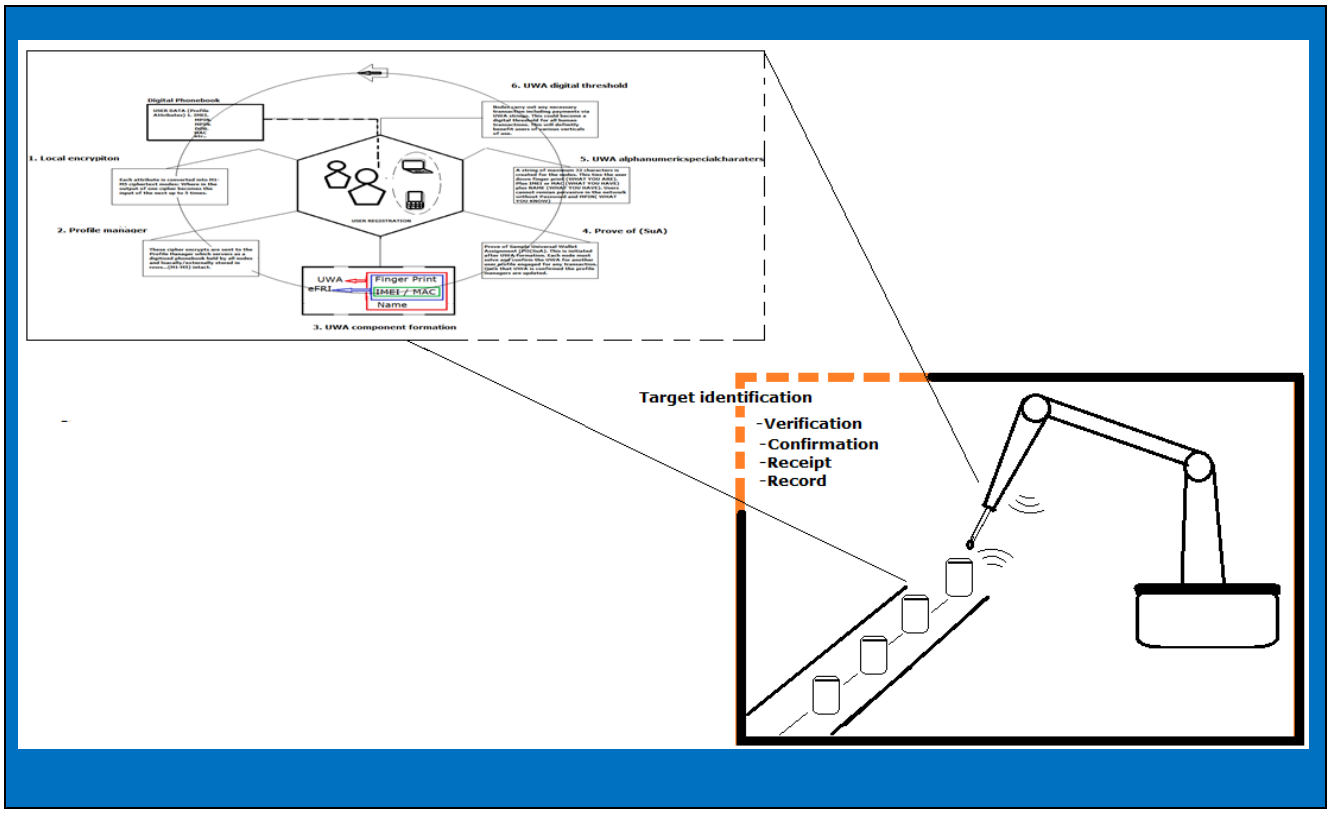
Collective Problems

a. Ascertain that the right container is on the conveyor belt (How? Sensor security in Robot /containers)
b. Make certain that the right robots serve containers (How? Sensor security)

In mechanism shown below we see that the critical points in security are: **a** and **b** above. The point where the robot and container converge should be examined seriously for imposition by any external forces.

Lokdon technology will address:

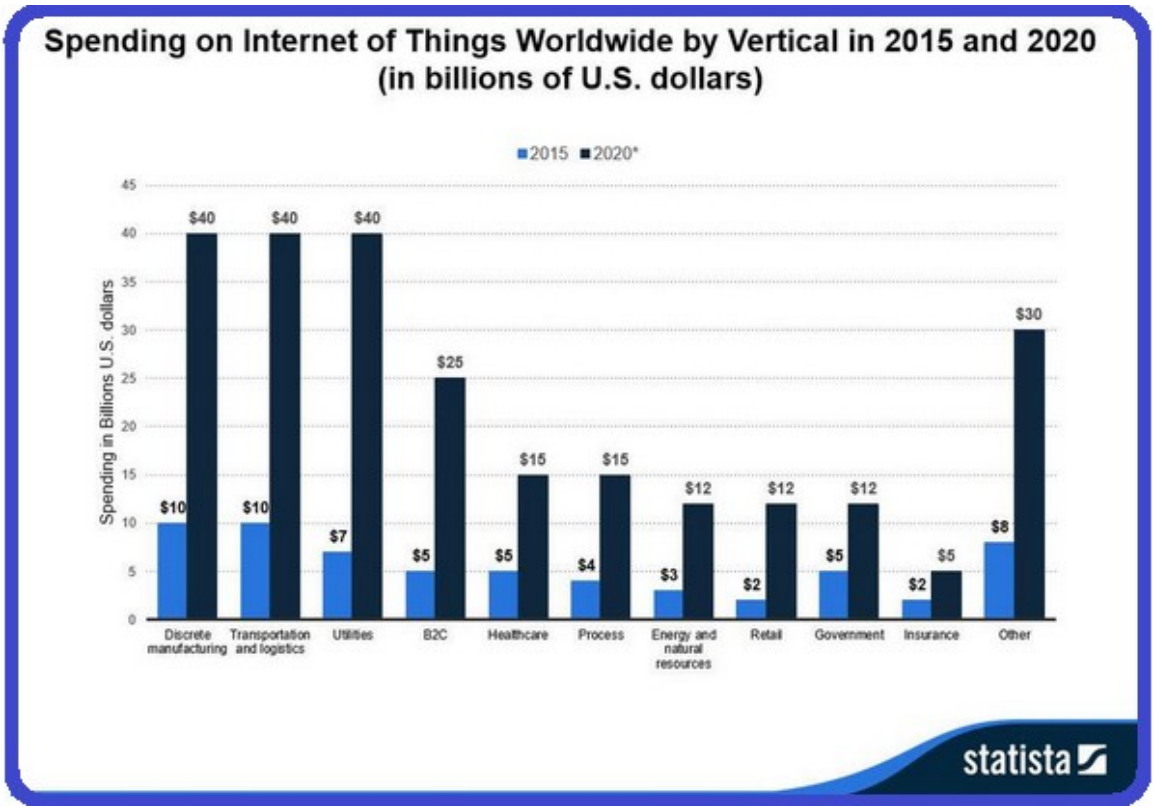
1. Stopping impostors or rogue devices from the network
2. Avoiding MITM and DDOS
3. Making sure of robots and containers identity are verified



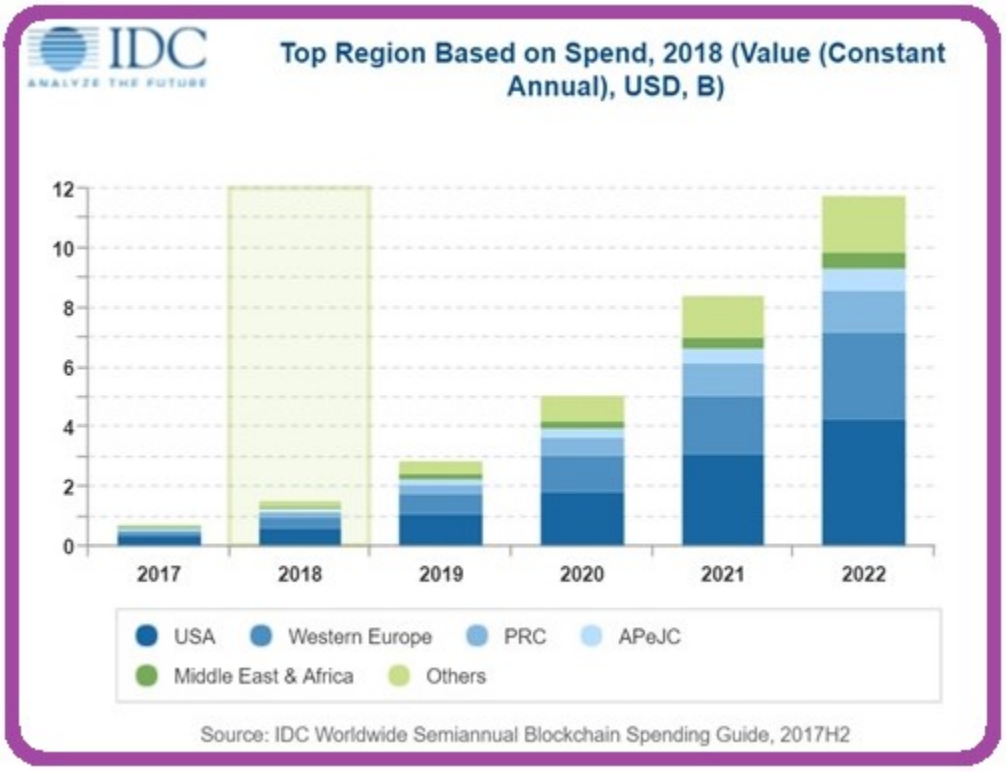
Industrie 4.0 manufacturing

Market Spending for IoT and Blockchain

The market looks good according to IDC. IoT is reaching 800 Billion from 775Billion. **Smart Cities (23%), Connected Industry (17%) and Connected Buildings (12%) are the top three IoT projects in progress.** IoT Analytics found that nearly half of the Smart City projects (45%) are in Europe, while the Americas lead in the area of Connected Health, with 55% of global projects today. The Americas are leading the world in Connected Car IoT projects as well, with 54% of them worldwide. Look for increased R&D spending as healthcare providers, and auto manufacturers attempt to establish patent and intellectual property (IP) leadership in these fast-growing markets.



Blockchain spending will be led by the financial sector ($552 million in 2018), driven largely by rapid adoption in the banking industry. The distribution and services sector ($379 million in 2018) will see strong investments from the retail and professional services industries while the manufacturing and resources sector ($334 million in 2018) will be driven by the discrete and process manufacturing industries. In the U.S., the distribution and services sector will see the largest blockchain investments. The financial services sector will be the leading driver in Western Europe, Middle East and Africa (MEA), China, and APeJC in 2018. The industries that will see the fastest growth in blockchain spending will be process manufacturing (78.8% CAGR), professional services (77.7% CAGR), and banking (74.7% CAGR) [9].



Blockchain Market spending [9]

7.0 The curse of Blockchain

Blockchain is not only cursed by Scalabilty and Interoperability. Let' rewind back to the early day of the internet. You will agree with me that we have many unfinished businesses to address before embarking on this next biggest thing.

In the late 60s (10:30pm on Oct. 29th 1969) ARPANET sent its first message from UCLA to Stanford Research Institute. That was the wake of the internet. Today, we are at dawn of the integration of people, technology, machines, processes and products or data. We must rethink modern cryptography and the methods involved in their implementation. It is no longer security as usual. We will gain experience: At what cost? Won't we add more

attack surfaces to our failing internet security if we jump right into this new-technology without any standard or protocol for the cryptosystem that will be used to foster co-existence? What is will these be for us, real Internet of Things (IoT) or Internet of Threats. The later could be the case if we don't check security first. We are currently in the state of internet of threats with the alarming rate of breaches across the board. This is the result of complacency or total ignorance of less band-aid approach to security. We must build security into the new waves that is coming in. It is not true that everything that could be build had already been built. If the new babies, the stars and snowflakes remain unique and exceptionally awesome. How do you continue to account for newer ones? How then can every development be absolute without newer ones? What in this world under heaven, is absolute? BlockChain has a good potential but could be better if we can impose newer methods of cryptographic innovations upon the status quo. In lieu of 60-years old technology we are compelled to explore new avenues. That is why we identified these problems collectively raising doubts into the status of Blockchain potentials.

Problems

1. Use of cryptographic suite of minimum 256 bits encryption keys.

2. Current asymmetric encryption keys are left out for you to store in your drive.

3. Public Key Infrastructure (PKI) is not easy to use on mobile newer technologies like IoT.

4. Hashes (+Salt) in the DB gives attackers a hint on what to do.

5. Most keys are not changed often, else they are static.

6. Biometrics aren't seen as a means of IAM development, as yet for blockchain.

7. Password is the major instrument of accessing as systems and authorization for resource use.

8. Use of both Key Exchange and PKI is cumbersome.

9. Limitation of 10mins/Block: Less the 500 transactions/s

10. Modern cryptographic systems used currently in blockchain are watered down in mobile and IoT devices.

11. Asymmetric and Symmetric keys are never used in a versatile and coalescent way.

12. Private and public key (PKI) implementation is making Dapp harder to achieve securely and seamlessly

13. Most DLT are broadcasting transactions making it harder for privacy.

14. PoW, PoI and Pos for consensus have serious limitations.

15. There is no realistic data life cycle in any blockchain technology.

16. Mining will shackle emerging markets as others with power decide their transactions.

17. Blockchain developers and those holding the purse strings, sometimes are motivated by greed and avarice, thus the lack of sincere development in emerging markets. - These markets are fragile.

To support industry 4.0. This new technology (BlockChain) must recognize as viable those problems mentioned above. LokChain have taken care of these problems. More so, all cryptocurrency used in the digital world must comply by embracing these new features shown below:

Solutions

1. The system makes sure that all data are 2048 bits of encryption both transient and locally -quantum computing immunity.

2. We must implore dynamic random keys of 680-digit long or more, that never store anywhere.
3. We must remove PKI and key management as we know it today, thus inter-operation and scaling will become possible with no-frills.
4. We must not use password hashing in DB at all, except for checking the integrity of strings.
5. The keys will remain dynamic (changing) for any message no matter how small
6. IAM used here must be based on bio-metrics e.g fingerprints, iris, voice etc., Behavioral patterns and physiological appendages.
7. We must have multiple attributes to perform authentication for the system access.
8. The system must exhibit both post symmetric and asymmetric cryptographic implementation.
9. The mechanism execution is very fast with zero knowledge proof (ZKP) and scalable
10. It could be used anywhere on any system software or hardware.
11. The encryption is more of the modular forms- M1-M5 aiding a-BFT to exonerate the curse of blockchain.
12. Every node can update/upload transaction record ledger i.e DApp of other software will derive as well.
13. There will be no need to broadcast transaction if only vetted profiles are approved through Biometrics-Mult-Auth (Fingerprints + Auth), physiological appendages and behavioral patterns etc.,
14. Prove of SuA -> Po(SuA) = (PoS); and Simple UWA Assignment (SuA) as a means of vetting profile's Universal Wallet Address (UWA).—Removing DDOS and serves as sovereign ID.
15. Data uniqueness is guaranteed, where the letter 'a' is sent across one node, about 10 times. That letter must represent 10 different characters periodically.
16. Mining must be removed for a quick turn-around in real time without violating the chain of data custody.
17. The locale economies, indigenous skills, fraud/corruption level, commerce and industries of the emerging markets will now be considered in LokChain integration.

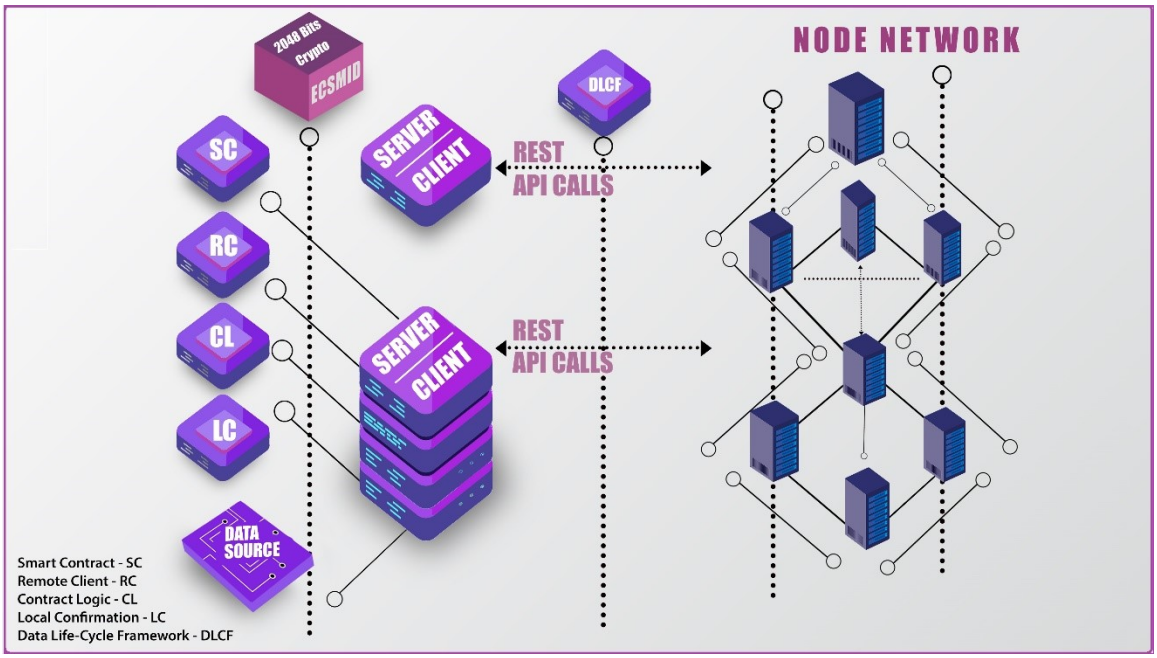
These are keys to no-frills distributed ledger, auto-crypto-security in the new era.-Digital world of internet of things of values (IoToV) " We must consider first the provision of security for permission and non-permission Blockchain (Dapp, smart contract, smart asset and other transactions) via secure profiles comprised of encrypted attributes form Secret Key Infrastructure (SKI). We believe that the emerging markets will find these precepts to

be the most meaningful when implemented. In the same vein, it will remain a vital option for the documented world.

8.0 THE TECHNOLOGY

The technology we are offering was contrived with security in view. Our quest for a secure communication compelled us to build a platform that can bring the union of IoT, interconnection of blockchain and many mobile devices. We want this vision accomplished in your life time. Thus, we are working tirelessly towards this vision of Industrie 4.0 – People, Technology, Process and Products. These technologies will unleash great power to the general population. "With great power comes great responsibility." What will you do with this great opportunity of astronomical wealth?

8.1 PLATFORM ARCHITECTURE



- **Distributed Ledger system for eTransaction DLSeT (LokChain) Nov, 2017 Provisional 62584736**

i. SDK and API for developers

ii. Products:

2. Universal Wallet Address-software utility built with SDK

   This is an encrypted addressing system which marries the biometrics, what one has, and what one knows to present a string verified by the community through prove of work. This is a 32 maximum character comprised of 'alpha-numeric-special characters' string.

3. *Authentication API -software utility*

   This is a cross platform API developed to allow other enterprises and organization easy registration using Lokdon for secured all encrypted profile creation.

- **End-point to end-point cryptography system for mobile and IoT (ECSMID) Jan, 2017, Jan, 2018 Non-Provisional 62448560**
- **Industrial Internet Encryption System 1.0 (IIES1) Apr, 2018 Provisional 62661765**

8.2 ADVANTAGES

Technical

1. It excludes irrelevant features which may not apply in Blockchain for emerging markets:

a. Mining cost of electric power

b. Centralization perpetuates third party

c. Trust management

2. To solve all issues a business may have:

a. Security

b. Privacy

c. Transparency

d. Scalability

3. To bring ubiquity on blockchain

A. Remove Latency problems

B. Remove Low throughput problems

C. Remove scalability problems

Core

a. Smart Contract

Here in, digital assets are directly controlled by automation or lines of codes via initial agreement, to perform certain functions particularly when triggered. The trigger points could be set by arbitrary rules or even LokChain™ -based "decentralized autonomous organizations" leveraging their association to affect these contract agreements.

b. Decentralized Application (Dapp)

This refers to removal of the control held by a central organization or location over applications. The ideas allow all to publish their unstoppable application absent a third party. Users should have control over the data they share on the network. Master ledger

is only a yardstick cloned by all nodes. Any node can update its ledger from another node's ledger content, provided the ledger is the most current.

c. Smart Transaction

Here in, every party in the ecosystem has agreed on a sales bound by 1. smart contract, 2. smart property. When the values agreed are transferred fully to smart satisfaction. We can say that a smart transaction has just been fully negotiated. The nodes involved completes the transaction from start to finish there is no need for mining here.

d. Quantum Immunity

The use of a high-level encryption (2048 Bits) mechanism that is immune to attack by quantum computing.

e. Smart Property

Here in, your physical (phone, house, Gold, diamond, car etc.,) and soft-assets (cloud-based machines, virtual money and shares in companies) can effectively be reduced to pieces of unique strings embedded with your biometrics; This will remove fraud and create an environment where trade is free absent fear or distrust. A smart property will bring about a smart contract and a smart transaction. None will be wary to buy a smart property from you. Trades that never would have taken place online will now be accepted conscientiously. People will have confidence in lieu of less trust when engaging in smart property sales.

f. IoT in the Chain

We are determined to solve the future problems arising from billions of internet nodes and devices remaining constantly online. Blockchain technology made this possible. We want to achieve the most unprecedented digital barter the world had ever experienced through a seamless end-point-to-endpoint cryptographic security. We thought it wise to secure what we have seen over the years, before any serious development. We used

secret key infrastructure (SKI) and many vital features of ours as a thread, binding the best of the three worlds:

8.3 PRODUCTS AND SERVICES

LokChain for the enterprise is an extreme performance initiative of the blockchain technology. It is designed from bottom up to provide independent, reliable development which absorbs the local insight from the emerging market. This is an option to the documented world because it will enable the emerging market to discover and access the necessities of life across the globe. The health, Legal, Pharmaceutical, Agriculture, Government, e-Commerce and Manufacturing are some of the business verticals that could possibly use this platform. LokCoin (LCN) is the default coin/token for this platform.

PRODUCT:

1. Lokchain Platforms
2. Lokchain Wallet Dapp
3. Lokchain Exchange
4. Lokchain Consulting Projects
5. Infrastructure Development
6. SKI – SDK for enterprise software, IoT and mobile integration
7. Lokchain IoT Wallet / Dashboard

SERVICES:

1. Smart License Plate signage and Tabs Payment
2. Wallet Application for Mobile/IoT
3. Dashboard for Tracking and Funding IoT
4. OTC Merchant Integration
5. Digital Data Nucleic Authority consulting
6. UN Refugee programs (No ID initiative)
7. AgroTech ecosystem
8. Asset Management (smart property)
9. Dapp (SDK/Framework support)

10. NanoTech ecosystem (Identity provision)
11. Wild-life tracking and protection
12. LCN Fleet Check/Card
13. Directing trading in commodity to support #7
14. LokChaining -Interconnection of blockchain, IoT and mobile consulting
15. Trucking Logistics Factoring

9.0 TOKENOMICS

One of the criteria for authentication of ICO is the transparency of funds distribution. We have identified some areas that requires our attention with reference to the use of the ICO funds.

Number Of Tokens:

The total number of tokens is derived from the market volume with direct attachment to ICOs catalyzed by tangible projects or services converted to utilities which anyone in world could buy. The system is pure and absent the fiat nature seen today in other ICOs. There is no limit or minimum requirements in this type of funds.

Token Supply Mechanism:

There is no capping mechanism: This removes the fiat nature as seen in other crypto-events of notoriety. The market is to obey and respect both natural and economic principles that guide all exercises in the marketplace. The market volume and the incumbent currency will always decide the fate of the tokens.

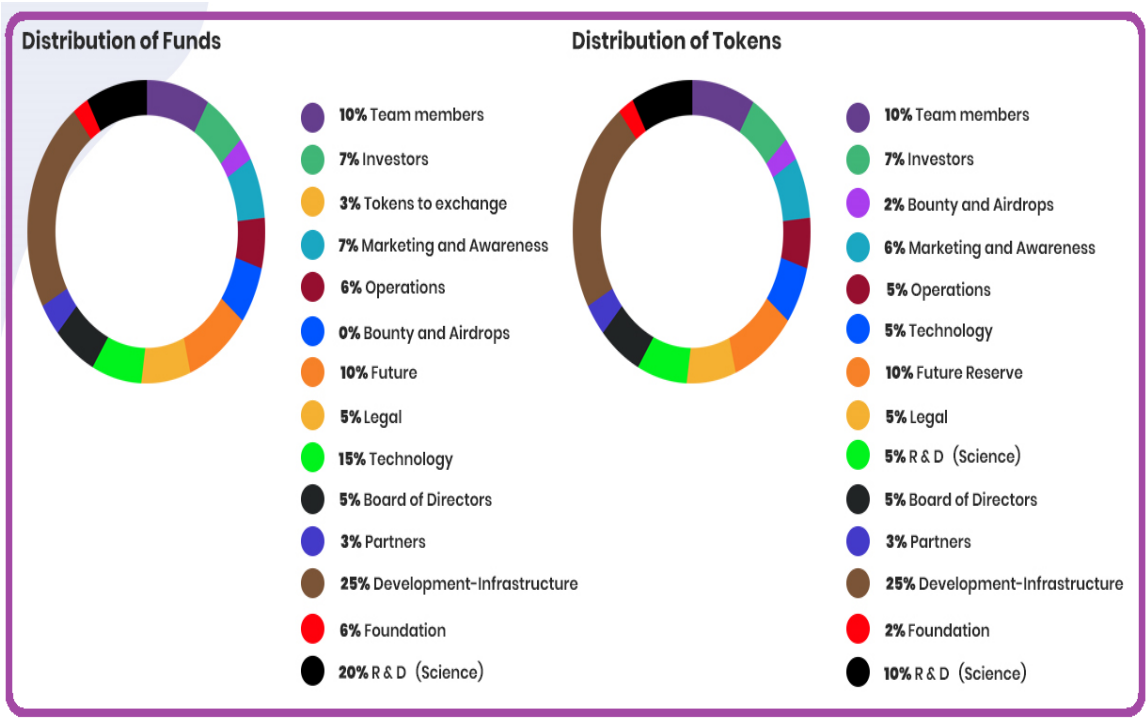
Distribution Of Tokens:

The distribution of token must be like the flow of water: Always finding its own level and continuously transforming with temperature, pressure, volume and gravity. The distribution will not have an inkling of the human greed within its blueprint. To include other platform, organization and data source. It is necessary for us to expose and share our profile Secret Key Infrastructure (SKI).

Ecosystem For Startups:

We will create a foundation to foster desirable startups by using Lokchain to hasten cross-platform, cross-organization and cross-data source. Angel investing will be in place to support those who are desirable.

9.1 FUNDS UTILIZATION OR DISTRIBUTION



9.2 TOKEN BREAK DOWN

Token Name: LokCoin

Token Symbol: (LCN)

Market Cap: 899, 999, 999 USD

Available Supply: 8,999,999 LCN

Total Supply: 8,999,999 LCN

Initial supply: 899,999 LCN

Soft Reach: 15,000USD

Hard Reach: 8,999,999LCN

Divisibility: 6

Mutable supply: True

Transferable: True

Fee type: Percentile

Levy: 0.1% of LCN

Token value is very important to us. As you can see below we have put together a formula for you to do the mathematics of lokchain tokens without influencing the market or misinterpreting the numbers.

FORMULA TOKEN VALUE CALCULATION:

- Average Value of ICO_n = Amount in USD / Number of contributors
  % Real Asset $Realized_n$ = Amount in USD / Total cost of Real Asset

Token value (TV_n)= Average Value of ICO * % Real asset realized,
where n = level of ICO. If n= 5; Token value (TV_n)= TV_{n-4} + TV_{n-3} + TV_{n-2} + TV_{n-1} + TV_n

Num Token in $ICO_{n=1}$ = individual amt in $ICO_{n=1}$ / Token $Value_{n=1}$
[Sum Token ICO_n = Num Token in ICO_n]
Sum Token $ICO_{n=1}$ = Num Token in $ICO_{n=1}$

Num Token in $ICO_{n=2}$ = individual amt in $ICO_{n=2}$ / Token $Value_{n=2}$
[Sum Token ICO_n = Num Token in ICO_n + Num Token in ICO_n]
Sum Token $ICO_{n=2}$ = Num Token in $ICO_{n=1}$ + Num Token in $ICO_{n=2}$
Sum Token $ICO_{n=2}$ @ $TV_{n=2}$
Sum Token $ICO_{n=2}$ * $TV_{n=2}$= Cummulative $ICO_{n=2}$

Num Token in $ICO_{n=3}$ = individual amt in $ICO_{n=3}$ / Token $Value_{n=3}$
Sum Token $ICO_{n=3}$ = Num Token in $ICO_{n=1}$ + Num Token in $ICO_{n=2}$ + Num Token in $ICO_{n=2}$
[Sum Token ICO_n @ TV= Cummulative ICO_n]
Sum Token $ICO_{n=3}$ * $TV_{n=3}$= Cummulative $ICO_{n=3}$

CALCULATION OF THE YIELD FOR THE ICO:

Calculate the yield of the ICO contribution for an Utopian mammoth infrastructure. Infrastructure development Project (Innovation workshop) at total cost $400M reference SAFT framework in favor of utilities/equity token, else DATE and RATE?

There are three other parameters that could derived here 1. Percentage of Real asset realized per ICO event 2. Token Value per ICO event 3. Yield and percentage increase 4. Average of the ICO per event.

Note: This type of project is priced at $3000/sq-ft in most developed countries. Let's say a user bought utility tokens in the three ICO events shown below -> $100, 50, 1000. The were credited respectively. ***Real asset is $400M for the development of innovation hub for transportation.***

First ICO: Number of contributors 500,000; Amount in USD 50M

Second ICO: Number of contributors 200,000; Amount in USD 50M

Third ICO: Number of contributors 300,000; Amount in USD 100M

SOLUTION

First ICO

- Average Value of ICO_n = Amount in USD / Number of contributions
  Average Value of ICO_1 = 50M/500000 = **$100/contributions**

  % Real Asset Realized$_n$ = Amount in USD / Total cost of Real Asset

  = 50M /400M = $0.125

Token value (TV_n)= Average Value of ICO * % Real asset realized,
=100 * 0.125 = **$12.50/contributions**
where n = level of ICO. If n= 3;
Token value (TV_n) = TV_{n-4} + TV_{n-3} + TV_{n-2} + TV_{n-1} + TV_n
[say an individual bought in $100 utility of this project at level n=1:]
Num Token in $ICO_{n=1}$ = individual amt in $ICO_{n=1}$ / Token $Value_{n=1}$
= 100 / 12.50 = **8 LCN**

[Sum Token ICO_n = Num Token in ICO_n] This is the cumulative none applicable here.

Second ICO

- Average Value of ICO_n = Amount in USD / Number of contributions
  Average Value of ICO_1 = 50M/200000 = $250

% Real Asset Realized$_n$ = Amount in USD / Total cost of Real Asset - Amount relized

= 50M /350M = 0.143 ->**(400M-50M)**

Token value (TV$_n$)= Average Value of ICO * % Real asset realized,
=250 * 0.143 = $35.75/contributions
where n = level of ICO. If n= 2; Token value (TV$_n$)= TV$_{n-4}$ + TV $_{n-3}$ + TV $_{n-2}$ + TV $_{n-1}$ + TV$_n$
[say an individual bought in $50 utility of this project at level n=2:]

Num Token in ICO$_{n=2}$ = individual amt in ICO$_{n=2}$ / Token Value$_{n=2}$
= 50 / 35.75 = **1.4 LC**
[Sum Token ICO$_n$ = Num Token in ICO$_{n=1}$ + Num Token in ICO$_{n=2}$]
Sum Token ICO$_{n=2}$ = 8 + 1.4 = 9.4 LC
Sum Token ICO$_{n=2}$ @ TV$_{n=2}$, THEREFORE;
[Sum Token ICO$_n$ @ TV= Cummulative Val ICO$_n$]
Sum Token ICO$_{n=2}$ * TV$_{n=2}$= Cummulative Val ICO$_{n=2}$ = 9.6 * 35.75 = **$343.2**

Third ICO

- Average Value of ICO$_n$ = Amount in USD / Number of contributors
  Average Value of ICO$_3$ = 100M/300000 = $333.3

  % Real Asset Realized$_n$ = Amount in USD / Total cost of Real Asset

% Real Asset Realized$_{n=3}$ = 100M /300M = 0.33-> (**400M-100M)**

Token value (TV$_{n=3}$) = Average Value of ICO * % Real asset realized,
=333.33 * 0.33 = $111.11/contributors
where n = level of ICO. If n= 3; Token value (TV$_n$)= ..TV$_{n-4}$ + TV $_{n-3}$ + TV $_{n-2}$ + TV $_{n-1}$ + TV$_n$
[say Same individual bought in $1000 utility of this project at level n=3]

Num Token in ICO$_{n=3}$ = individual amt in ICO$_{n=3}$ / Token Value$_{n=3}$
= $1000/111.11 = **9.00 LC**
Sum Token ICO$_{n=3}$ = Num Token in ICO$_{n=1}$ + Num Token in ICO$_{n=2}$ + Num Token in ICO$_{n=3}$
= 8 + 1.4 + 9 = 18.4 LCN. THEREFORE;
[Sum Token ICO$_n$ @ TV= Cummulative Val ICO$_n$]
Sum Token ICO$_{n=3}$ * TV$_{n=3}$= Cummulative Val ICO$_{n=3}$ = 18.4*111.11 = **$2044.42**

user contributed $1150 The yield is seen below:

2044.42 / 1150 *100 = **178% (which is 78% increase**.)

If a =$1150
b=$1799.93
b-a =649.93 = $650
% increase a = 100/a * (b-a) = 100/1150 * (2044.42-1150) = 78%

10. ICO PRE/PUBLIC SALES

We announced the date for the ICO and TGE Presale or Private round below. Qualified Investors can contribute in USD; their local fiat currencies and cryptocurrencies. Token price will be fixed in LCN. However, XEM or ETH or BTC or BCH are acceptable since the value of Token will be derived after the Public rounds.

Details of ICO Presale

Start date: 15th of December. 2018 Time: 12:00 AM EST, 9PM PST, 3AM UTC-2

End date: 13th of February 2019

Token ticker: LokCoin (LCN)

Total supply: 8, 999,999

Price: 1 LCN = TBA after Public Rounds ICO

Minimum contribution: $500

Bonus: $5000+ 20% discount

$1000, 2.5% discount

$2000, 5% discount

$3000, 10% discount

$4000, 15% discount

LokChain PUBLIC ROUND

We announced the date for the Public round of our ICO and Token Generation Event (TGE) below. We have also revised our coin or token economics (coinomics), thereby provide more room for growth in our community of supporters and funders. Token price will be fixed in LCN. However, XEM or ETH or BTC or BCH are acceptable.

Details of Public Round

Start date: 14th of February. 2019 Time: 12:00 AM EST, 9PM PST, 3AM UTC-2

End date: 12th of May 2019

Token: LokCoin (LCN)

Total supply: 8, 999,999

Price: 1 LCN = TBA after Public Rounds ICO

Week starting 13th of Feb 2019: 15%

Week starting 12 of March 2019: 12.5%

Week starting 12 of April 2019 10%

Ends on May 13 2019.

Total Project Cost (Platform/Data center): $650M

Minimum contribution: 700 XEM, 0.45ETH, 0.01235BTC, 0.2617BCH

Maximum contribution: TBA prior to start date

ICO Contact and Crypto Accounts:

XEM: NBR53Q-O3XQ5N-6TQ6A2-KJPU3V-T5W3JA-53JJPF-NRJS
ETH: 0xc4d1A8a0ee2751ba16b0eca75Be676e1Fe97C810
BTC: 1K7e6S2PkhewAM3TvCEiZXUXHuXUsAgKXN
BCH: qrrt8w27g6v9mve08enzqqu2hs7549v9dqndm6zwsr

Telegram Group Chat: Here

Twitter

Reddit

Linkedin

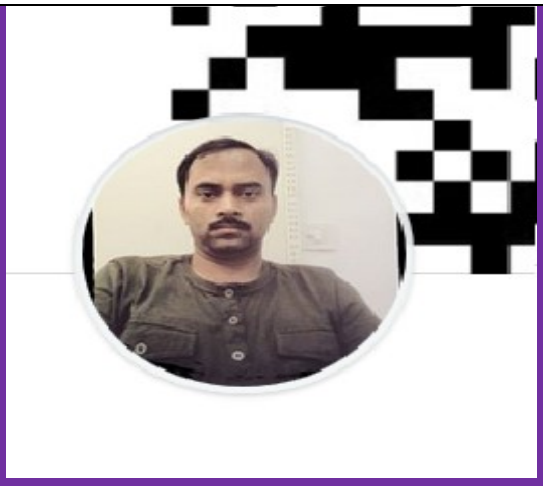
Facebook

Instagram

Bitcointalk

Youtube

11.0 TEAM MEMBERS



Ravi Prakash (Director/Co-Founder)

15+ Years software Engineer, Software developer for fortune 500 (Telecom, Media Service)

Noble Anumbe

PhD Engineering (PMP) USC, Columbia

Blockchain and newer innovation instructor

Ashok Rathod (MD and partner)

Blockchain Development | ISO 9001-2015 Certified

20+ years in IT, 10+ as a software Engineer

Blockchain ERC20 and Dapp Specialist

Josiah J. Umezurike 21+ years IT/ InfoSec warrior, Blockchain developer (CBP), Fortune 500 consultant, mobile/IoT developer, Inventor, deep knowledge of engineering problem and solutions.		
		
Hitesh Solanki (Tech Lead) 10+ years software development and engineering, Blockchain expert (ERC20), cryptocurrency exchange specialist.	**Onyedikachi Barnabas** **(Regional Ambassador WA)** Serial Crypto Investor, Community builder, Influencer and Entrepreneur	

FAQ

How do I figure out a good ICO to invest in?

Should I concern myself with FUD, HODL and FOMO in Lokchain ICO event and for all other cryptocurrencies?

Figuring out a good ICO or TGE is very difficult nowadays. Most ICOs are based on hype, sensation and emotions. Consequently, we have new acronyms to celebrate and represent these problems in the likes of the lingos above. These lingos are no criteria for technical development. Risk and the willingness to try something new are the greatest factors in consideration.

Users and Developers

If you are someone that can read and understand codes like a developer: It's advisable to look at the Github files (if available) of the altcoin for code review. That's if you are worried about code security and best practices. If you are not a developer some of the following points will still apply to you. Our special advice to you before engaging in any cryptocurrency event is very clear. One must consider the valuations that could keep those negative lingos and feelings at bay:

1. Is the ICO or TGE directly based on other known platforms (mine-able or non-mine-able)? -->Checked
2. If no direct connection exists. What problems are they solving to make it relevant. -->Checked
   (I mean in the spirit of Satoshi's paper)
3. How is the security laid out and how are they implementing security controls? -->Checked
4. If it is a new platform what makes it different and innovative? -->Checked
5. If it is not a foundation how are they making money or going to make money? ->Checked
6. What is the business model or plan? -->Checked
7. What value do they bring to the users from the users for the user and the developers? -->Checked
8. Are they building any useful product or just waiting to cause an economic burst? -->Checked
9. How are the token to fiat value derived? -->Checked
10. You must make sure there is a whitepaper (peer reviewed) and an infrastructural or developmental project to come out of the platform as a starter. -->Checked
11. Look into the market capitalization and initial supply of coin or token for the altcoin in question. -->Checked

12. Beware of altcoins who set initial coin offering equal to the market capitalization. -->Checked

13. Read their token economics and figure out how they plan to get to market capitalization from the initial supply of coin or token. -->Checked

14. How did they come up with their coin or token value? -->Checked

Summary:

In the end we all want to be a part of the technology that helps Paulo in Sao Paulo, Brazil. If the new altcoin or platform can do this hard task, then we won't be betting our money on nothing. If you carefully check on these pointers you can hardly lose your money. Cryptocurrency investment is not a rat poison. However, you must be careful just like you do in everything else requiring attention.

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