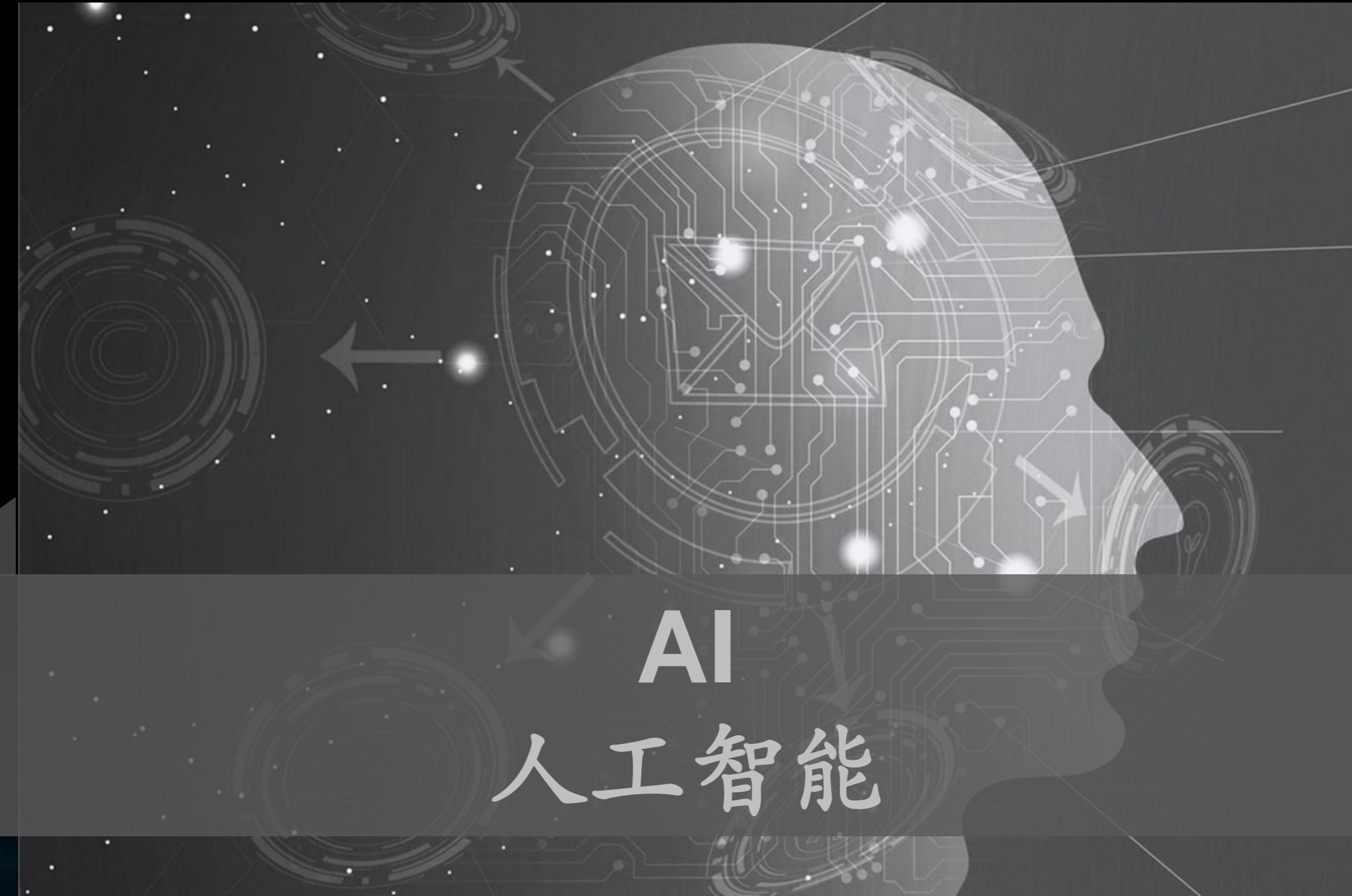


# Ping An Core Technologies 2: Ping An Blockchain (FiMAX)

平安核心科技 (二) : 平安区块链 (壹账链)









Eugene Huang

黄宇翔

Ping An OneConnect  
EVP, CTO, COO

平安集团 金融壹账通

执行副总裁，首席技术官兼首席运营官





# FiMAX Team: A group of technology, finance and IT experts

FiMAX团队：科技、金融和IT领域的精英组合



Head of FiMAX Core  
FiMAX Core团队负责人

密 保密单位



Head of FiMAX Cathaya  
FiMAX Cathaya团队负责人

密 保密单位



Senior Director –  
Head of Blockchain Division  
区块链高级产品总监，  
区块链研发负责人



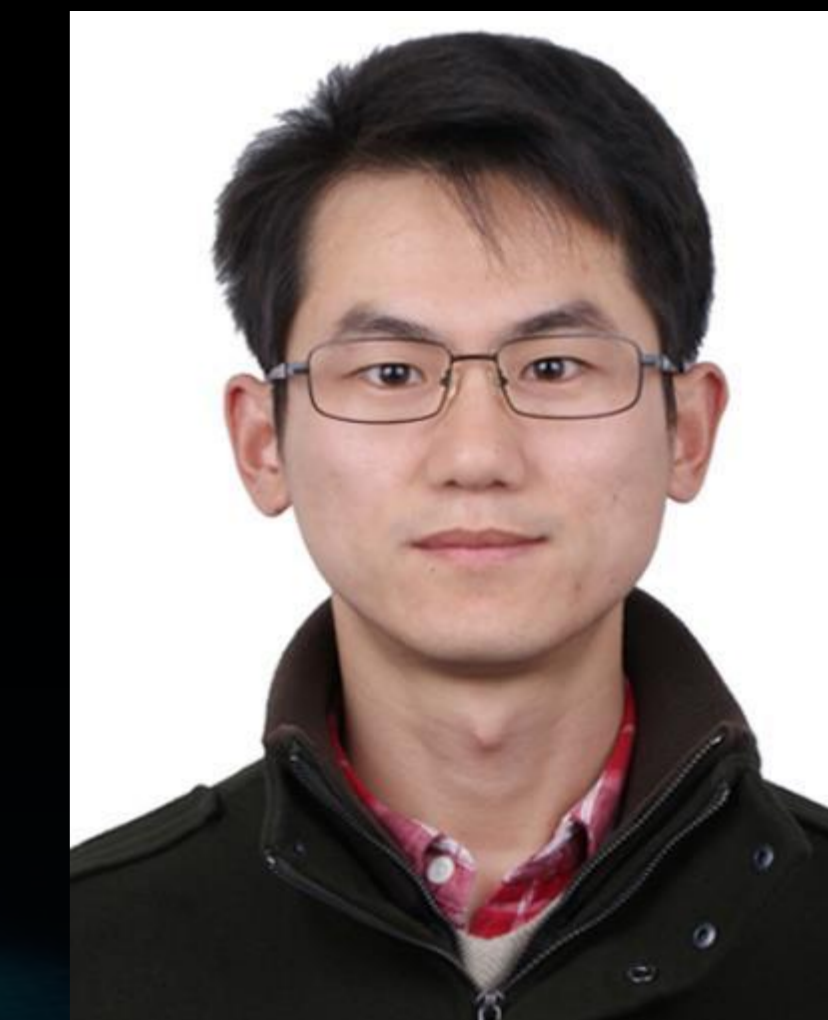
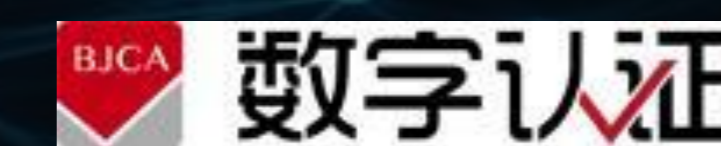
EVP, CTO, COO  
执行副总裁，首席技术官  
首席运营官



Head of product team  
产品团队负责人



Head of FiMAX Concord  
FiMAX Concord团队负责人



Expert in blockchain  
区块链技术专家





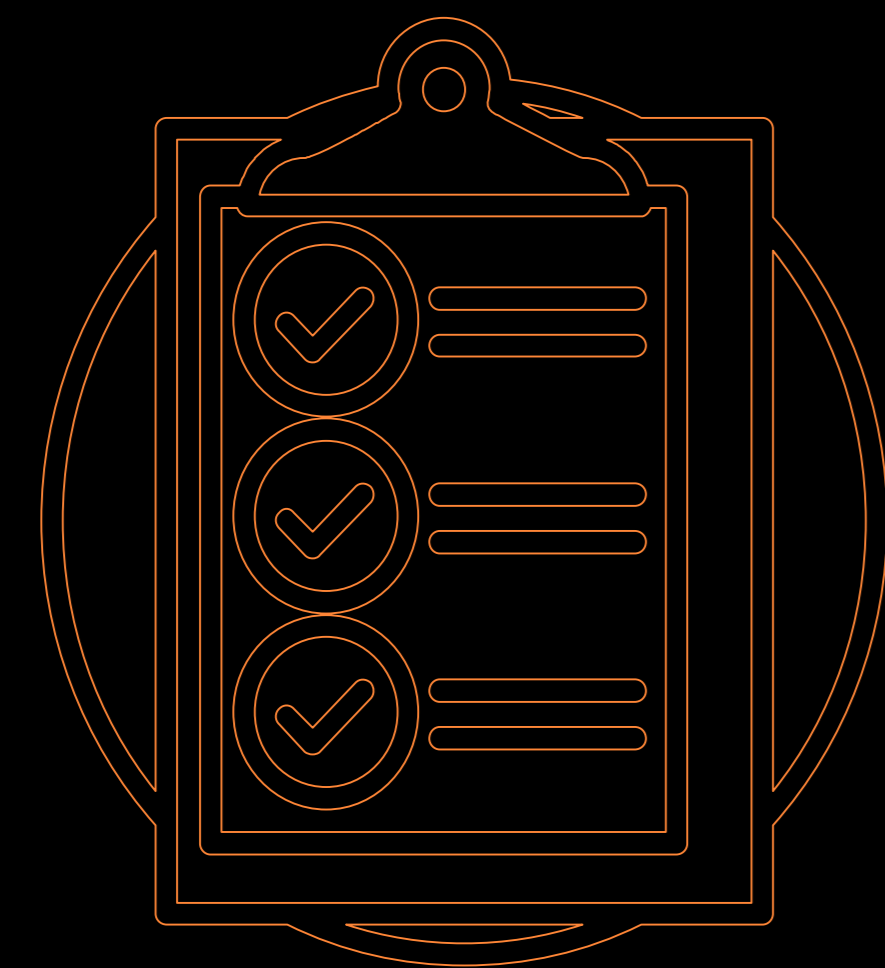
Where a brighter future is maximized  
by a oneconnected network

Ping An Investor Day

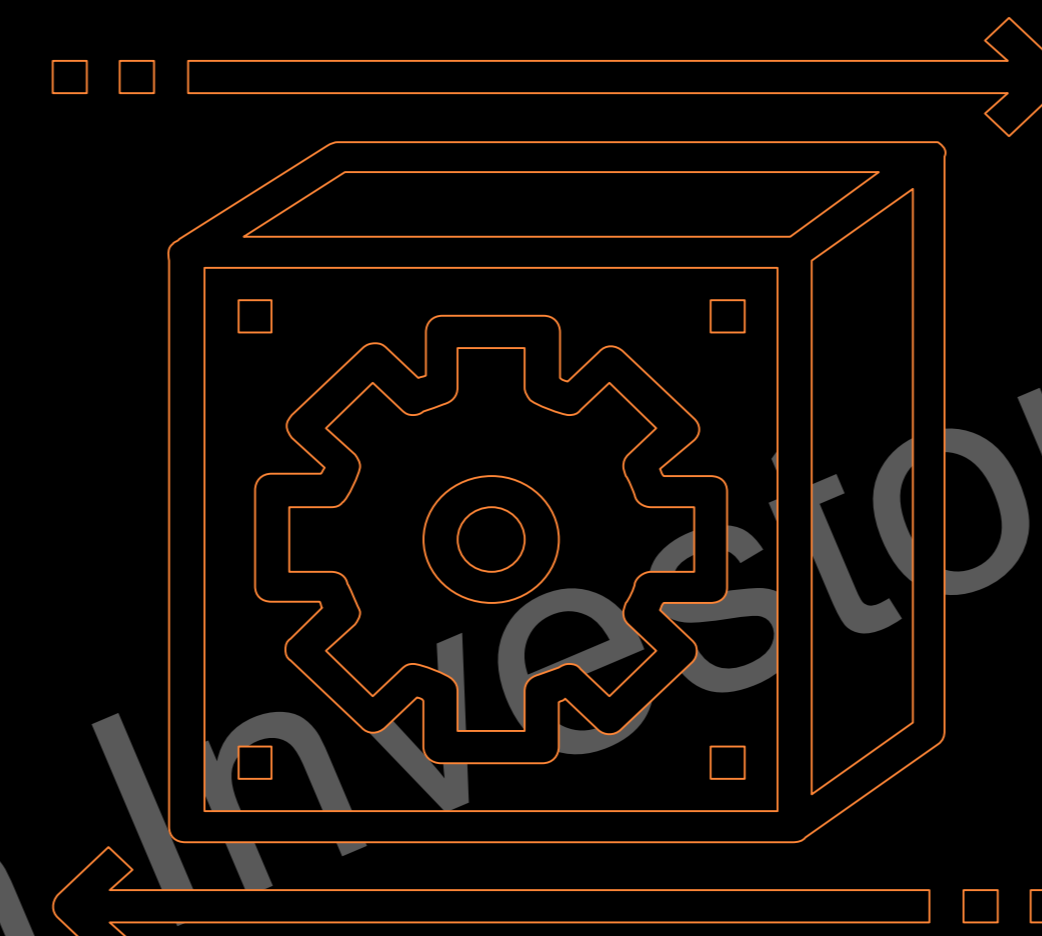


# Blockchain: Secure, trustworthy and efficient innovative distributed ledger

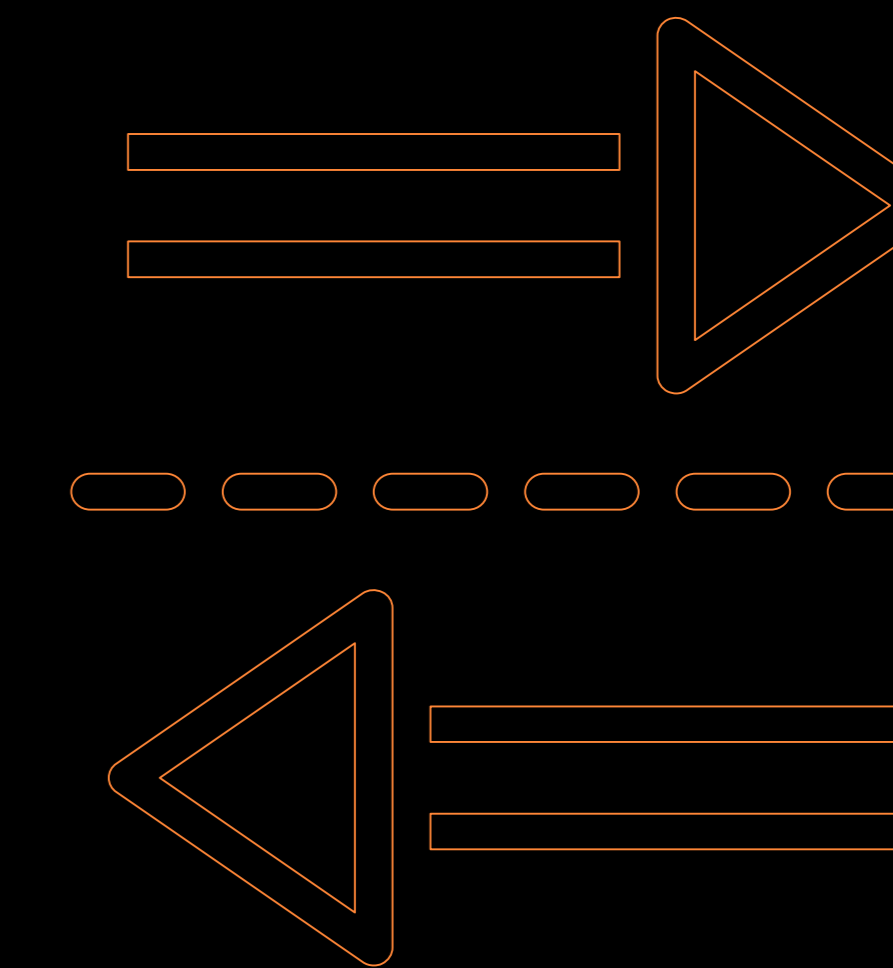
区块链：安全、可信、高效的创新分布式数据库



**Consensus Mechanism**  
共识机制



**Verified & Traceable Information**  
信息真实可追溯

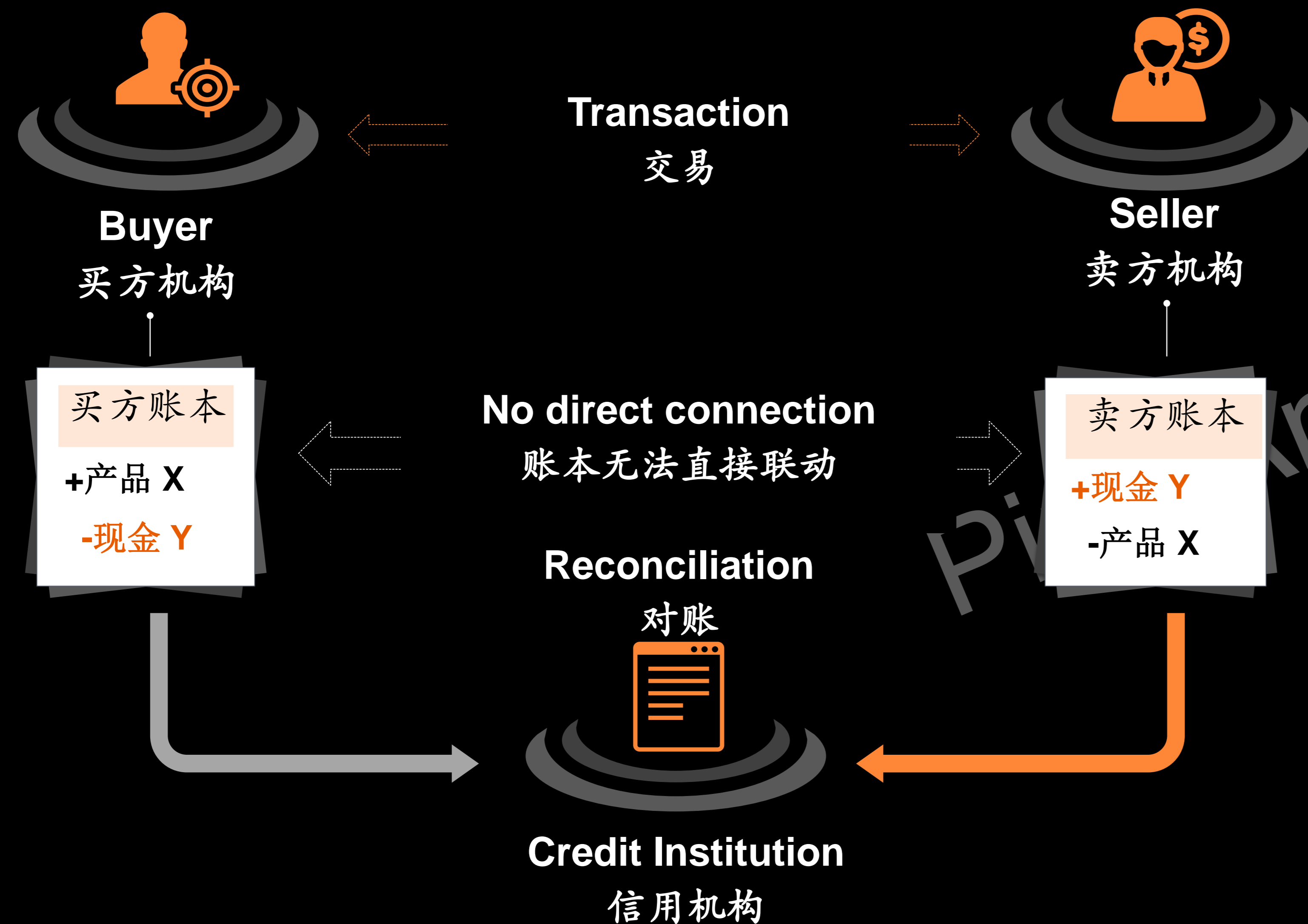


**Distributed**  
分布式

# Blockchain: Innovative distributed ledger preventing fraud and manipulation

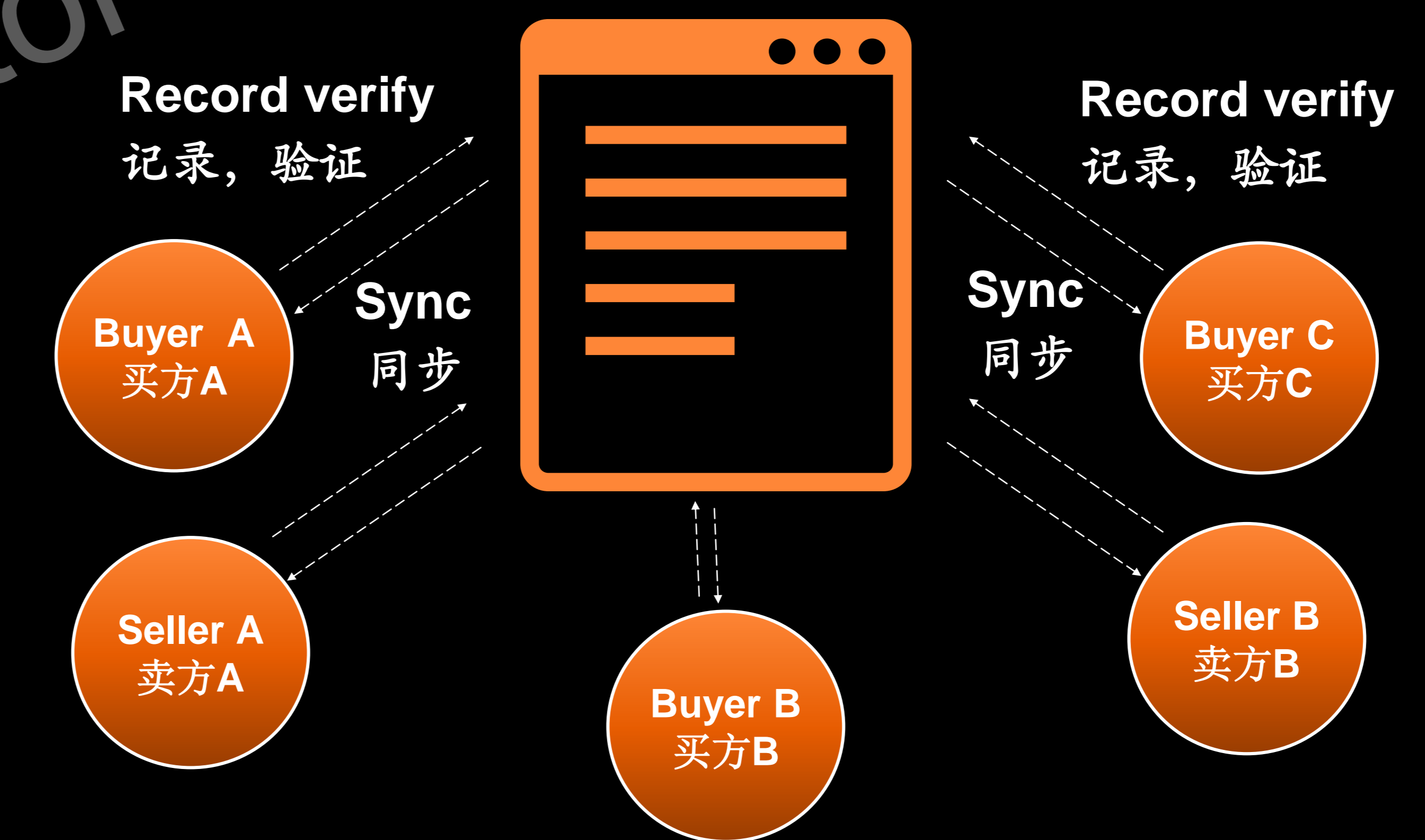
区块链：创新的分布式数据库防止欺诈和人为操控

## Traditional Mode 传统模式



Investor Day

Public Ledger:  
公共账本:



## Blockchain Mode 区块链模式

Why is Ping An Blockchain Technology leading edge?

Ping An Investor Day



# Ping An FiMAX offers industry-leading performance and exclusive functionalities

平安区块链提供业界领先的性能与独有功能

**Conceal**  
隐私



The most comprehensive ZKP<sup>1</sup> solution  
业内最强零知识验证算法库

**Connect**  
连接



50K TPS, avg. latency <0.05s,  
w/ China Crypto<sup>2</sup> standard enabled  
国密环境下TPS 50K, 平均延时<0.05s

**Command**  
掌握



From "DOS" Era to "Windows" Era  
跨越区块链DOS时代至区块链  
Windows时代

**Standard**  
标准



Only industrial standard blockchain APIs  
with real applications  
唯一有多场景落地的行业标准API

1. Zero-knowledge proof 零知识认证  
2. China Crypto: 国家密码局认定的国产密码算法, 即商用密码

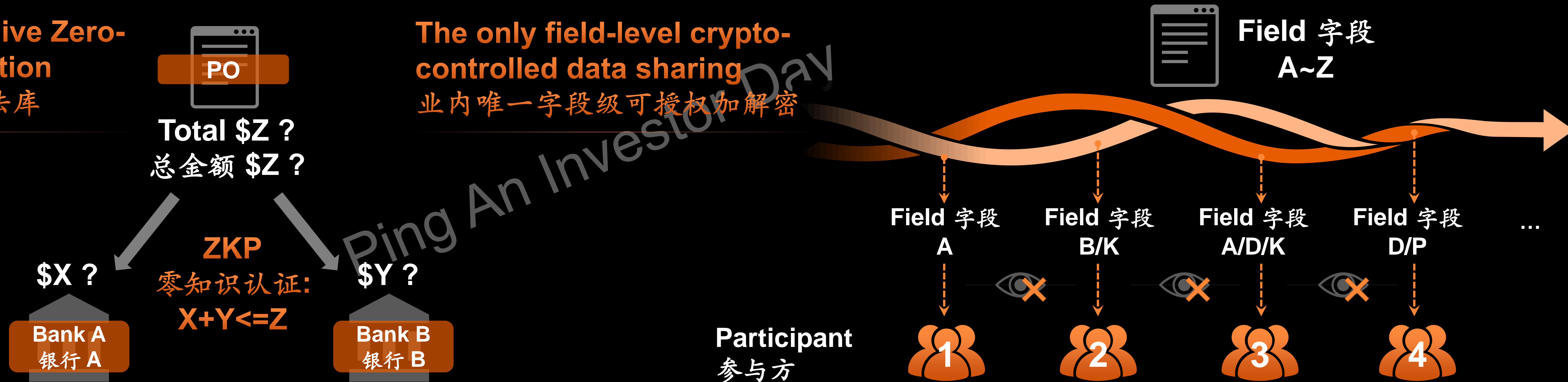


# Conceal: FiMAX Cathaya ensures the most comprehensive privacy protection

隐私: FiMAX Cathaya提供综合性能最强的隐私保护系统

The most comprehensive Zero-Knowledge Proof solution  
业内最强零知识验证算法库

The only field-level crypto-controlled data sharing  
业内唯一字段级可授权加解密





# Connect: FiMAX Core boosts ultimate blockchain performance

连接：FiMAX Core突破区块链极限性能

**Only blockchain infrastructure to provide high throughput, low latency and efficient China Crypto solution simultaneously**  
业内唯一同时提供高吞吐量、低延时和高效国密解决方案的区块链架构

High Throughput  
高吞吐量

**50K**

TPS<sup>1</sup>  
每秒事务处理量

Low Latency  
低延时

**<0.05s**

response time  
响应时间

China Crypto  
国密加速

**100x**

more efficient  
更高效



# Command: FiMAX Concord brings blockchain from “DOS Era” to “Windows Era”

掌握: FiMAX Concord带领区块链跨越“DOS”时代到“Windows”时代

```

17 static CBlock CreateGenesisBlock(const char* pszTimestamp, const CScript&
    genesisOutputScript, uint32_t nTime, uint32_t nNonce, uint32_t nBits, int32_t nVersion,
    const CAmount& genesisReward)
18 {
19     CMutableTransaction txNew;
20     txNew.nVersion = 1;
21     txNew.vin.resize(1);
22     txNew.vout.resize(1);
23     txNew.vin[0].scriptSig = CScript() << 486604799 << CScriptNum(4) << std::vector<
        unsigned char>((const unsigned char*)pszTimestamp, (const unsigned char*)
        pszTimestamp + strlen(pszTimestamp));
24     txNew.vout[0].nValue = genesisReward;
25     txNew.vout[0].scriptPubKey = genesisOutputScript;
26
27     CBlock genesis;
28     genesis.nTime = nTime;
29     genesis.nBits = nBits;
30     genesis.nNonce = nNonce;
31     genesis.nVersion = nVersion;
32     genesis.vtx.push_back(MakeTransactionRef(std::move(txNew)));
33     genesis.hashPrevBlock.SetNull();
34     genesis.hashMerkleRoot = BlockMerkleRoot(genesis);
35     return genesis;
    
```

Blockchain “DOS” Era  
区块链“DOS”时代

FiMAX Concord

Name	Service Address	Type	Organization	Status	Client Access URL	Actions
peerNode04ForChain0928	30.4.210.102:3051	peer(endorser)	appOrg02ForChain0928	active	http://peerNode04ForChain0928hWDuRgyKiWgJ@30.4.210.106:8088/api/v1/blockchains/2	[Refresh] [Stop] [Close] [More]
ordererNode03ForChain0928	30.4.210.102:5050	orderer	ordererOrg01ForChain0928	inactive	http://ordererNode03ForChain0928hwjZSOVnylib@30.4.210.106:8088/api/v1/blockchains/2	[Close] [More]
peerNode01ForChain0928	30.4.210.102:6051	peer(endorser)	appOrg02ForChain0928	inactive	http://peerNode01ForChain0928MQUSCMBDDewH@30.4.210.106:8088/api/v1/blockchains/2	[Refresh] [Close] [More]
peerNode02ForChain0928	30.4.210.102:5051	peer(endorser)	appOrg02ForChain0928	active	http://peerNode02ForChain0928RQfSzxnmRsit@30.4.210.106:8088/api/v1/blockchains/2	[Refresh] [Close] [More]
peerNode03ForChain0928	30.4.210.102:4051	peer(committer)	appOrg01ForChain0928	active	http://peerNode03ForChain0928SKZcwwRlibge@30.4.210.106:8088/api/v1/blockchains/2	[Refresh] [Close] [More]
ordererNode02ForChain0928	30.4.210.102:7050	orderer	ordererOrg01ForChain0928	active	http://ordererNode02ForChain0928pWdOGPKOicKF@30.4.210.106:8088/api/v1/blockchains/2	[Close] [More]

Blockchain “Windows” Era  
区块链“Windows”时代



# Ping An FiMAX Competitive Advantages

## 平安区块链竞争优势

FiMAX 平安壹账链    Ethereum 以太坊    Fabric 1.1 超级账本

**Privacy**  
隐私

**Privacy Control**  
隐私可控

**Zero-Knowledge Proof**  
零知识认证



PoC Phase  
PoC阶段

PoC Phase  
PoC阶段

**Speed**  
速度

**Single Chain TPS (request / second)**  
单链吞吐量

**Average Latency (second)**  
平均响应时间/延时性

50K TPS  
w/ CC enabled

Non-CC: 40 TPS  
CC: N.A

Non-CC: 2300 TPS  
CC: ~ 50 TPS

<0.05s

15s

0.5s~2s

**Ease of Use**  
易用性

**One-click Deployment**  
一键部署

**Blockchain Management Console**  
区块链管理平台



- Node Management
- Network Management

N.A.



**#1 IDC Real Results Awards in Blockchain**  
IDC首个区块链应用实践类奖项



**131 patent pending, 6 granted (#1 within industry)**  
131个专利申请, 6个已授权, 业内第一



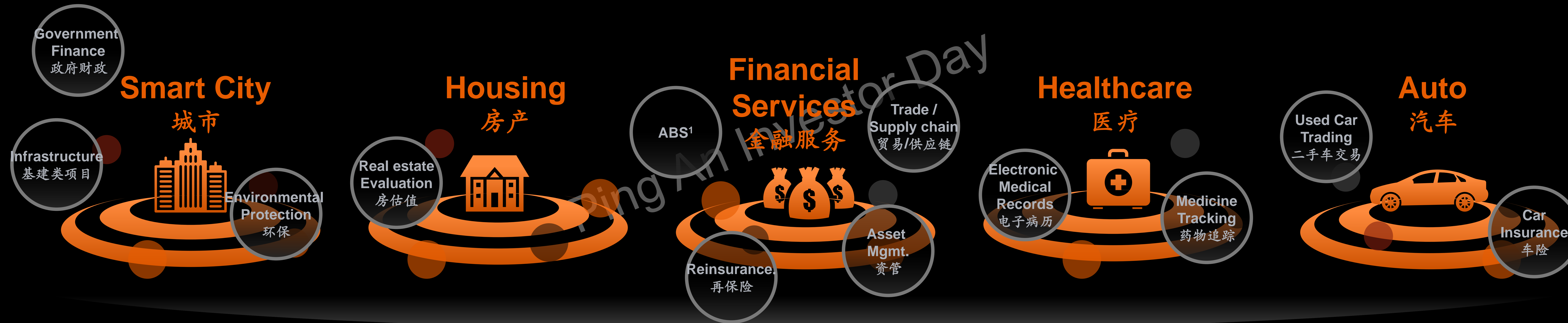
How deep have we applied in real-life scenarios

Ping An Investor Day



# FiMAX BaaS platform providing solutions for Ping An 5 ecosystems

围绕集团五大生态圈，打造丰富解决方案，建立三流合一的区块链服务平台





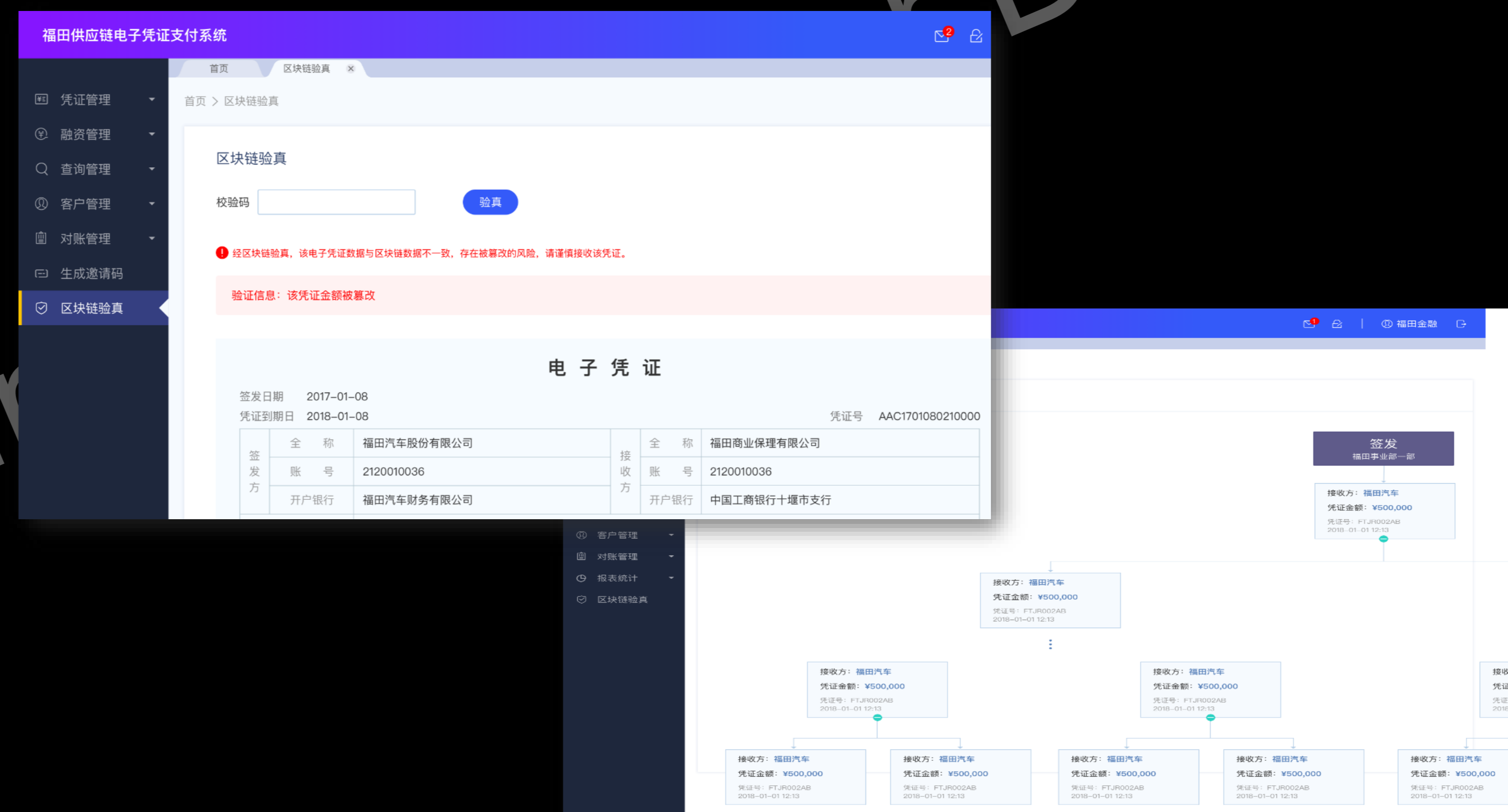
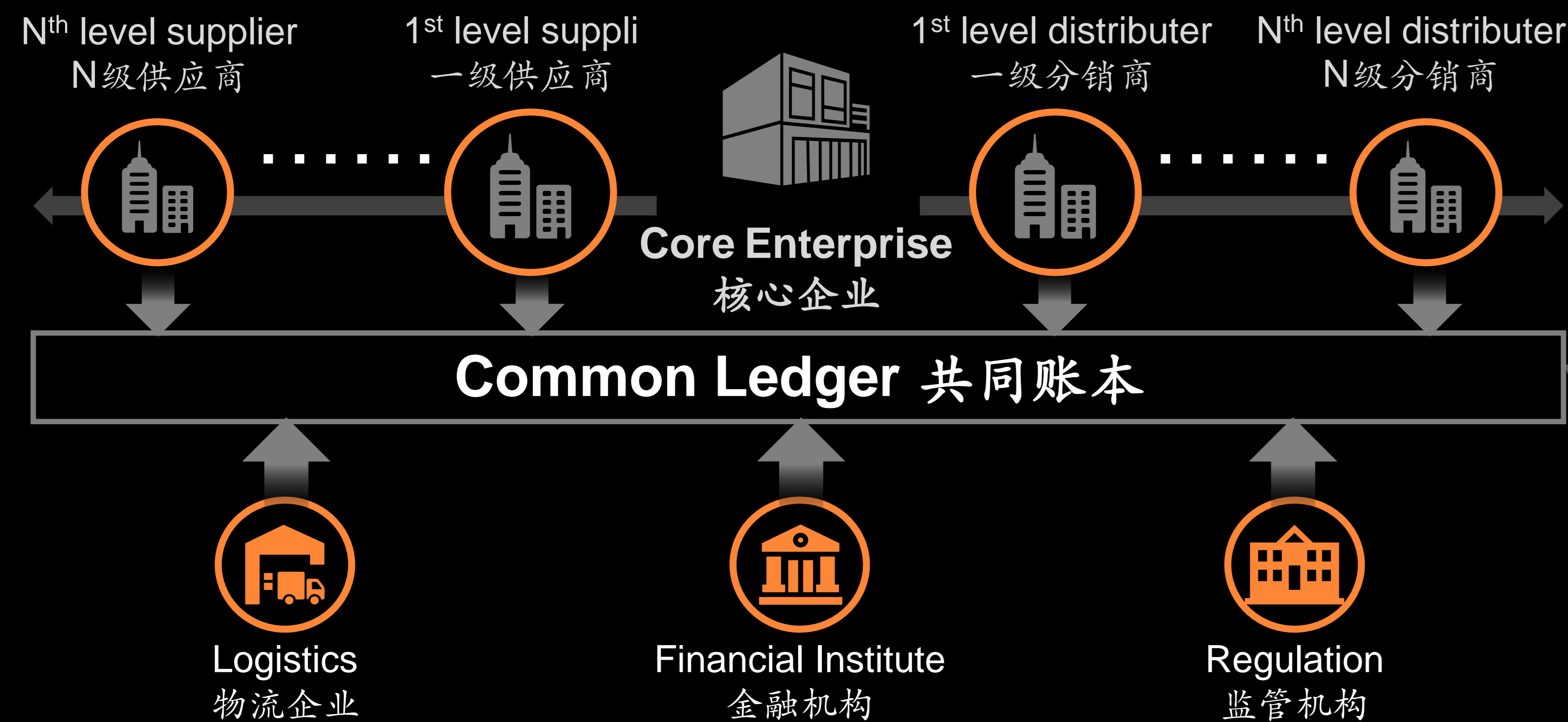
# OneConnect Supply Chain Platform: Providing innovative products and efficient services



金融壹账通供应链平台：提供创新产品及高效服务

**Common Ledger by multi-parties based on ZKP Authorization**  
基于ZKP认证，多方共同维护统一账本

**Case example of No.1 large auto manufacturer**  
某大型汽车制造商应用案例



## Impact 效果



Credit support 信用支撑

**5+ level 层**



Enterprises / banks 覆盖企业/银行

**200,000+/200+**



Account period 账户周期

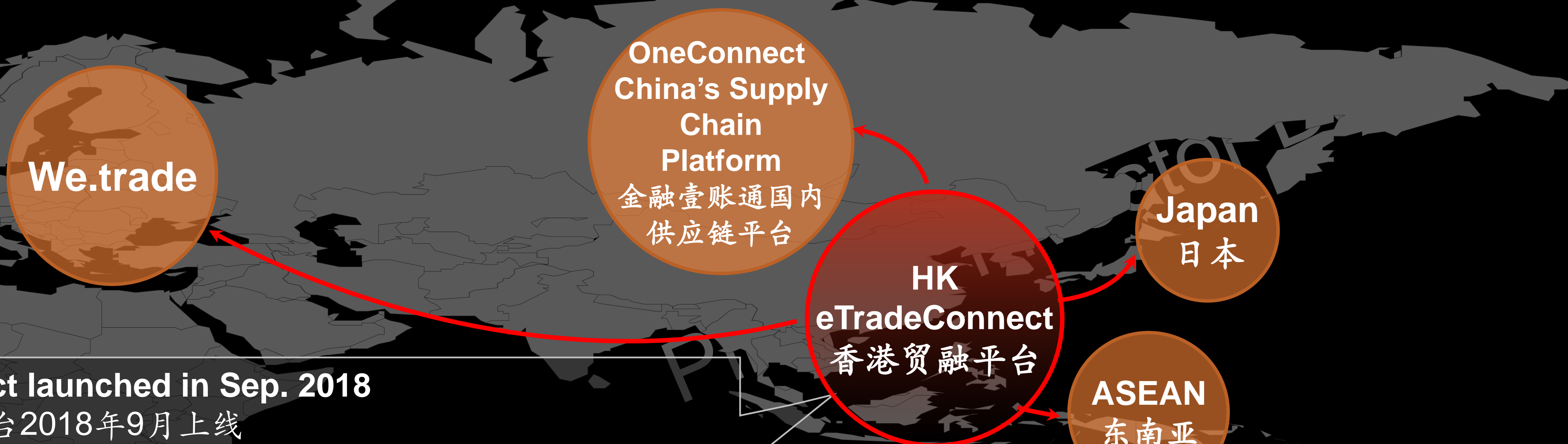
**Greatly reduced 大幅缩短**



# OneConnect Trading Platform: Connecting overseas & domestic platforms



金融壹账通区块链贸易平台：打造统一标准、连通境内外的贸易空中走廊



HK eTradeConnect launched in Sep. 2018  
香港金管局贸融平台2018年9月上线



## Impact 效果

Scale  
规模



**Largest**

Commercial platform  
商业平台

Node  
节点数



**40k+**

Nodes  
节点

Organizaiton  
覆盖机构



**200+**

Banks  
银行

**200k+**

Corporates  
企业

**500+**

Others  
其他



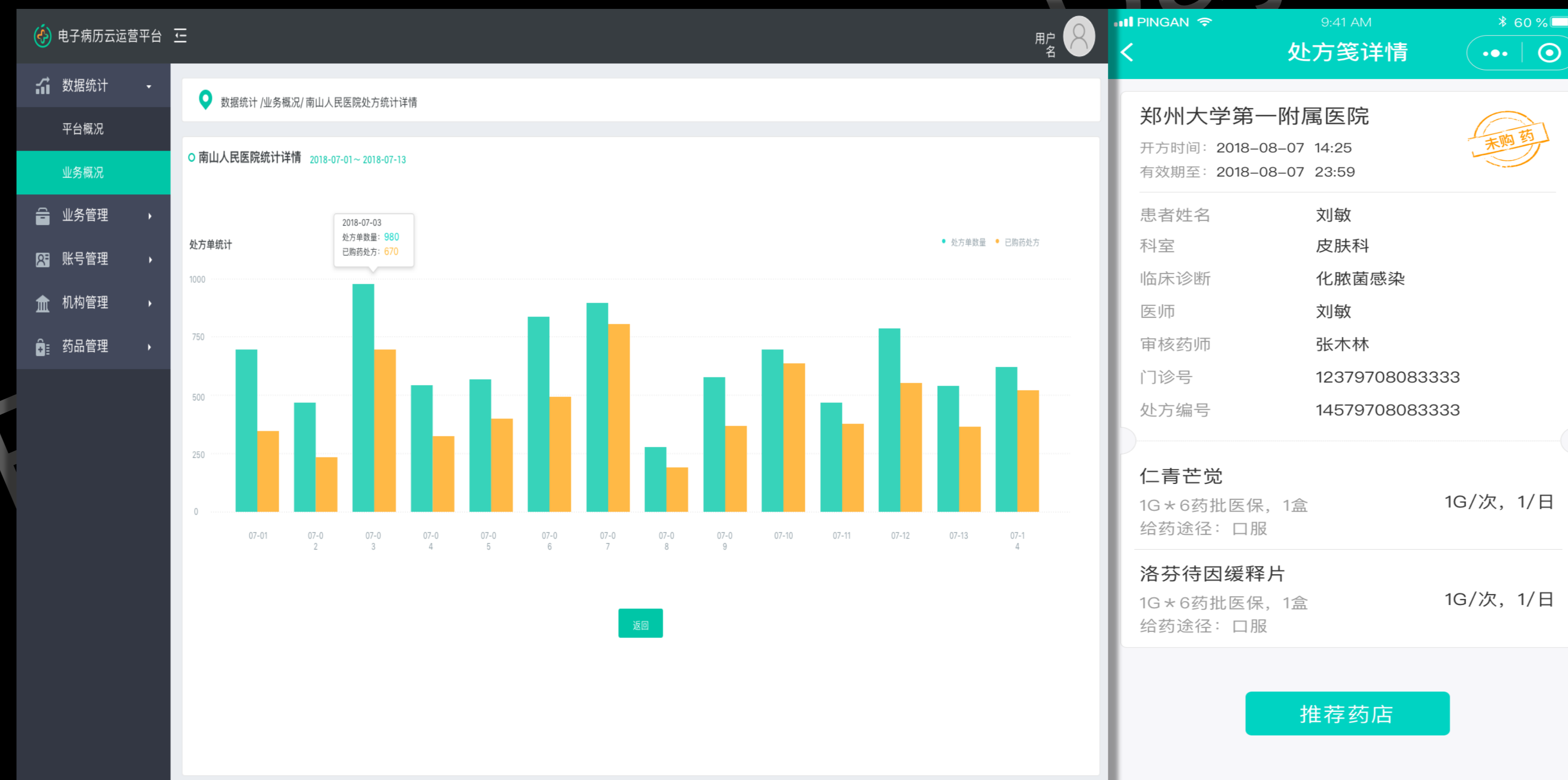
# Smart medical platform: end-to-end medicine info-tracing and record-sharing



智慧医疗平台：打通端到端药品信息追溯及病例共享

Medicine Info-tracing 药品信息追溯

E-medical Record Sharing 电子病历共享



Impact 效果



Information monitoring 药品信息监控

Real time



Investigation efficiency 问题调查效率

+80%



Health record security 病例流转安全性

100%



# Environmental protection platform: Info-sharing platform connecting multi-parties



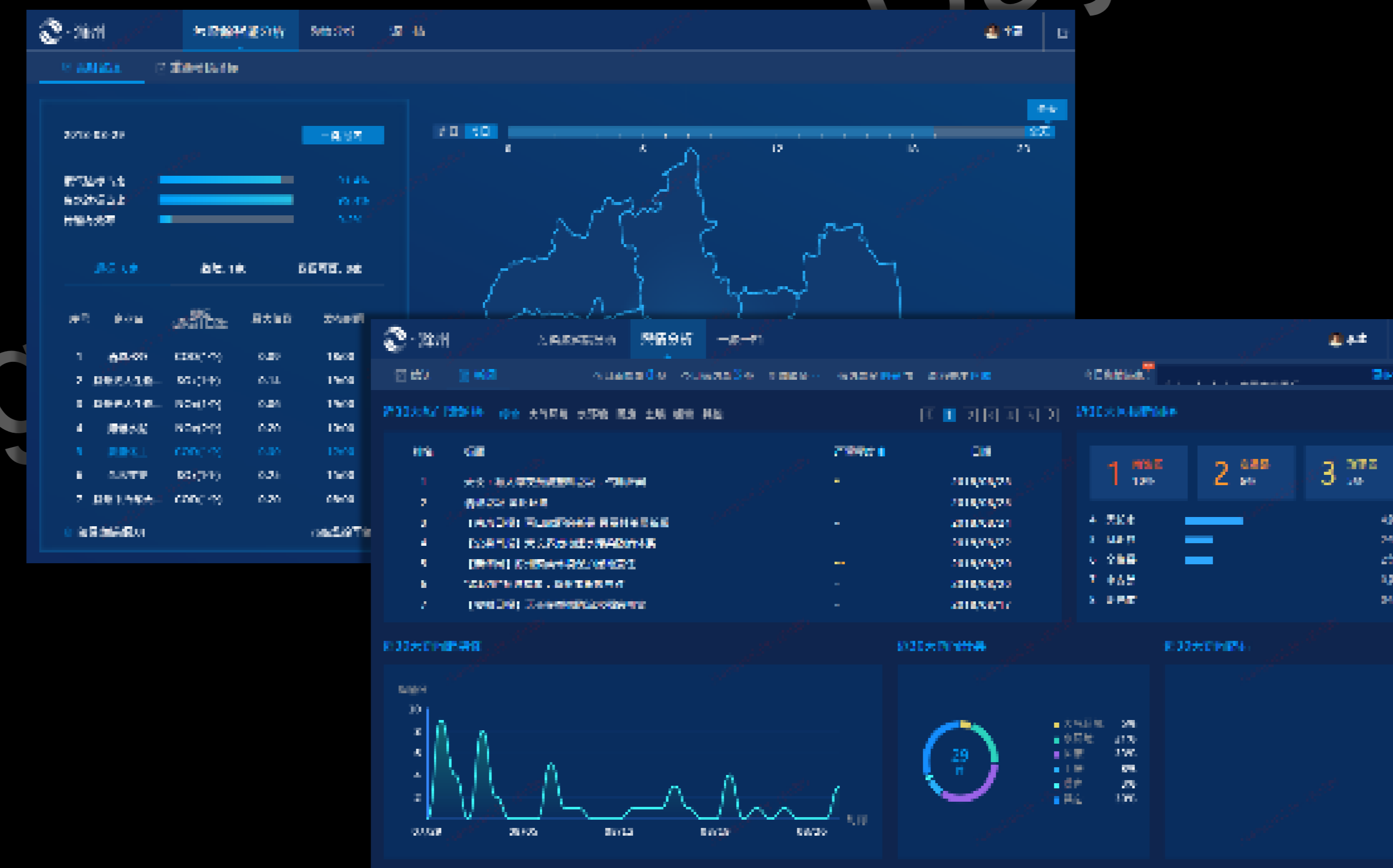
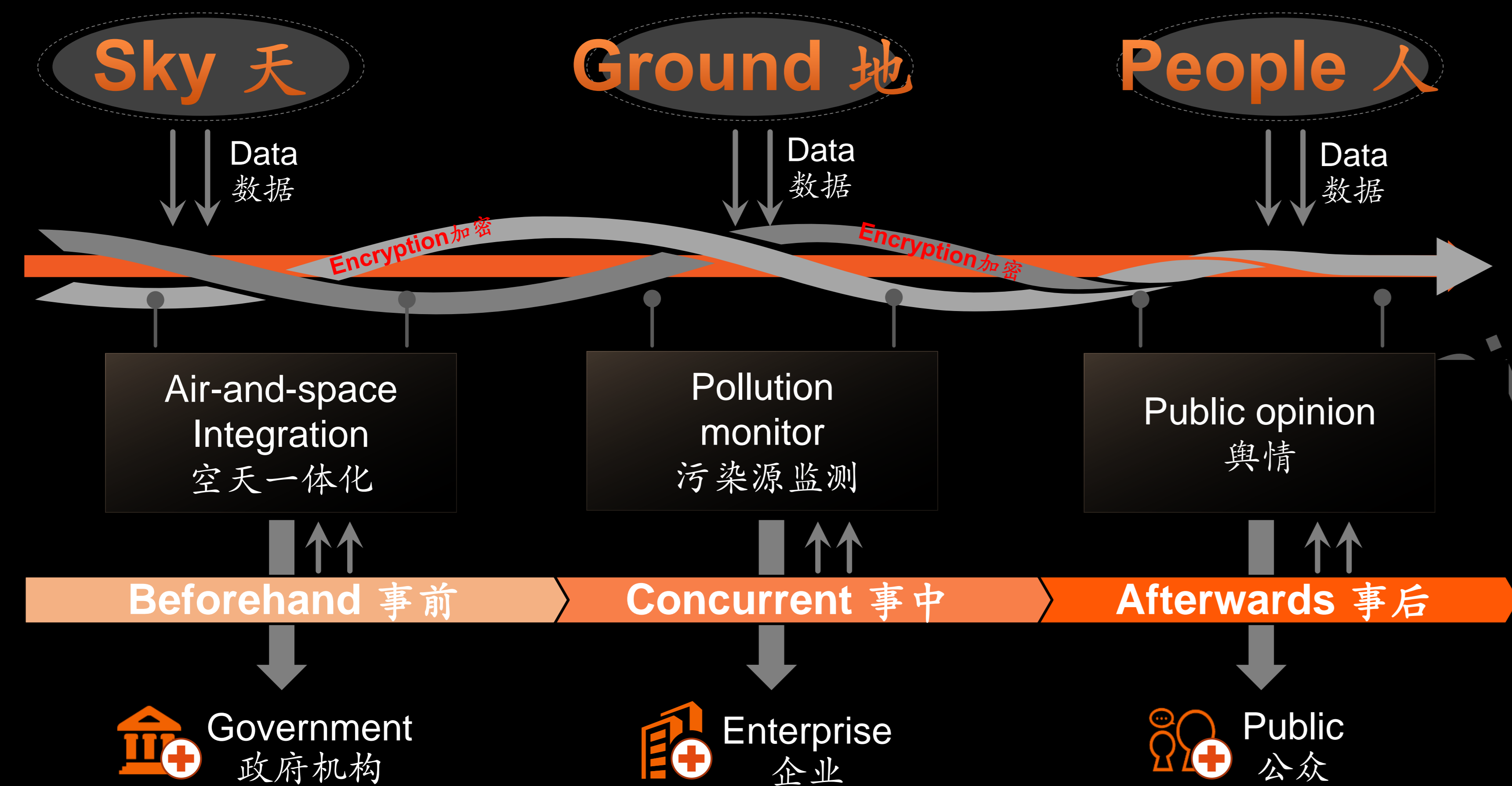
Build trust mechanism and connect different parties

建立信任机制，联接各参与主体

智慧环保平台：建立联接多方的信息共享平台

Case example

应用案例



Impact 效果



Standard data sharing  
标准化数据共享平台



8mn+ data covered  
覆盖超800万数据记录



Real time monitoring  
数据实时监控



## Key message

### 关键点

**Leading technology** with the most comprehensive ZKP solution, <0.05 sec response time, and 100x faster speed with China crypto standards

**技术领先**，业内最强零知识验证算法库，延时<0.05秒，以及百倍国密加速方案

**Largest commercial blockchain platform** with 40k+ nodes across 200+ banks, 200,000+ corporates, and 500 other entities

**世界最大商业区块链平台**，承载4万多个节点，连接200多家银行、20多万家企业，及500多家其他商业与政府机构

**Dozens of applications**, including HK eTradeConnect and OneConnect's China supply chain finance platform with 200,000+ corporates

**已有几十个企业级应用解决方案**，包括香港贸易平台和链接20多万家企业的金融壹账通供应链平台



Thank You

感谢聆听

Ping An Investor Day