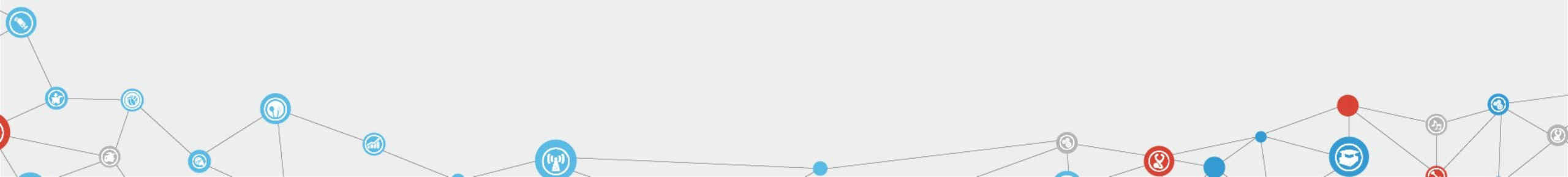




可信区块链推进计划
TRUSTED BLOCKCHAIN INITIATIVES

DLT Interoperability : on-chain & off-chain

Aaron Chu , WeBank



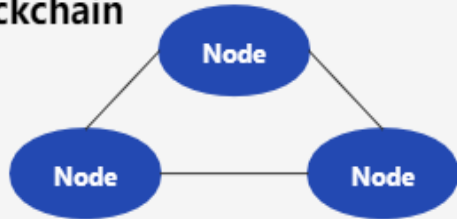
Consortium Blockchain Ecology

Participators

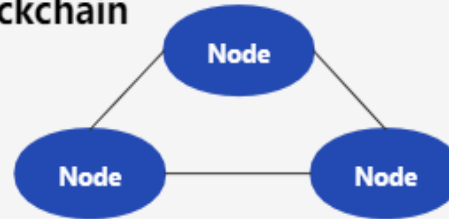


- How to cooperate between heterogeneous participators?

Blockchain



Blockchain

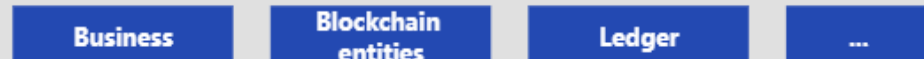


- Is it easy to access blockchain?
- Is there any access control?
- What if the private key leaks or lost?
- Is it easy to develop dapps?

- How can blockchain communicates with each other?

Off-Chain

Blockchain world



Real World



- How to download verifiable data from on-chain to off-chain?
- How to upload data from off-chain to on-chain with trust?
- What about data silos?

Challenges And Solutions

Challenges

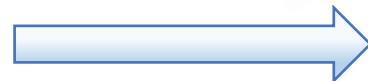
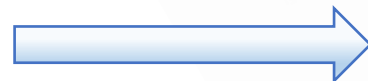
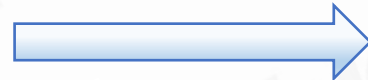
Heterogeneous participators

High entry barriers

Different blockchains

Data usability from on-chain
to off-chain

Data usability from off-chain
to on-chain



Solutions

Consistent governance

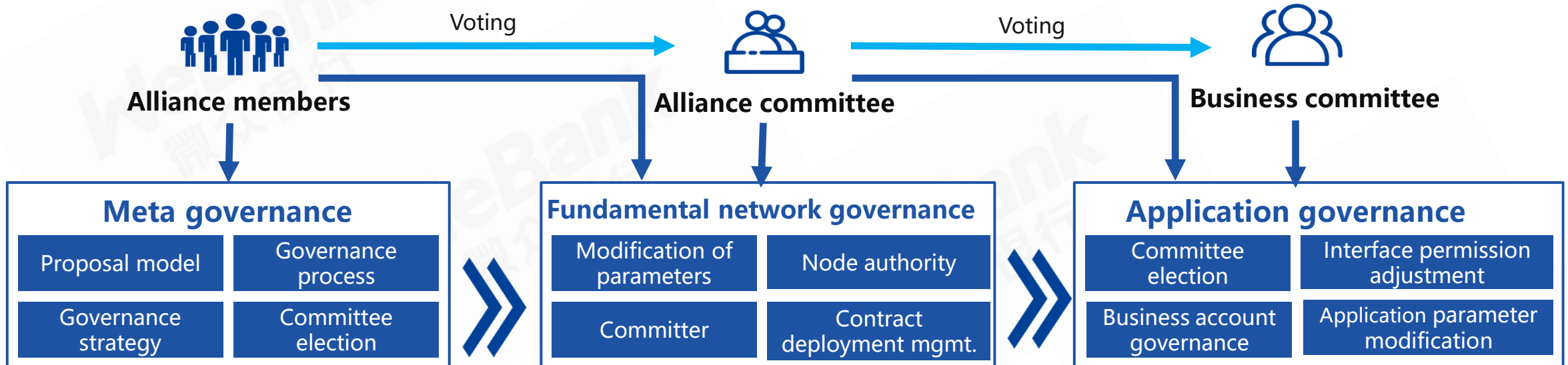
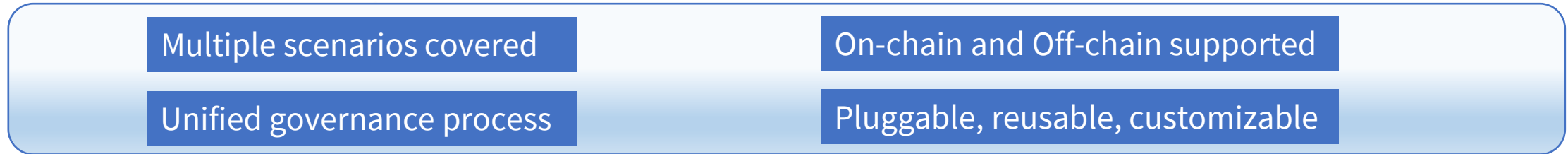
Handy middleware platform
to develop & access

Diversified interchain
collaborations

Trustful exportation of on-
chain data

Trustful importation of off-
chain data

Governance: WeBankBlockchain-Governance(1)





Governance: WeBankBlockchain-Governance(2)

Private key governance

Key management containing mainstream solutions and business models

Certificates governance

Certificate distributions for a variety of algorithms

Account governance

Self controlled, recoverable account for blockchain users

Authentication governance

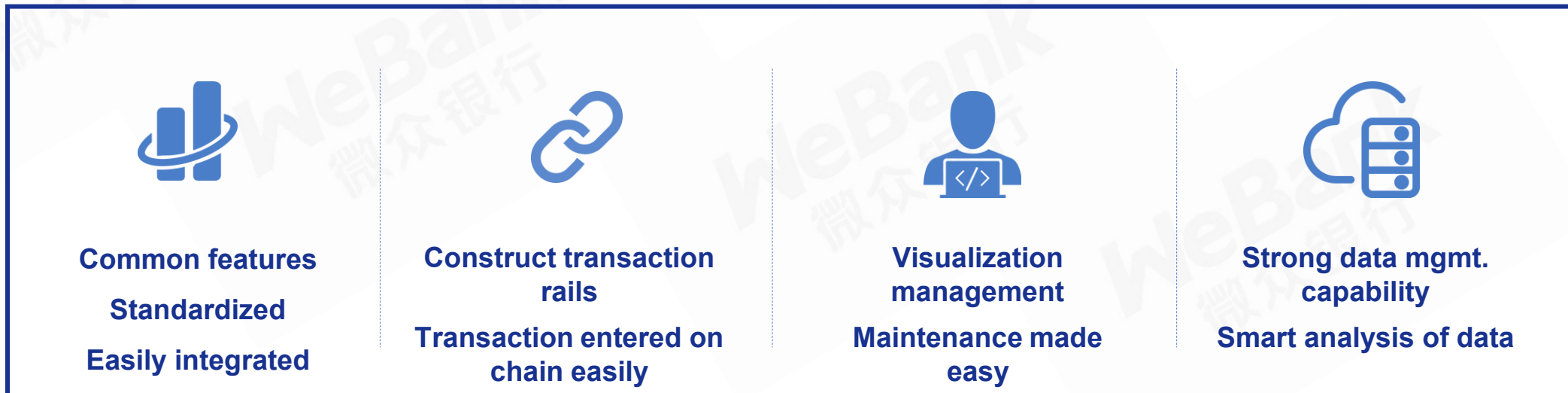
Role based access control solutions for smart contracts

Middleware Platform: WeBASE






70%
Performance
increase

80%
Time saved





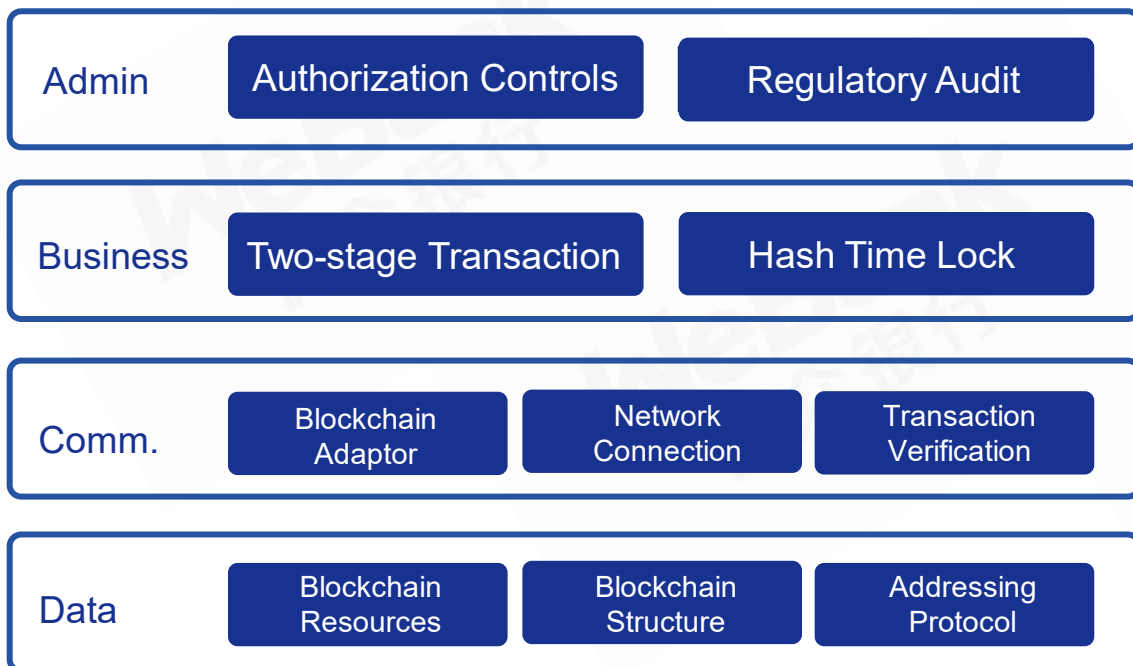
Middleware Platform: WeBankBlockchain-SmartDev

Component development mode	 Smart Contract Library Rich, reusable and more secure functions, low threshold and less workload Development can be completed within 1 week	 Contract Compilation Plugin Immersive coding mode: no tedious operation but only a single command Completed within 1s	 Application Scaffold Configuration-based development, automatic code generation, resulting in lower cost and more business focused Only 1-2 months needed
	VS	Smart contract development	Smart contract compilation
Traditional development mode	Developed within months Manual work, high vulnerability, high threshold and heavy workload	Developed time about 5mins Fragmented environment, tedious operation and Inefficient recompilation	Developed time at least 6 months Heavy workload and high development threshold, code coupling and complex configuration



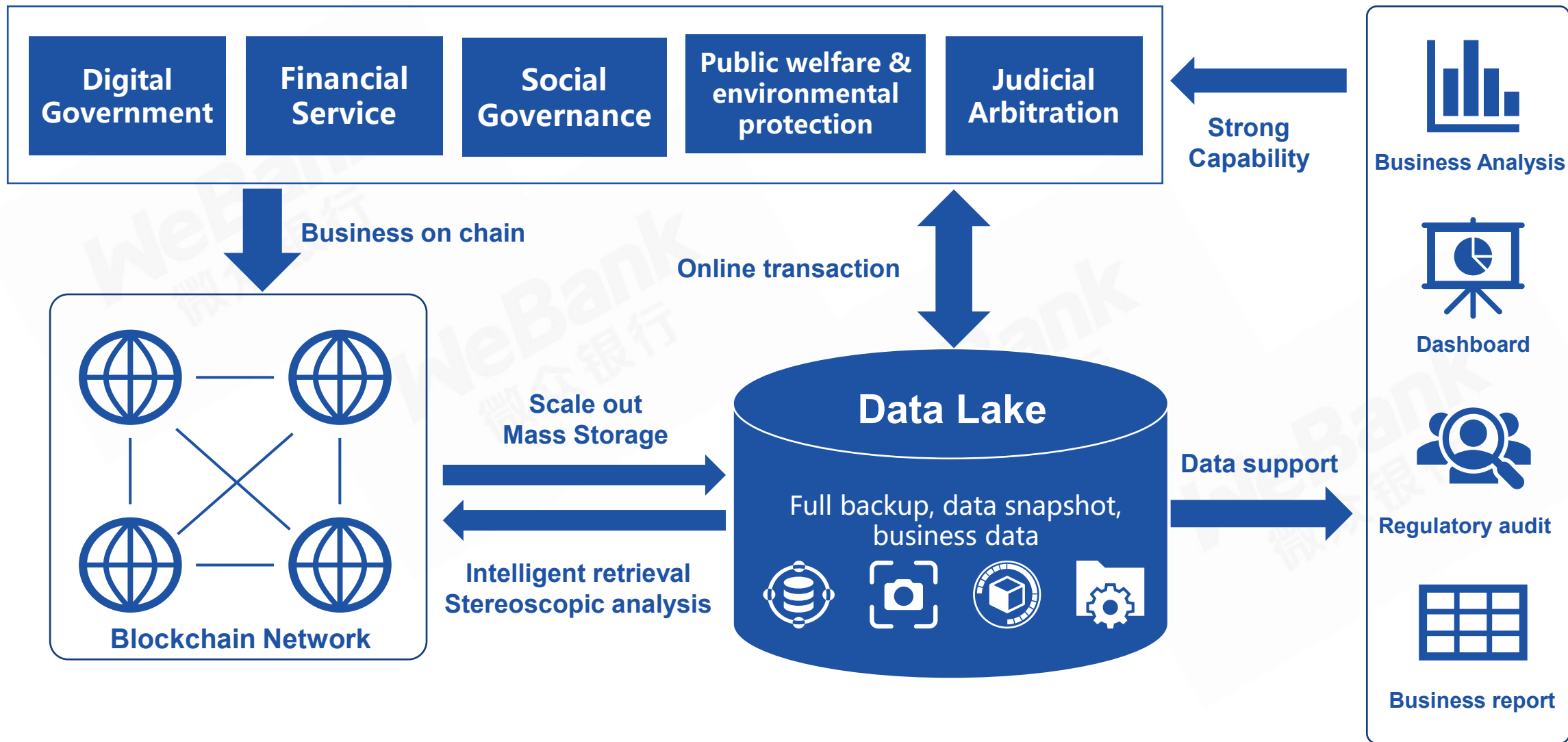


Interchain Collaborations: WeCross

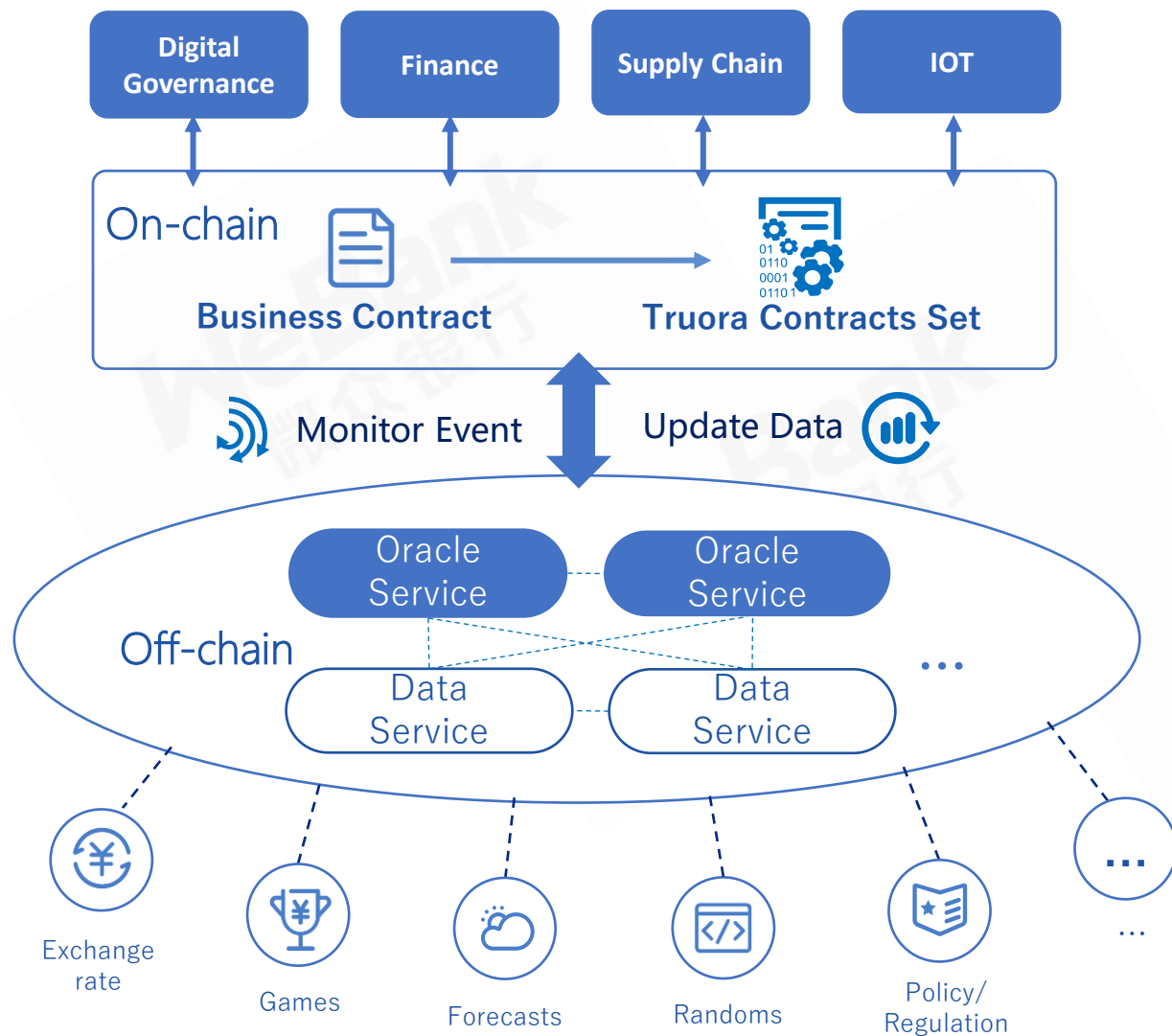


- WeCross offers a common, efficient, and safe cross-chain cooperation mechanism suitable for promoting inter-industry/company/jurisdiction trust transfer and business collaboration
- Supports most mainstream open-source blockchain types, such as FISCO BCOS & Hyperledger Fabric
- Use Cases: Arbitration on blockchain, digital asset conversion, cross-border personal data transfer authorization, etc.

◆◆ Data Exportation: WeBankBlockchain-Data



Data Importation: Truora



- Consortiums are urgently looking for how to move authentic data in the real world on-chain
- Increased demand for an open-source data oracle bot by the community
- WeBank developed a set of oracle bot solutions that combine both centralized and distributed deployment options
- Combines the standards of different data across consortium business cases (e.g. data format, data governance, etc.)

✓ HTTPS	✓ SM	✓ VRF
✓ Multiple Blockchains	✓ Multiple DataSources	✓ Clustered
✓ Security	✓ Efficiency	✓ Trust



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THANKS

