The White Paper of SAN Blockchain Ecosystem

Part I The Background and Trend of Blockchain

On 31th Oct, 2008, Satoshi Nakamoto (satoshi@vishotmail.com) sent the first email through cryptography team (gmane. comp. encryption. general), and it published the white paper of bitcoin *Bitcoin: A Peer to Peer Electronic Cash System* at the first time, presenting any features of bitcoin network.

1. Double-spending is prevented with a peer-to-peer network.
2. No min or other trusted parties.
3. Participates can be anonymous.
4. New coins are made from Proof-of-work.
5. The proof-of-work for new coin generation also powers the network to prevent double-spending.

On 3rd Jan, 2009, the genesis block had been mined, and the first transfer transaction of bitcoin occurred at the 170th block (from Satoshi to Hal Finney, occurred on 12th Jan, 2009), therefore, bitcoin network as a peer to peer value exchange started new booming times, even if experiencing various kinds of crisis though that period, bitcoin network has achieved peer to peer payment network with about value 10 billion US dollars starting from scratch.

The appearance of peer to peer value transmission had its historical necessity, but Satoshi is the person who accelerate this historical process.

From the 1980s, the development of TCP/IP protocol, to the 1990s, the application of web browser and server, until nowadays, internet technology has changed data exchange modes and lives of human via different dimensionality and sides. The development of internet technology benefit by the perfection of infrastructure, ISH (Information Super Highway) at early phase and popularization of all kinds of intelligent terminals, constituting the basis of application infinite within OSI seven layers' model.

Within various kinds of internet protocols, we use more protocols of TCP/IP, HTTP, HTTPS, FTP, TELNET, SSH, SMTP, POP3, we have set up relatively perfect all kinds of internet services with the help of these protocols. After thinking deeply, we find that we cannot do the peer to peer value transmission without third parties before the appearance of bitcoin network. We don't lack one specific method, but lacking Value Super Highway which based on Information Super Highway and how to achieve Value Transfer Protocol of Value Super Highway, bitcoin is the first VTP (Value Transfer Protocol) protocol which is operated on Information Super Highway.

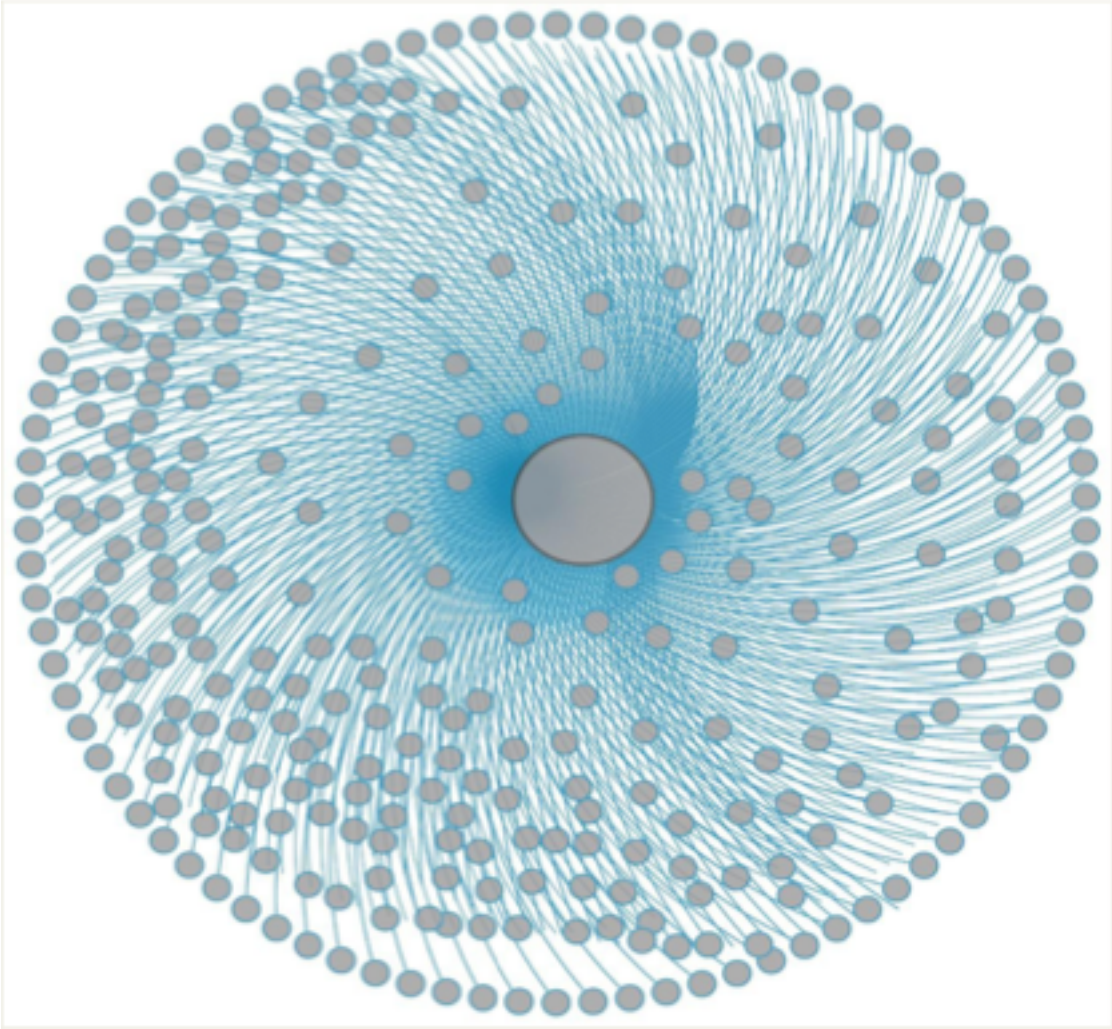
Along with the development connectivity technology (internet, IoT, VR/AR), the interactive approach of human and object, human and information is more various, more entities have been Digitalized, Tokenized and Symbolized, properties of entities are mapped and segmented when entities are Digitalized and Symbolized. A question is faced with us, how to transfer these properties and value with P2P.

With the thorough development of internet services, it can be inferred that the boundary of entity and virtual will become fuzzy, the need of peer to peer value transmission will be showed for us, therefore, Value Super Highway and Value Transfer Protocol will be appeared on the internet necessarily, bitcoin accelerates this historical process.

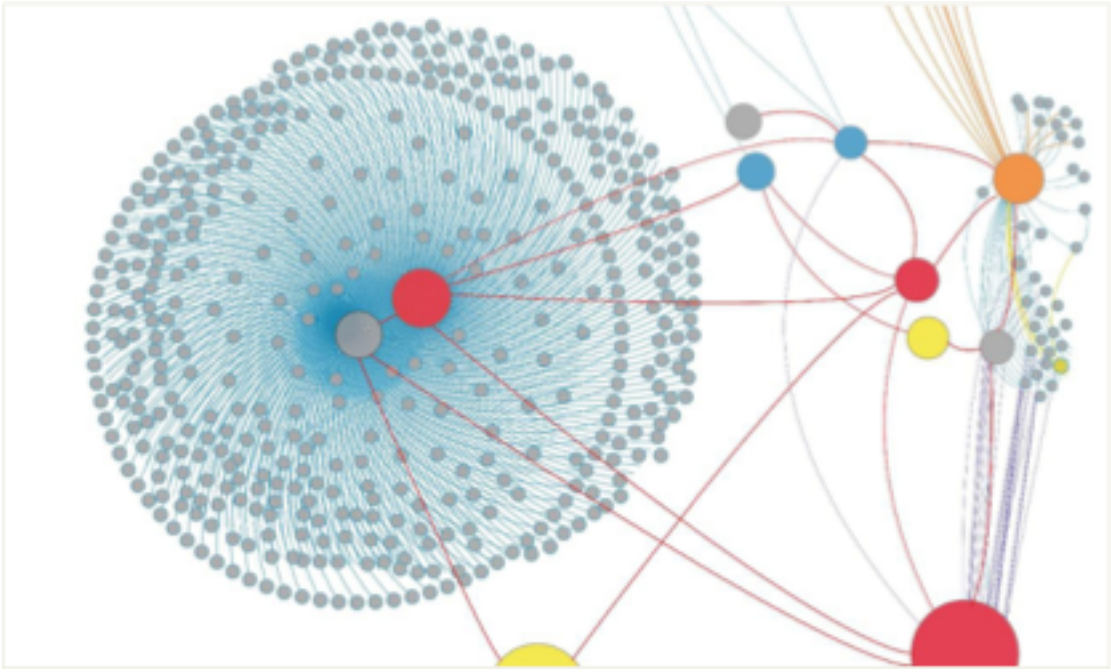
The inexorable trend of decentralization

With the panoramic view of the development of human, technology let social resources from dispersion to centralization, producing powerful productivity and more efficiency. But with the elapse of time, the centralized resources aggregation generated a series of social problems.

However, decentralized internet could avoid the structure defect and promote the arrival of the value of the internet.



Centralized Structure Figure



Distributed Structure Figure

Decentralized Structure Figure

Part II The Status of Blockchain Industry

Since bitcoin published its codes from 2009, block chain has got further development. But more Altcoin remained on digital currency level, lacking effective combination for business world. Even though there are some creative projects of block chain. Like: ColorCoin， NXTCoin, Ripple, Stellar, BitShare, Dash, Maidsafe, Factom and so forth. But at the industrial application of related block chain system, they had more boundedness.

The main problems of blockchain technology:

1. Proof of Work (POW) Lacking new-type smart contract platform. Nowadays smart contract platform is mainly based on Proof of Work(POW).

2. The consensus mechanism of Proof of Work(POW)is difficult to implement by industrial application large-scale deployment. Bitcoin uses the consensus mechanism which adopted by POW proved that one block would be produced every 10 minutes and the capacity of every block is 1MB. This mechanism apparently cannot be satisfied the needs of high frequency trading in the aspect of business.

3. Bitcoin has attracted main computing power in the global areas presently, another block chains which adopted consensus mechanism of Proof of Work(POW)are difficult to ensure its safety; mining will cause a larger number of resource waste.

4. The compatibility of different block chain, it would be difficult to have compatibility between bitcoin ecosystem based on UTXO model and ethereum ecosystem which based on Account mode.

5. The existing block chain system got the feature of closure, main smart contracts trigger of block chain system itself presently, seldom from triggering conditions of outside, lacking of interaction of real world.

Part III Technical Features of SAN Blockchain

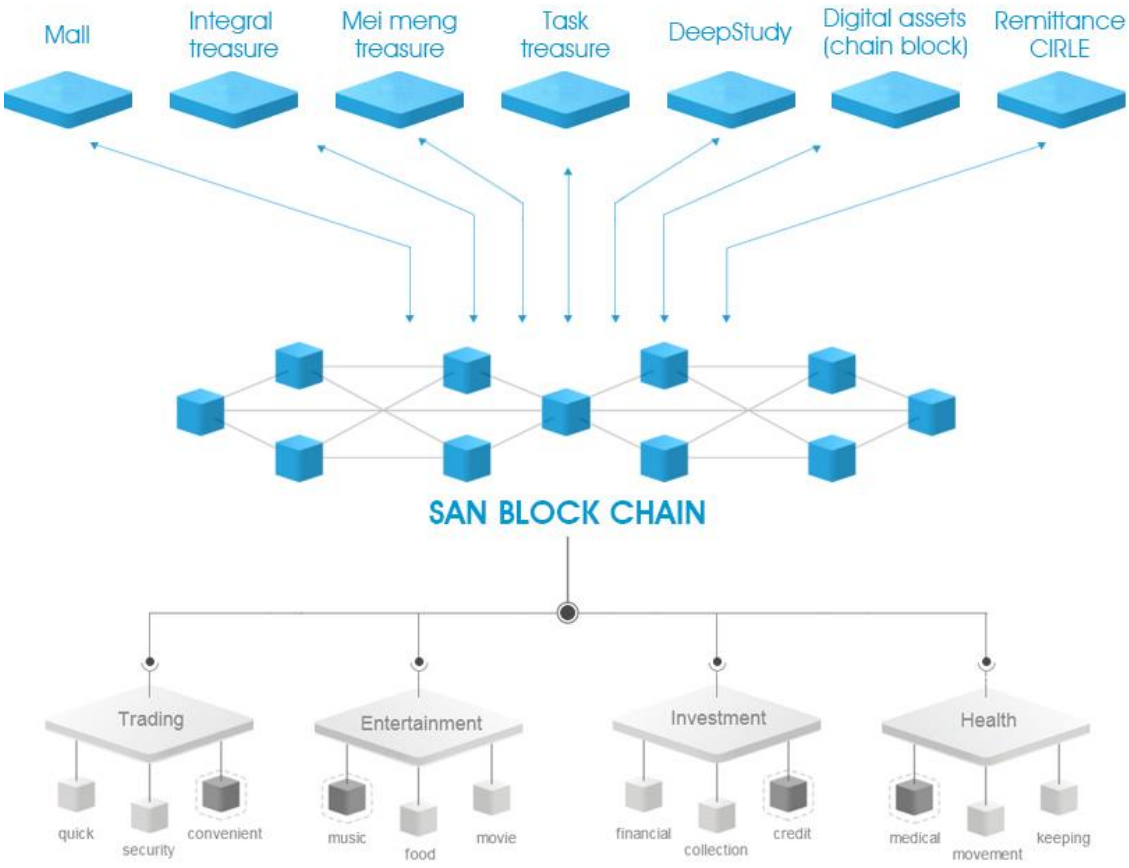
SAN Blockchain is designed to build a brand new blockchain ecosystem and become a part of the value of the Internet, to realize high performance digital asset transaction, and to organically combine with industries.

1. DAPP Decentralized Application
2. Industry Application
3. Digital Asset Flow

SAN Blockchain ecosystem realized the decentralized application from the underlying technology architecture. It makes blockchain fully combined with real business world, and fulfills the indeed circulation of digital asset, through the endogenous gas SAN which is as fuel to drive DAPPs and developments.

Comparing with conventional POS/POW mechanism, SPOS is a brand new one, which is adopted by SAN Blockchain to improve the efficiency of the system. Without mining, the transaction throughput of the system has been improved in commercial grade.

Comparing with conventional PoS mechanism, constructers in SAN Blockchain ecosystem are stimulated by incentive mechanism. Meanwhile it is a good way to promote the development of the network construction process and ensure the healthy operation of the whole network. Due to SAN Blockchain’s aim for better combination between blockchain technology and commercial application, it welcomes the third-party institutions joining the ecosystem and participating in construction and maintenance together.



SAN Blockchain Ecological Figure

Part IV The Role of SAN in SAN Blockchain

1. The Incentive Properties of SAN

SAN is an ecosystem of SAN Blockchain. It is a bridge of settlement endogenous from blockchain technology, which is used to stimulate constructors, participants, developers and users, as well as DAPPs, commercial application, digital asset and redeem points, etc.

2. Ownership Mechanism of SAN

SAN adopts Super Proof of State (SPoS), which is creative and much better than existing POS and POW in the speed of ownership, the size of

block and the efficiency of interaction.

3. Gas Nature of SAN

As native gas of SAN Blockchain, SAN is used to drive and support DAPPs and industry application.

Schematics of SAN

Part V The vision of SAN ecosystem

SAN ecosystem, from the beginning of design, puts the combination of blockchain technology and application at the first place. It makes SAN different from others based on theory. SAN ecosystem emphasizes the gene of application, offering the open ecosystem basis for all kinds of participants.