

# Introduction of BSN Open Permissioned Blockchain Project

## I. Preface

Blockchain-based Service Network (hereinafter referred to as "BSN") is the world's largest blockchain infrastructure network. It was jointly launched by the State Information Center, China Mobile, China UnionPay, and Red Date Technology on October 15, 2019 and has since established more than 120 public city nodes (PCNs) around the world.

Although BSN only supports permissioned blockchain frameworks in China, it supports both permissioned and permissionless blockchains on BSN international portals and PCNs. BSN enables developers to rapidly develop, deploy, and operate various blockchain applications (DApps) at a low cost and realize simple interoperability between blockchains.

As an important part of the global blockchain technology development, public blockchains have their unique technologies, applications, and ecosystems. However, the public blockchain technology has failed to penetrate the Chinese market due to regulatory concerns and a lack of product-market fit.

BSN believes it is necessary to trail-blaze a new path that allows the public blockchain technology to grow steadily in China. As such, BSN plans to transform public blockchains into the "Open Permissioned Blockchain," so that it can be seamlessly deployed on the BSN China ecosystem. This is the most direct and effective way for public blockchain technology to legally enter and develop in China.

## II. BSN Open Permissioned Blockchain

Launched on October 15, 2019, BSN has completely lowered the blockchain technology's barrier of entry to the Chinese market, with its new technological design and business model.

Subsequently, Ant Financial, a subsidiary of Alibaba, launched the "Ant Open Permissioned Blockchain" in April 2020, which is the first open permissioned blockchain in China.

Technically, an open permissioned blockchain is a public blockchain that has permission controls over node deployment and removes the mechanism of using cryptocurrencies.

Compared with traditional permissioned blockchains, an open permissioned blockchain allows DApps to operate without running their own peer nodes but instead sharing master nodes. Additionally, just like public blockchains, DApps are visible to everyone and can be invoked by anybody who knows the smart contract addresses. For many small to medium-sized companies, this open permissioned blockchain framework is an easier and more cost-effective way to deploy DApps, even though it has limited capability compared to the traditional permissioned frameworks such as Hyperledger Fabric.

One of BSN's core concepts is to integrate various blockchain technologies to form a one-stop infrastructure of blockchain services, and to empower various websites to provide services to developers to deploy and operate DApps in a convenient and cost-effective way through APIs. BSN has integrated multiple public blockchains on international portals and PCNs, and is very familiar with the technical features of public blockchains. Therefore, it is relatively easy to implement an open permissioned blockchain with BSN in China. After many internal discussions, the BSN Development Association, the governing body of BSN China, has decided

to launch the BSN Open Permissioned Blockchain project within BSN's network environment in China.

### **III. Ideas and Schedules**

Overall, the BSN Open Permissioned Blockchain project is inspired by the structure of Ant Financial's Open Permissioned Blockchain. However, it will include not one but multiple open permissioned blockchains and incorporate a better interoperability mechanism. Its goal is to give developers the option to develop DApps on different open permissioned blockchains, and to allow them to call each other easily through the BSN's interchain communications mechanism, resulting in a more flexible and broader technical architecture and business logic. Specific ideas and schedules are as follows:

- 1) Currently, the BSN Development Association plans to build 20-30 open permissioned blockchains on BSN, all of which are based on frameworks of internationally renowned public blockchains. Each open permissioned blockchain will be given a unique Chinese name instead of directly using its original public blockchain name to avoid confusions.
- 2) Establish a rigorous access and supervision mechanism. The related government agencies may temporarily suspend any BSN Open Permissioned Blockchains that violate the regulations for review and correction.
- 3) All of BSN Open Permissioned Blockchains' nodes are deployed on the PCNs of BSN China. At launch, each open permissioned blockchain will deploy 5 to 10 nodes. The number of nodes will gradually increase based on business demands.
- 4) In year one, all BSN Open Permissioned Blockchains will be free to use for developers. The cost shall be borne by each open permissioned blockchain provider.
- 5) The public blockchain architecture shall undergo two major technical modifications (1) through node identity authentication or whitelisting to only allow BSN operators to set up nodes; (2) ban transfers between user accounts(wallets).
- 6) The BSN Open Permissioned Blockchain will have an official portal. Also, through the BSN empowerment platform, open permissioned blockchains' functions can be synchronized to all BSN portals, which will be a major functional improvement of the BSN portals.
- 7) Developers need to top-up RMB accounts to acquire GAS in BSN Portals to pay for the operational expenses incurred by DApps after the first year. BSN Open Permissioned Blockchain has technically blocked any possibility of using cryptocurrencies.
- 8) BSN Open Permissioned Blockchain project is expected to go live by end of 2020 and around 20 open permissioned blockchains will be online in the first quarter of 2021. The interoperability mechanism among all open permissioned blockchains will also be available in the first half of 2021.

### **IV. Operations and Division of Labor**

The BSN Open Permissioned Blockchain is an operation-heavy project. In addition to managing the official portal and maintaining all nodes, it also needs to cooperate with various open permissioned blockchain providers to promote the project in China. Additionally, it will provide training and market enterprise solutions with these blockchain providers and host various offline and online events.

At present, the BSN Open Permissioned Blockchain will be jointly operated by members of the BSN Development Association, and a top-tier cloud service provider.

- 1) The BSN Development Association will work with public blockchain providers on a technical level, manage nodes, build and maintain the official portal, update the APIs of the empowerment platform, maintain the APIs of the open permissioned blockchain on PCN gateways, ensure compliance, and assist in various marketing efforts, operate the official portal, coordinate with third-party BSN portals, promote the project, and manage settlements with BSN participants.
- 3) The cloud service provider will provide node resources, and participate in various marketing efforts.

The establishment of the BSN Open Permissioned Blockchain will enable developers in China to cultivate their development abilities and ecological awareness of the public blockchain framework. It is also the fastest path for public blockchain projects to enter the Chinese market legally.

## **V. Contact Information**

If you are interested in the BSN Open Permissioned Blockchain project or have any inquiries, please contact us.

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