



Hydrus7

Whitepaper

(Beta Version)

Foreward

Hydrus7 Labs Limited is the name given to the fourth-generation blockchain introduced by the parent company JD COIN.

The purpose of launching Hydrus7 (Blockchain 4.0) is to address the problems of all previous generations and storming the world of blockchain with revolutionary advancements in technology. The term Hydrus7 is given as it is inspired from the cosmos, linking it to the world to numerous possibilities for blockchain technology in coming future. The world is witnessing a much-needed changeover from physical to digital transformation due to blockchain technology and there is rapid adoption in the various fields such as Banking, Insurance, Supply management, Real Estate, Energy, Healthcare, etc. in recent years. It is the time that we are ready to introduce solutions with blockchain for our day to day needs for the real-world problems with our fourth generation blockchain.

Seven is a very attractive and fascinating number and it symbolizes completeness and perfection (both physical and spiritual). Historically, the number 7 has played a significant role in society, culture, religion, and even psychology. There are 7 continents in the world, 7 wonders of the world, 7 seas, 7 heavens, 7 angels, 7 stars etc. it gives a feeling of completeness and satisfaction to everything.

The purpose of launching Hydrus7 (Blockchain 4.0) is to address the problems of all previous generations and storming the world of blockchain with revolutionary advancements in technology.

The color of the logo indicates the IT (Information Technology) and future of digital economy. Blue color represents the trust, dependability and strength.

The heptagon for H7 is chosen as the seven sides and corners represents the qualities and features of this new generation of blockchain technology.

The Hydrus7 logo represents our vision and mission towards global visibility, prominence and reliability.

The font used is DejaVu Sans (FONTS) and the typography has been selected to be simple and therefore not compete with the icon.

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Blockchain Introduction

Blockchain was introduced to this world by the emergence of Bitcoin in 2009 to this world. It is a system of recording information in a way that it records the transaction taking place and it makes it difficult or impossible to change, hack, or cheat the system. Blockchain is famously known as a distributed ledger of transactions that is duplicated and distributed across a network of computer systems on the blockchain. Each block in the chain contains a number of transactions, and every time a new transaction occurs on the blockchain, a record of that transaction is added to every participant's ledger. The decentralized database managed by multiple participants is known as Distributed Ledger Technology (DLT). Blockchain is a type of DLT in which transactions are recorded with an immutable cryptographic signature called a hash. Ever since Bitcoin was introduced many new generation coins have emerged and have been solving many problems, issues faced by the cryptocurrencies leading new generation Blockchains leading to better security, speed and other benefits.



Blockchain 4.0 Introduction

Blockchain with all its promises like Immutable Data, Anonymity & Privacy, Security, Lower Cost of Transaction, and Digital Freedom has grown from just a being too for digital currency to becoming integral to Smart Contracts, DAOs to fast transaction verifications. During this transition from the first-generation Blockchain to its recent 3rd Generation Blockchain, the technology has also gathered some problems on its way. Mining is the biggest challenge as this is costing us huge energy.

Other issues such as centralized situations through mining pools, to issues with interoperability among the chains, are also problems that need attention. Besides the large size of ledgers and unusable parallel chains are not scalable beyond a point. As all these problems grew and have forced the need to develop 4th Generation Blockchain.

Blockchain 4.0 is poised to solve the above issues in a more structured & scalable manner with the help of AI, ML, Data Compression, Sharding, and many other advanced technologies. These technological advances will lead to better and faster interchain data exchange, which was not possible so far, thus also helping in instant verification of transactions. The capabilities like Atomic Swaps, Stable Side Chains with an easy mechanism to add transaction nodes, and the ability to add multilayered consensus algorithms, will lead to a robust, secure, fast, and intelligent Blockchain.

Another important element which needs improvement is the software efficiency. In order to do this, we need stronger algorithms that reduce duplicity of data. In addition to the reduction of duplicity, it is also imperative that for the system to remain truly decentralized the involvement of the community as part of maintaining data and approving transactions need to gain more importance. In fact, every node in the network keeps a copy of all the transactions so that they can validate any new transactions easily and quickly.

As transactions increase and volume goes up and the chains[ledgers] become very large and storage hungry, this demands an ever-increasing computing power. One way to achieve this is to keep adding a huge number of nodes in the network. However, adding more hardware will not remain practical for long, therefore there will be a point where we will need to explore alternates, and hence, innovative software solutions would be the way. Besides the advantage of the software solution approach is that they are easy to roll out and we can potentially leverage the existing computing power of hardware devices (IoT/others) which may be lying idle.

Therefore, we would visit three important aspects here as below;

1. Exploring the use of always-on devices as nodes, which earn for themselves.
2. Multi-layered Hybrid Consensus Algorithms.
3. Use Cases Scenarios for common man and DeFi applications.

Exploring the Use Always n Connected Devices as Nodes

The importance of nodes is that they keep a copy of transactions so that new transactions can be easily and quickly validated. Therefore, to address the challenges of scale and quick verification, it is important that the nodes have the ability to do off-chain transactions. In order to achieve this, we are going to need trillions of Micro and Nano node packages of android, iOS, and other IoT/RTOS running devices. This will mean that every possible mobile phone, Smart TV, Digital Signage Device, an ISP Routers/Switches, and other IoT devices will be able to participate as nodes.

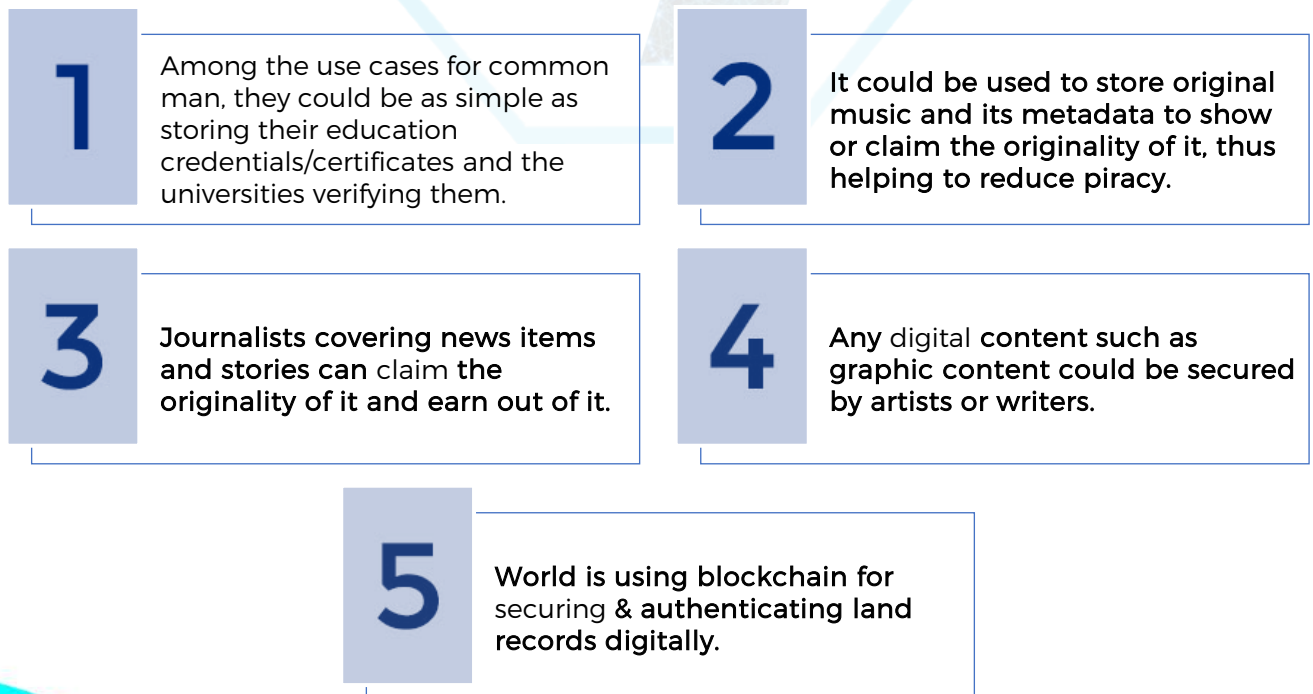
As we know many of these devices are always-ON and thus are connected to the Internet and they have a lot of idle time and that idle moment their CPU power that can be **utilized in exchange for a fee**. A digital metering of the same can also be explored through software applications to reward the participating nodes. Therefore, capitalizing on this large idle computational power without investing in additional hardware resources would help to fill the demand for computing blockchains thus offering a win-win to community and device owners (people/companies). By utilizing these always-ON devices the number of nodes will go up substantially and the need for running dedicated nodes will come down, thereby it can be expected that the high transaction and network fees will also come down drastically.

Multi-Layered Hybrid Consensus Algorithms

A crucial component of any blockchain system is its underlying consensus algorithm, which in many ways, determines its performance and security. Therefore, to address the limitations of different blockchain systems, several existing as well novel consensus algorithms have been introduced. Multi-layered consensus algorithms such as a combination of Proof of Stake and Proof of History or Proof of Reputation etc. will help in providing solutions for varied application scenarios with an ability to run in a small footprint on devices.

As we are moving away from mining and its associated costs, new consensus algorithms are focusing on the last mile use case and reducing transaction fees, while increasing the focus on security. In the long run depending upon the nature of the transaction the digital contracts can have a choice of consensus algorithms they want to opt, for their own specific needs.

Use Cases Scenarios for Common man and DeFi applications.



With the capability of atomic swaps and off-chain capability growing many DeFi applications, like Peer-to-Peer Lending & Borrowing, Decentralized Exchanges, Derivatives, Margin Trading and Insurance are very much possible with high integrity and lower transaction costs.

In the context of next-generation Blockchain 4.0, this article discussed the three core aspects of ecosystem;

1

Exploring the Use Always-On Connected Devices as Nodes

2

Multi-Layered Hybrid Consensus Algorithms

3

Use cases Scenarios for Common man and DeFi applications.

Hydrus7 Smart Contract Systems

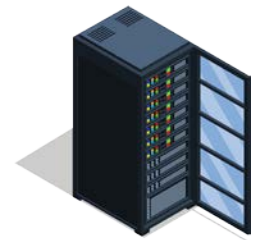
The Hydrus7 Smart Contract system is the greatest feature that seamlessly integrates to the existing developer ecosystem. Developers can do the smart contract development, debugging and compilation from their own IDE and already known languages like Java and Javascript. The smart contract system will allow developers around the world to quickly carry out the development of smart contracts.

Application and Ecosystem

Developer ecosystem is the vitality of the open source community. In order to achieve the goal of an intelligent economic network, Hydrus7 team will be committed to the development of its ecosystem, providing mature development tools, improving development of documents, organizing education and training activities, and providing financial support. We plan to support the following applications and ecology and to reward improvements to the design of the experience:

Full Node

- A fully functioning Full node PC program
- Web / Android / iOS clients that do not need to synchronize with the blockchain



Blockchain Explorer

SDK Development Kit

- Support Java / Kotlin, .NET C # / JavaScript / Typescript,

Smart Contract Compiler and IDE Plugin

- C# / VB.Net / Visual Studio
- Java / Kotlin, Eclipse
- C / C++
- JavaScript / TypeScript

About Hydrus7 Core Consensus Algorithm

Hydrus7 Core utilizes the advanced consensus algorithm proven capable of meeting the high performance requirements of applications on the new generation blockchain, i.e.: Advanced Delegated Proof of Stake (ADPOS). In this Proof of Stake consensus system, each person who stakes or holds the tokens on the blockchain can participate in the approval voting process and get a chance to select two layer nodes which further validates the block and be rewarded for adding blocks to the Hydrus7 Blockchain. This ADPOS system is maintained by an election system for choosing nodes which verify blocks. These nodes are further called “**witnesses**” or “**block producers**”.

To simplify: Under this algorithm, those who hold tokens on a blockchain adopting the Hydrus7 Core software may select block producers through a continuous approval voting system. Anyone may choose to participate in block production and will be given an opportunity to produce blocks, provided they can persuade token holders to vote for them.

Let's understand the voting process here.

For example: The Hydrus7 Core enables blocks to be produced exactly every 0.5 second and exactly one producer is authorized to produce a block at any given point in time. If the block is not produced at the scheduled time, then the block for that time slot is skipped. When one or more blocks are skipped, there is a 0.5 or more second gap in the blockchain. In Hydrus7 Core, blocks are produced in rounds of 126 (6 blocks each, times 21 producers). At the start of each round 21 unique block producers are chosen by preference of votes cast by token holders. The selected producers are scheduled in an order agreed upon by 15 or more producers.

If a block producer misses a block and has not produced any block by verifying a transaction within the last 24 hours they are removed from consideration until they notify the blockchain of their intention to start producing blocks again.

Also if the witness fails to verify all the transactions in the given time, and a block is missed, then all the transactions are left unverified and no reward is distributed to that witness. The reward is added up to the rewards for the next witness which verifies the block.

This ensures the network operates smoothly by minimizing the number of blocks missed by not scheduling producers who are proven to be unreliable.

Under normal conditions a ADPOS blockchain does not experience any forks because, rather than compete, the block producers cooperate to produce blocks. In the event there is a fork, consensus will automatically switch to the longest chain. This method works because the rate at which blocks are added to a blockchain fork is directly correlated to the percentage of block producers that share the same consensus. In other words, a blockchain fork with more producers on it will grow in length faster than one with fewer producers, because the fork with more producers will experience fewer missed blocks.

Furthermore, no block producer should be producing blocks on two forks at the same time. A block producer caught doing this will likely be voted out. Cryptographic evidence of such double-production may also be used to automatically remove abusers.

Byzantine Fault Tolerance is added to traditional DPOS by allowing all producers to sign all blocks so long as no producer signs two blocks with the same timestamp or the same block height. Once 15 producers have signed a block the block is deemed irreversible. Any byzantine producer would have to generate cryptographic evidence of their treason by signing two blocks with the same timestamp or blockheight. Under this model an irreversible consensus should be reachable within 1 second.

Decentralized Applications that are possible with Hydrus7.

- Prediction market
- Advertising market
- Automated tokens liquidity providers
- Decentralized exchange
- Smart fund
- AI-assisted legal smart contract
- Social networking
- Secure communication protocol
- Data exchange market
- Intellectual property trading market

Note: Full Technology details will be revealed in Hydrus7 Whitepaper Version 1.0 on April 28th, 2021.



DTx (Digital Therapeutic Devices)

Hydrus7 Labs has formed technical partnership with Europe based Digital Healthcare company named Epillo Health Systems based in Europe, having Patent-pending innovations in 153 countries through the United States Patent & Trademark Office (USPTO) and 27 countries of the European Union (EU) through the European Patent Office (EPO). Epillo is working to transform the Digital Healthcare technology landscape by incorporating the best of Artificial Intelligence, Machine learning, and Blockchain in Digital Healthcare.

Digital Therapeutics (DTx) are patient-facing software applications that help patients treat, prevent, or manage a disease and that have a proven clinical benefit. For example, Digital Therapeutics can support patients in self-managing symptoms, adding benefits to their current therapies and thereby improve their quality of life and other clinical endpoints.

Digital Therapeutics (DTx) is medical software that can be prescribed by doctors to help patients treat, predict, prevent, or manage a disease, illness, or a symptom, and have clinical-grade benefits.

Epillo's DTx is AN INNOVATION TO COMBAT MILLIONS OF UNREPORTED DRUG-FOOD AND DRUG-DRUG INTERACTIONS IN UNSUPERVISED HOME AND OUTDOOR SETTINGS (NON-CLINICAL SETTINGS)

Epillo's DTx (based on its patent-pending innovations) monitor, predicts, manages, and prevents in real-time:

- Drug-Food constituent interactions
- Drug-Drug constituent interactions



Through a patient-facing mobile application and a set of clinical tools for Clinicians to monitor and analyze Interaction and Pharmacological (Pharmacokinetic and Pharmacodynamic) profile change data of drugs in the cases of co-administration of drug-food constituents and drug-drug constituents.

There are undesirable pharmacological effects in a consumer of prescription drugs that are often triggered by the drug interactions either amongst themselves or with the food that the patient intakes. Also, the effects of any drugs can be slowed down by the consumption of specific foods that block or change their absorption capacities i.e.: Change in Pharmacokinetic or Pharmacodynamic profile of a drug. A drug is administered to efficiently provide medical aid, However, this efficacy can be altered when such drug is co-administered with another drug or consumed together with certain food components. It is estimated that approximately 48% to 50% of the European, as well as the American population, are already under medical supervision or a clinical prescription for some of the other medical ailments or health concerns, giving Epillo's Blockchain-based DTx a wider user base than any other Digital Healthcare Technology.



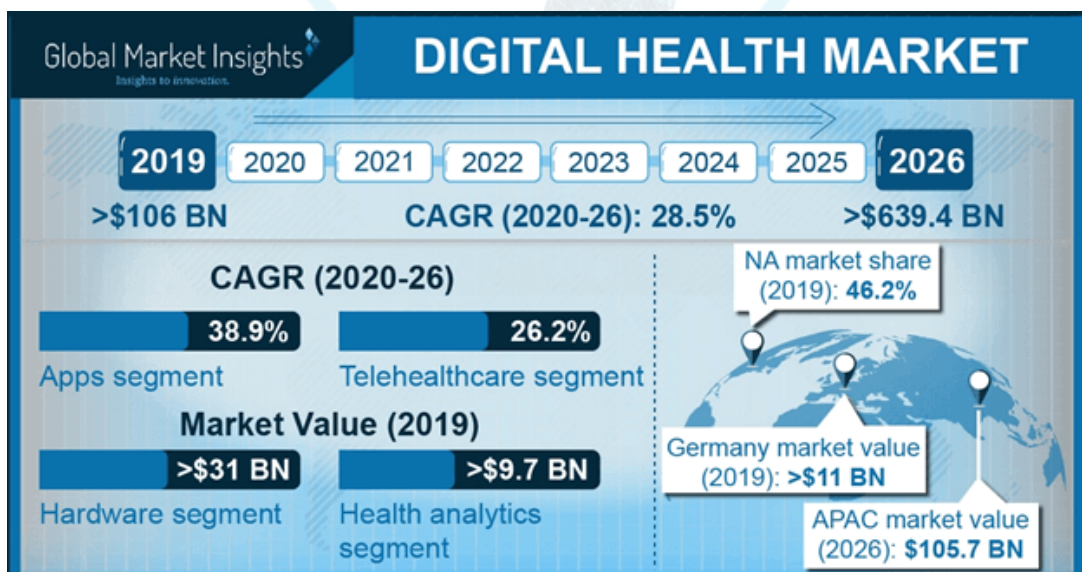
DRUG-FOOD



DRUG-DRUG

Focusing on Aiding Millions around the world, The Potential Market user base of Epillo's set of Blockchain-based Digital Therapeutic Devices (DTx) is projected to reach potential 160 MN people on regular therapeutic Prescription drugs in the USA (48.4 % of the total population of the USA, Source: U.S Department of Health and Human Service) and 217 Million people on regular therapeutic prescription drugs in Europe (48.6 % of the total population of Europe, Source: Eurostat), totaling 377 MN users in Europe and the USA alone, and it's allied clinical solutions reaching potential 950,000 clinicians in the USA and potential 1.7 Million clinicians in Europe, totaling 2.65 Million Clinicians in Europe and the USA alone.

Epillo's Digital Therapeutic Devices (DTx) and its mobile application can be used by people on regular or frequent prescriptions. These devices may enhance the patient's current therapy while creating clinical data points for the doctor/healthcare provider. Hence it can enhance the benefit of the drug by alarming, informing, or alerting certain food items through its easy features and by warning of serious food-drug and drug-drug interactions and can align or manage a user's food patterns. Digital Therapeutic Devices (DTx) web based application beta version will be launched in the month of **May 2021**.



Source: Digital Health Market Share Trends 2020-2026 Growth Report

Shōrai Komāsu

Shōrai Komāsu is a DeFi (decentralized finance) based application which will bring Lender, Borrower, and underwriter in one single roof.

DeFi refers to financial services using smart

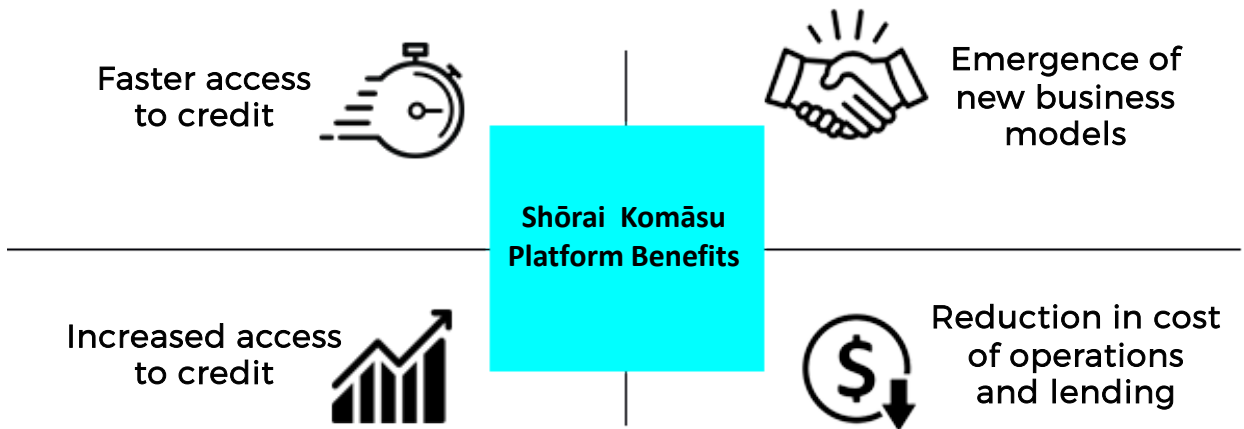
contracts, which are mainly automated enforceable agreements that don't need intermediaries centralized authorities like a bank or lawyer and use online blockchain technology to execute and perform its intended activities. DeFi is the next step in the revolution in disruptive financial technology.

Get Micro/Nano Loans approved and cash into your account in minutes, right in the middle of the night. No Geographical boundaries, No banks involved a borrower can be in Hongkong and Lender can be in NewYork. While the underwriter can be in Tokyo.

Calculate your risk and returns before you lend, set your preferences and the platform will do the rest, while you rest!



Shōrai Komāsu Platform Benefits

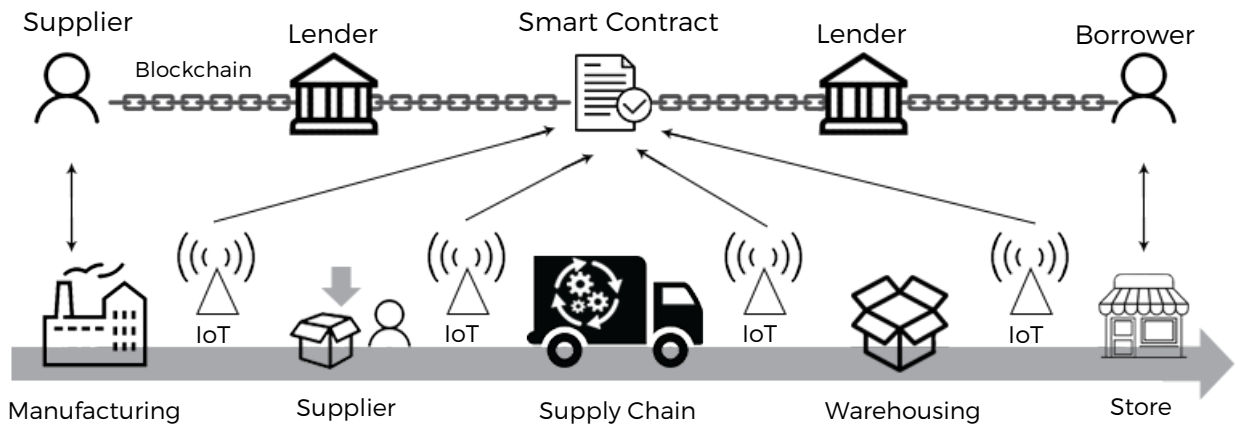


Sample Shorai Komasu Contract Flow

Blockchain-based platform to bring all the stakeholders under one roof by use of complex AI algorithms. Lenders can follow the usage of funds. Release of funds based on smart contracts and proper preset usage [Contract Parameters].

Have complex contract parameters that suit your risk averseness and required returns while borrowers pick it up based on their needs, like urgency, interest amount, and ability to pay back in time.

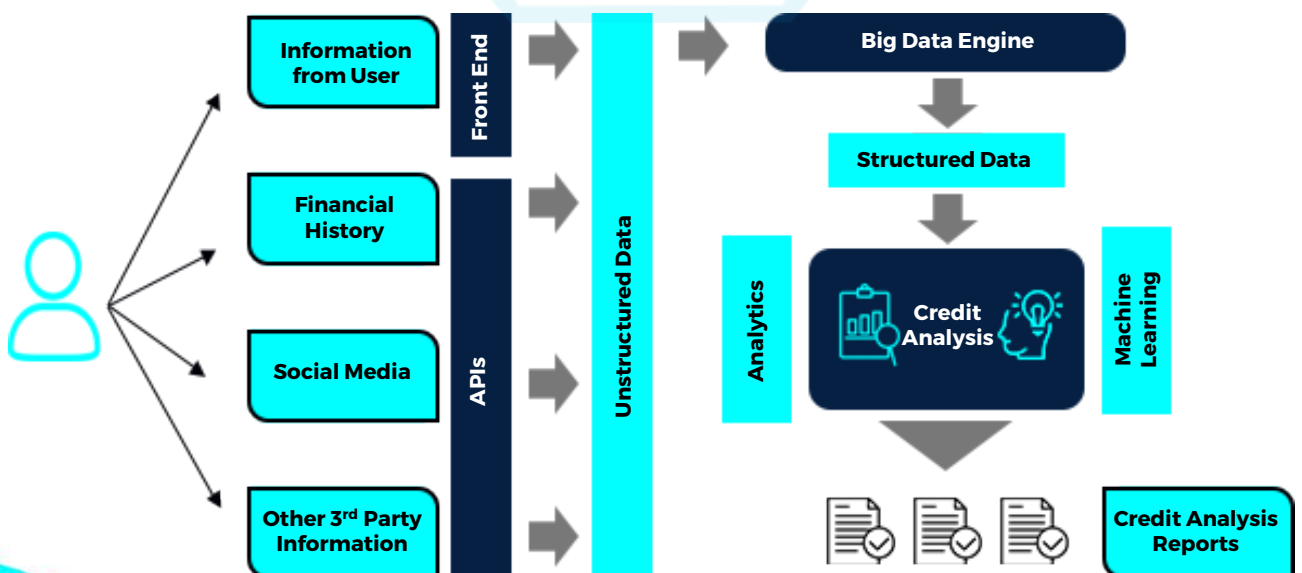
Underwriters and Lenders can set their own risk aversion parameters, lending criteria, and business preferences. AI Engine would consider these user-set parameters and 100's of other factors to make a decision on a given P2P (Peer-to-Peer) loan request.

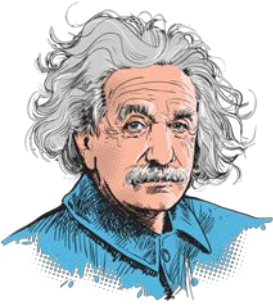


Risk Analysis Process Flow

Our complex risk analysis process which uses hundreds of parameters will analyze each contract and assign a risk score to it. This will help the lender to gauge his rewards based on the risk. If the borrower keeps up his promise, he will be rewarded with points and coins and will help him to secure more loans.

In conclusion, this platform Shōrai Komāsu will shape the future of commerce and bring a revolution in Money Markets.





GNP Technology

GNP WE BELIEVE IS THE WORLDS' MOST ADVANCED : CRYPTOGRAPHIC CYBER SECURITY ALGORITHM, WHICH SUPPORTS BOTH PASSIVE & ACTIVE FILE TYPES. ACTIVE FILES contain a payload which contains a suite of command protocols. **GNP is a | Symmetrical | Bidirectional | Imploder and Exploder | Duplexer | Sequencer GNP is a | Recursive Data Agnostic Algorithm [RDAA] which can `Implode` and `Explode` any Random Digital file into `One single GNP Floating Radix Script Character`.**

A NEW HYPERMATHEMATICAL INFORMATION SCIENCE :

GNP offers a new Algebraic Language for all algebraic functions : Multiplication, Addition, Subtraction, Division, Algorithm (MASDA) using macro equations inside multiple hyper dimensions.

GNP can Implode any digital data file and output one index. The index contains both [1] a multiple scale code number as well as [2] a multi-radix code number.

GNP MASDA can accept multiple files and ADD them all altogether into ONE equation by ADDING their INDICES together into ONE unique and small index-m which is reversible. The output index-m of this equation is smaller than the sum of the inputs as parts of the equation .

This equation is described as a GNP HYPER LOGARITHM.

GNP can embed and store random information files into unique superpositions onto a proprietary GNP GRID which remains in a hidden compartment and is externally inaccessible and embedded inside hyper dimensional grid time.

Scientifically speaking GNP conforms to the Five Postulates of non Euclidean Geometry by using Riemannian Manifold Matrices and GNP collects the indices as complex singularities and identities.

GNP Logarithm=> Integral of Index 1 + Index 2 + ... + IndexN

GNP Logarithm=> One small IndexM = FILE 1 + FILE 2 + ... FILEN

GNP Logarithm=> Reversible to extract FILE 1 & FILE 2 & ... FILEN

IndexM = smaller than the sum of input parts FILE 1 + FILE 2 + FILEN

GNP Hackathon

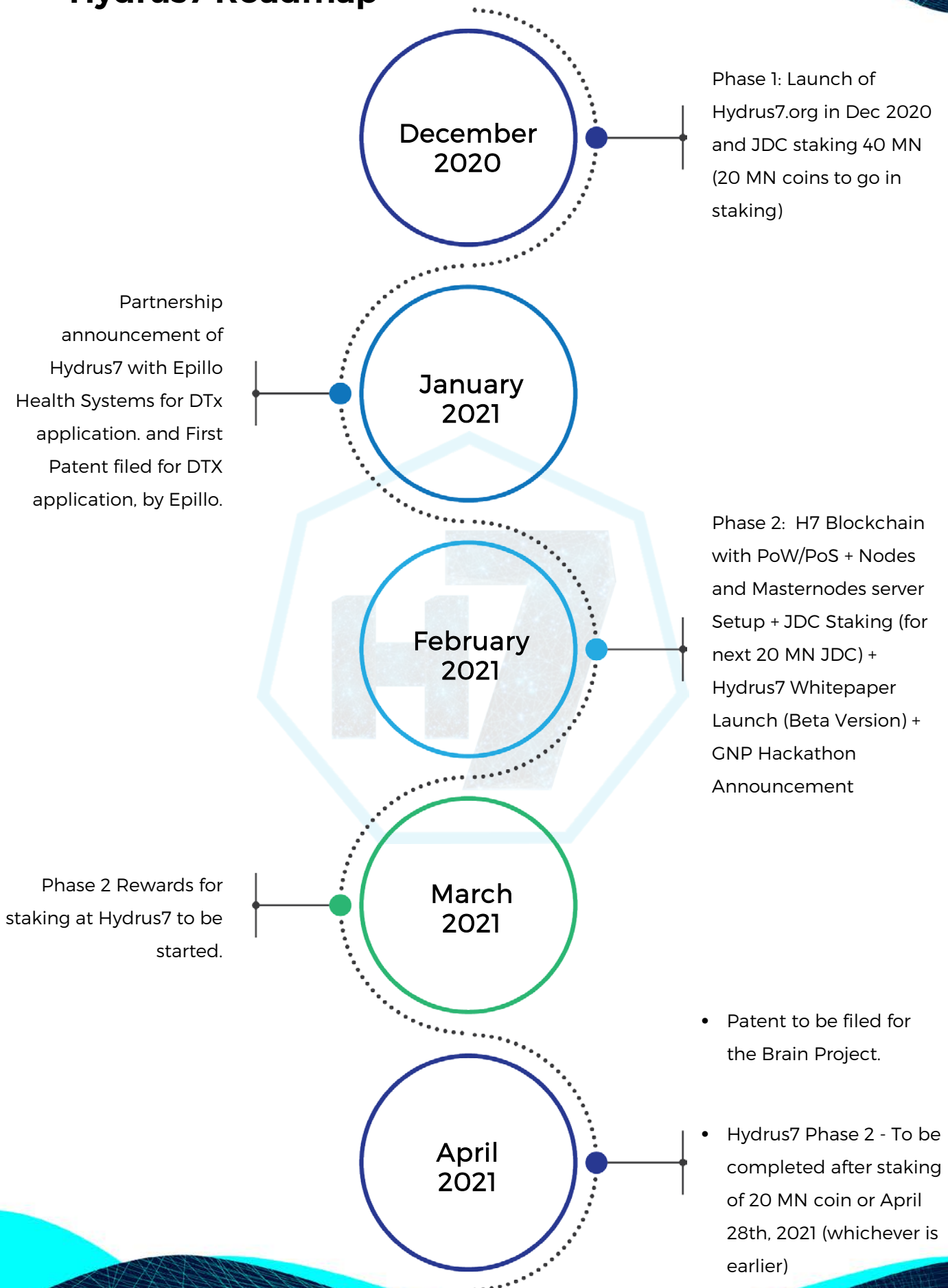
GNP Hackathon is a day event happening in Las Vegas in the month of August 2021 along with the launch of the GNP application – Protocol commissioning.

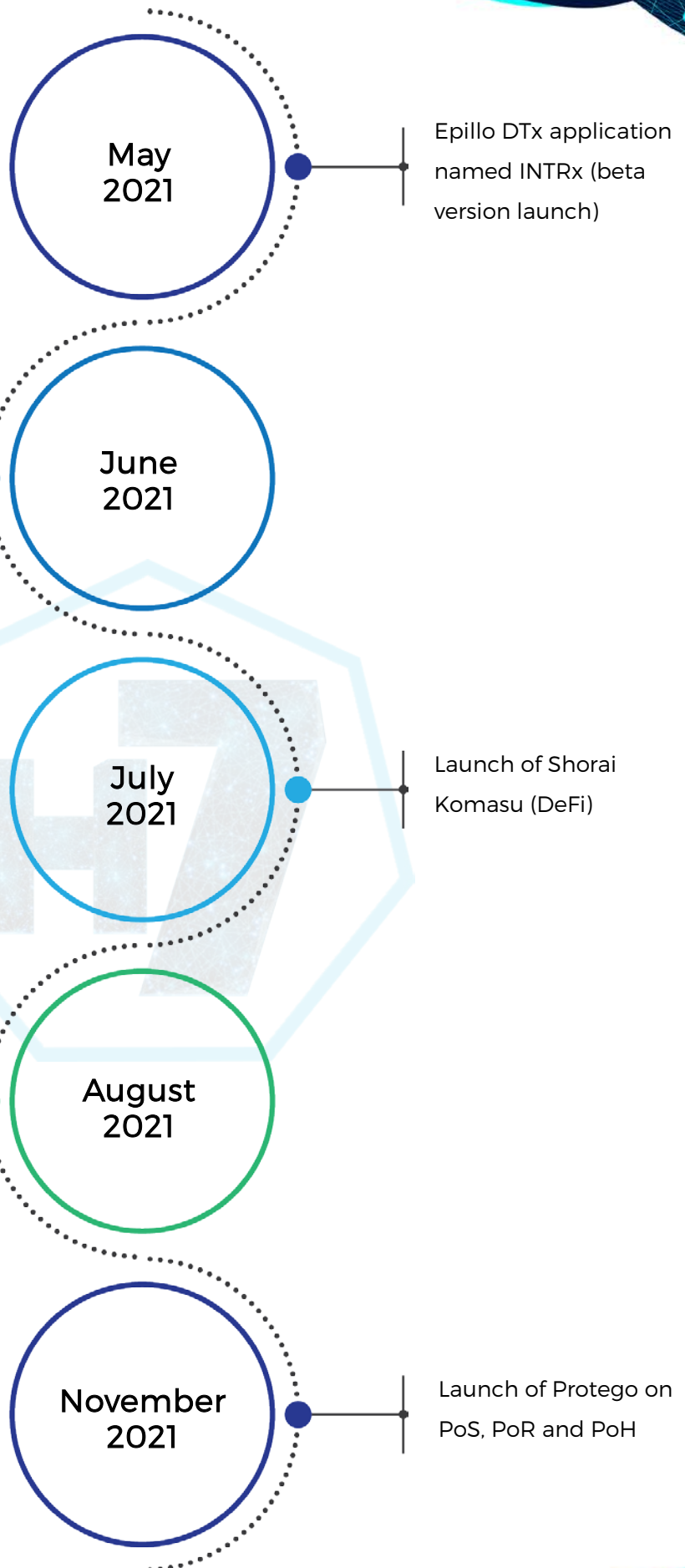
We will be inviting Hackathon developers for this event to register and participate in the Hackathon and will be selected on the basis of the required eligibility criteria.

- 1 Place: Las Vegas
- 2 August 2021
- 3 \$100k cash reward for the winner who could break the code/protocol ISP

www.hydrus7.org

Hydrus7 Roadmap







Hydrus7

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