Blockchain Use Cases

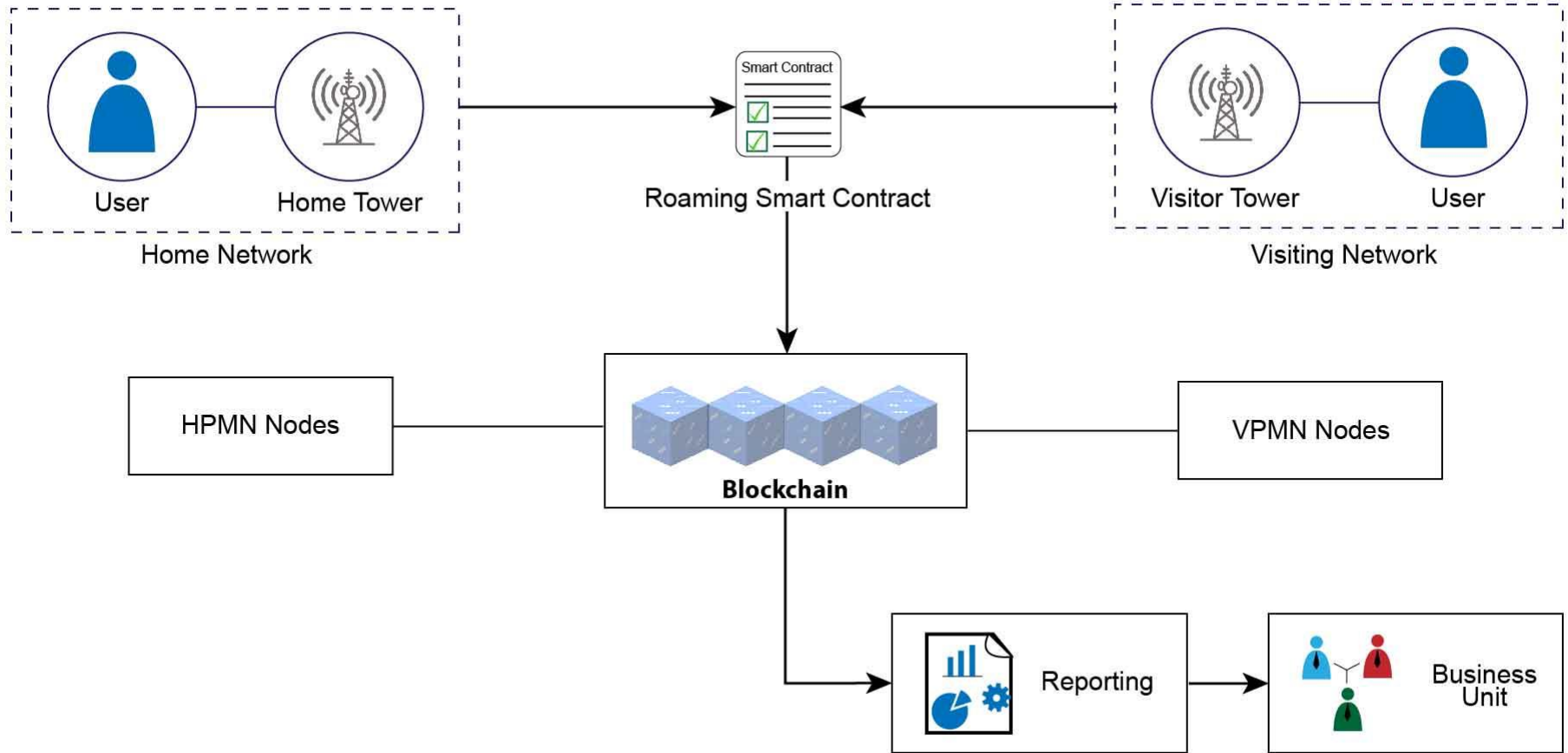Use Cases: Telecom

Blockchain in Roaming Fraud

PROBLEM: Roaming fraud occurs when a subscriber accesses the resources of the Host Network via the Visited Network but the Host Network is unable to charge the subscriber for the services provided, but is obliged to pay the Visited Network for the roaming services. This fraud costs millions of dollars to the telecom industries.

SOLUTION: A permissioned blockchain could be implemented between every pair of operators which have a roaming agreement
- Designated nodes from both operators act as miners to verify the sanctity of each transaction broadcasted on the network.
- The roaming agreement is implemented between the Host Network and the Visited Network as a smart contract that is triggered when a transaction containing the data is broadcasted on the blockchain network.

BENEFITS:

- Instantaneous and verified authorization as well as settlement for roaming.
- Maintains complete transparency for the all the parties involved in the network.

WE 2 BLOCKS

User — Home Tower

Home Network

Smart Contract

Roaming Smart Contract

Visitor Tower — User

Visiting Network

HPMN Nodes

Blockchain

VPMN Nodes

Reporting

Business Unit

Blockchain in Low Power Wide Area Networks

PROBLEM: Network Operators build Low Power Wide Area Networks to tackle demand, traffic and bandwidth requirements. These networks include IoT devices which carry sensitive information

SOLUTION: A Blockchain based peer to peer data storage platform.

- Blockchain network nodes can be represented by single embedded IoT sensors with the ability to verify every block being changed within the blockchain.
- Inbuilt functionalities for management of keys can be used to protect the data.
- Data can be shared with other Telecom industries with the help of tokens.

BENEFITS:

- Permissions provide authentication for IoT devices.
- Performance and Efficiency is increased as real time data can be fetched from the networks.
- It will also allow global sharing of data between multiple telecom industries.
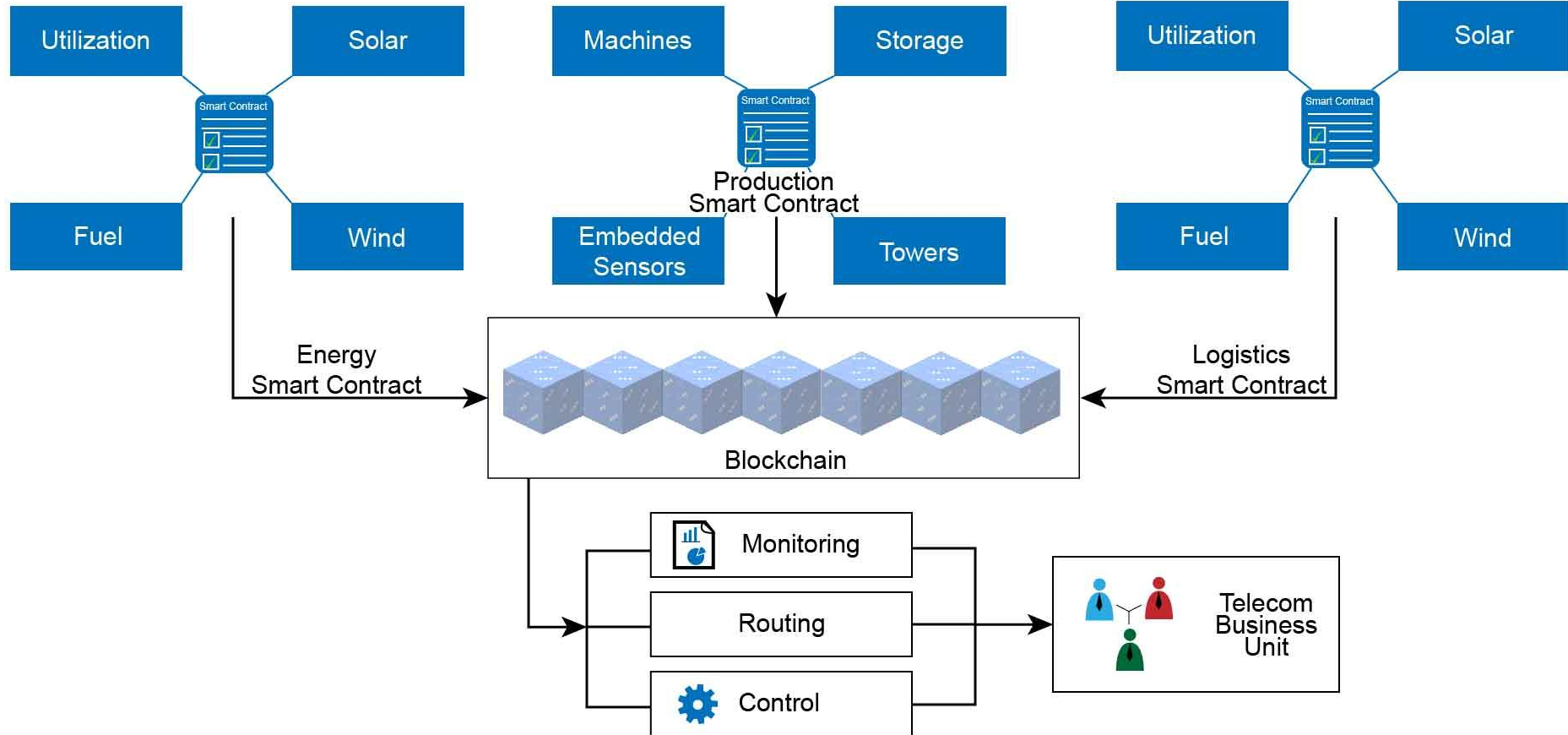
Blockchain in Sim/Smart Cards

PROBLEM: Currently, it's a long and costly process for telcos, if a user wants to shift the carrier. Moreover, users also face a time lapse in changing their telecom provider.

SOLUTION: A Blockchain based peer to peer network for running telecom based smart contracts.

- Initiating inter-carrier smart contracts between telecom providers and users.
- Users can easily shift from one carrier to another by accepting the smart contracts initiated by multiple telecom industries.
- Telecom industries will also have flexibility to offer multiple packages by initiating multiple smart contracts.

BENEFITS:

- Cost effective and reduces the time taken for the process.
- Transparency of user activity will also help telecom industry in making intelligent decisions to retain customers.
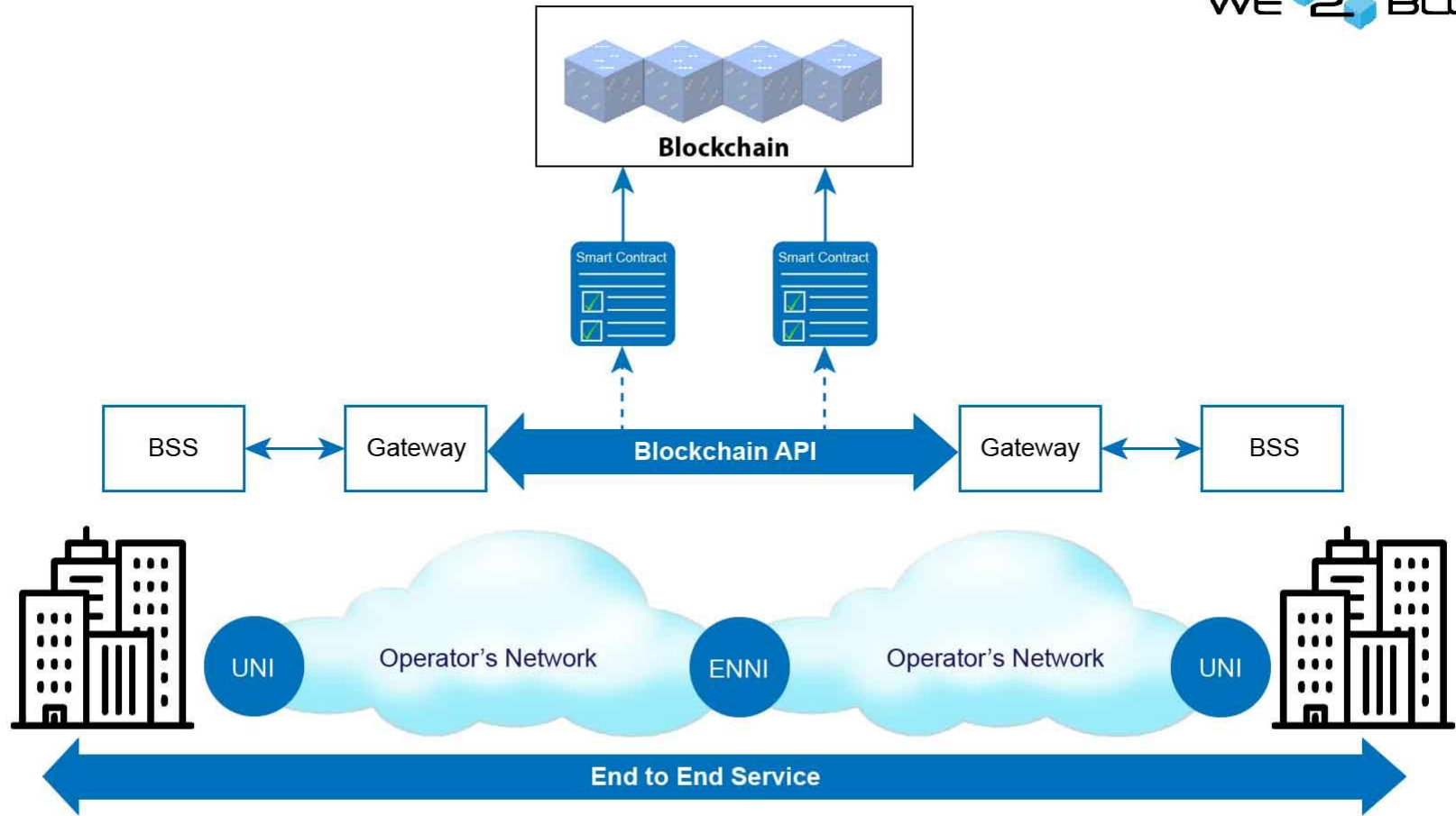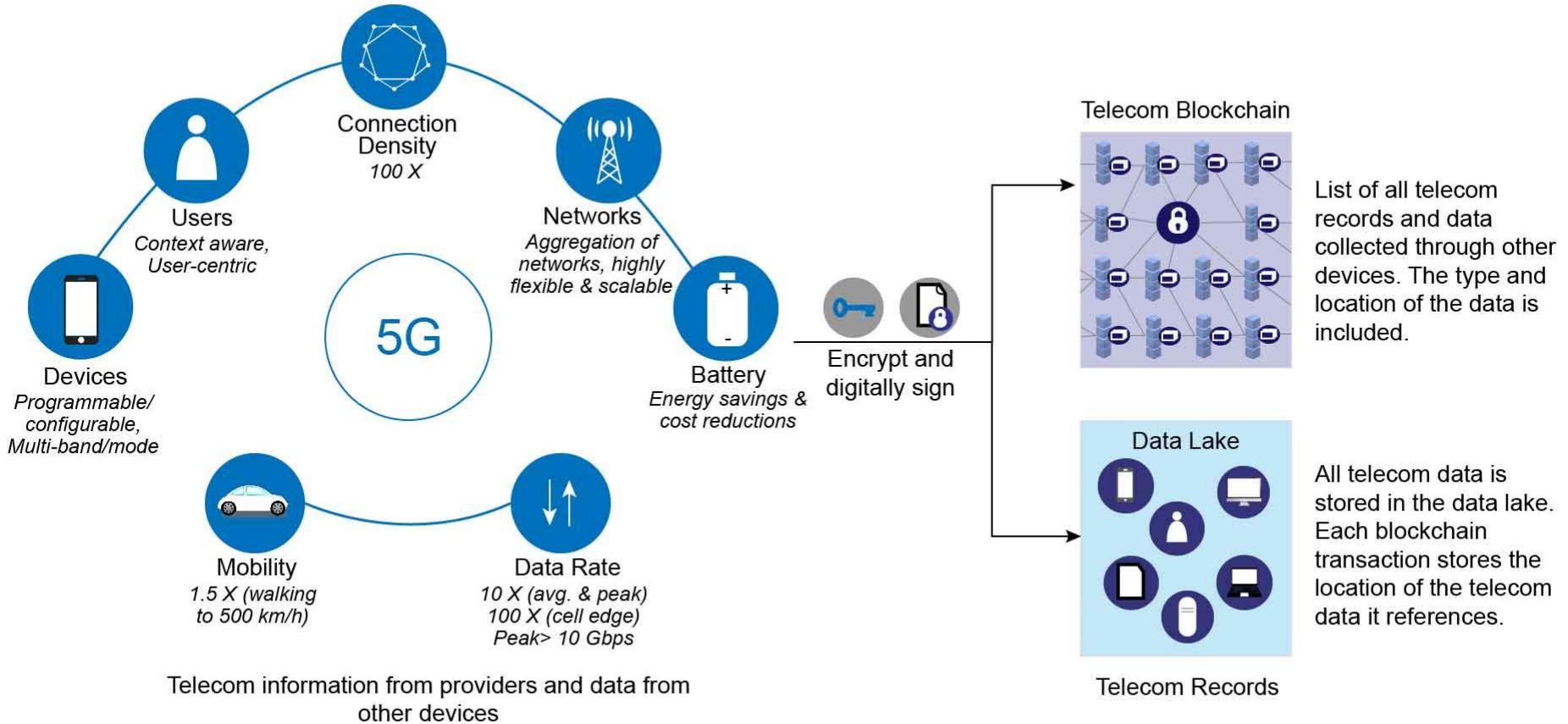
Blockchain for 5G Enablement

PROBLEM: The system is centralized in a client-server model where the rules stored on the server are pushed to the client. This causes delays and does not allow for seamless provisioning between access networks for the device.

SOLUTION: A Blockchain based peer to peer network to integrate multiple access points.

- Each access point (WiFi router, Cell tower etc.) can serve as a node in the network monitoring the devices.
- Rules and agreements between the various access providing networks can be coded as smart contracts.
- Devices can broadcast their identities and location to get the best and formulated service.

BENEFITS:

- This also allows for seamless rating and charging of all services between the various access nodes.
- This will also reduce the cost borne by telecom and customers.

WE 2 BLOCKS

Connection Density
100 X

Users
Context aware, User-centric

Devices
Programmable/ configurable, Multi-band/mode

5G

Networks
Aggregation of networks, highly flexible & scalable

Battery
Energy savings & cost reductions

Encrypt and digitally sign

Mobility
1.5 X (walking to 500 km/h)

Data Rate
10 X (avg. & peak)
100 X (cell edge)
Peak> 10 Gbps

Telecom information from providers and data from other devices

Telecom Blockchain

List of all telecom records and data collected through other devices. The type and location of the data is included.

Data Lake

All telecom data is stored in the data lake. Each blockchain transaction stores the location of the telecom data it references.

Telecom Records

THANK YOU

For more information contact
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