Design and Development Proposal for J Market Eco-System

I.   Required Platform – The main target of development

In order to develop a block-chain platform for the second-hand market, the following three main factors must be used as basic configuration requirements.

1. The Means of Trading – J Link Coin (JLC) creation, management and distribution systems are required.

2. The Subject of Trading – In the proposed business, 'used goods' is the subject of the transaction.

3. The Composition of Transaction Block Chain

    A. In the proposed business, the main item of the transaction is 'used goods' and the transaction currency is JLC. It is necessary to design a block chain that can manage this separately.

    B. For this, on a multi-chain basis, a public chain that maintains calls and transactions, and a private chain that processes information about used transactions are designed.

    C. Therefore, it is necessary to connect these two block chain systems.

II.   The Means of Trading

The currency used in the J Market platform is not a final means of transaction but a payment procedure that includes a whole process. The transaction must be locked and refundable until the purpose of 'used goods' transaction is achieved, rather than the transaction being terminated at the time of payment from the seller. Even after the transaction, there remains still a process called "return", which requires a special structure to automate all of these into a block chain.

If the platform does not need to be integrated with currency, it is much more efficient to develop web sites for trading and integrate with previously developed coins. This would be a form of introducing crypto currency as a payment method to the so-called traditional development method of transaction site. However, this structure does not have any benefits other than the anonymity and direct transaction that the crypto currency inherently contains. The additional fees are also charged because the existing methods of management and assurance procedures are maintained. In this case, the end user will not take an advantage of utilizing this platform as a second-hand market platform. In addition, the use of crypto currency, which is not integrated with the platform, is constrained in platform utilization and expansion if it does not exceed the limit of the existing coin in currency control, inflation, mining and profit distribution of consensus participants. Therefore, there is a need for a completely free, proprietary, decentralized, fully automatic system from transaction posting, payment, approval to refunding. And we need a system that is designed to be able to execute,

archive, and track the main processes of the platform transaction and to be maintained by consensus between users.

The means of trading in J Market should meet the following process.

1. Conditional payment for transaction details – A process is required in which the payment is confirmed by consensus after the payment, rather than the transaction occurring at the time the money is paid.

2. Refund process for conditional payments – In the case that consensus has not been reached, an automated process is required, in which payments are withdrawn and money is automatically sent to the buyer.

3. Locked Payment, Unlocking Process – If a state change such as payment denial or payment acceptance does not occur during a given period, a procedure shall be configured by the higher monitoring node to automatically withdraw the payment or proceed with the automatic payment process.

4. Who has the authority for consensus?

    A. <u>Buyer</u> shall have the final consensus authority through the approval of Purchase.

    B. <u>The seller node agent</u> receives objective sales indicators, such as the shipping details and manages them. – It is necessary to monitor and validate the publishing of sales materials through a separate Sentinel RPC procedure.

    C. <u>The buyer node agent</u> collects the data from the seller node agent and makes the purchase approval in place of the buyer unless the buyer makes an objection only if the buyer does not approve the purchase beyond the purchase approval period.

    D. <u>Final Prime node</u> makes a final decision if A, B and C do not proceed. During the normal process (A, B and C), the Prime node has no authority of involvement.

    E. <u>A Sentinel procedure</u> is required that the agent node can connect directly to and manage independently of each node. This sentinel procedure is included in the private block chain to deploy for security and configuration issues.

III. The Subject of Trading

There is a need for a method to store and verify the publication, conditions, and information of the subject of trading. The information to be used for 'means of trading' can be written on a public block chain such as the existing crypto currency. However, configuration of separate chain is essential in order to store, publish, and track a vast amount of information specifying details of the goods, conditions of transactions, contents; Private block chain should be designed to facilitate the smooth creation and storage of information. Unlike a public chain, a

private block chain is created and managed by specific agents, and certain agents receive a portion of the J Coin and transaction fees. The private block chain is directly connected to the Prime node, but the Prime node plays a role of maintaining the connection and security between the agents and does not intervene in the actual settlement process except for the final processing of the default transaction.

The private block chain itself has a digression level, which is removed from the block chain linkage according to a step-by-step procedure of 3 months, 6 months, 1 year from the transaction date to form an algorithm that can keep the private block chain compact. Transaction records over 3 years are completely isolated from the chain, streamlining the replication process for node agents. However, the seller's ratings, sales history, and reviews are preserved as long as the block chain lasts. All members only deal with the account that is granted and no personal information is required in the account unless they want to. All processes from the publication of the transaction, results to the occurrence of returns are recorded and stored.

The Private block chain contains the function to run compiled executable code such as Ethereum byte code. Virtual machine is also imbedded in Javascript form in private block chain, which makes users can easily call results and transaction contents with web interface without installing another code runner. It also allows anyone to easily view current transaction status and past transaction history via the web interface. Unlike the Ethereum Virtual Machine (EVM), it is designed to simply specify the procedural conditions of a transaction so that anyone can simply specify the transaction conditions they want. If the part about condition is slightly modified, it is possible to expand to auction functions.

IV. The Composition of Transaction Block Chain

In order to satisfy the above conditions, the basic direction of the block chain design should be as follows.

1. Private Block Chain is shared by all the agents

2. Public Block Chain is shared by all the agents and trading users

3. A Node owns a public block chain, and if there is transaction information, it has a link code to a private block chain. If it has a full public block chain, PoW (Proof of Work) system is possible.

4. The node agent is the core operating node of the J platform ecosystem, which manages both private and public chains. Kick-In deposit is required and the node agent issues the coin required on the J Platform by PoS (Proof of Stake).

5. Prime Node is a unit for the first seed generation and platform classification and it generates initial coins for business progress. In addition, prime node has a signature that distinguishes it from other node groups. (Any other platforms with a post-sale-decision structure can be configured)

6. PoA (Proof of Activity) based block Incentive system approves the final trading block according to the coin hold of the validator participating in the PoW (Proof of

Work) and the block approval. Therefore, in PoA (Proof of Activity), block chain is divided into Template block and Full-fledged block.

V.   Direction of Development

1. Separation of transaction information and article publication information; Data structure design.

2. Design and configuration of a parallel block chain with both private and public block chain; And security model confirmation.

3. Step-by-step block chain structure design with prime-agent-general node as basic concept

4. Javascript-based Code-Runner and script contract based on it; Technology that can be embedded in the block chain.

5. Sentinel procedure to embed in a block chain should be able to communicate woth the procedures outside J Platform.

6. PoA (Proof of Activity) mining and stake compensation model design for coin construction; A fee distribution structure based on it; A difficulty design for coin issuance.

7. Implement RPC / IPC protocol for external expansion

8. Template creation for second-hand trading platform.

9. Template creation for coin wallet.