

PROBLEM & PROBLEM UNDERSTANDING

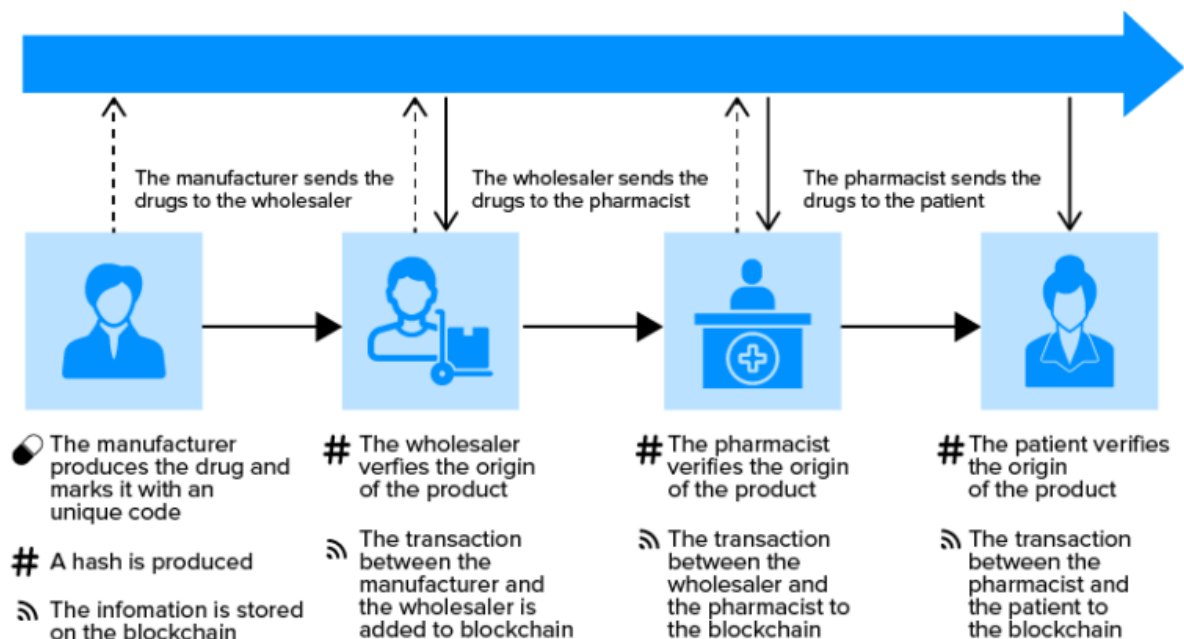
business requirements

Date	19.10.2023
Team ID	NM2023TMID08532
Project Name	Drug Traceability
Maximum Marks	

Business requirements:

Implementing a block chain powered library management system would require a set of business requirements to ensure its efficiency. Here are some key points, decentralized catalogue, smart contracts, immutable records, identify records, identify verification, interoperability, privacy and security, tokenization and sustainability.

Immutable catalogue:



Efficient transactions:

Real-time Data Updates: Ensure that the blockchain system supports real-time data updates. This requirement is critical to maintaining up-to-date information about drug movements, changes in ownership, and quality control data.

Scalability: The blockchain solution should be scalable to handle a high volume of transactions, especially in large pharmaceutical supply chains. It must handle the growing number of drugs being tracked without compromising performance.

Interoperability: Ensure that the blockchain system can seamlessly integrate with existing supply chain management systems, databases, and IoT devices. This enables efficient data sharing and avoids the need for redundant data entry.

User-Friendly Interfaces: Implement user-friendly interfaces for stakeholders at different points in the supply chain. This ensures that data entry and retrieval processes are intuitive, reducing the likelihood of errors.

Smart Contracts: Utilize smart contracts to automate certain transaction processes. For example, implement contracts that trigger automatic verification and validation processes for product authenticity and safety, thus reducing manual intervention and delays.

Consensus Mechanisms: Select an appropriate consensus mechanism (e.g., proof of authority, proof of stake) that aligns with your efficiency goals. Some consensus mechanisms are more energy-efficient and faster than others.

High Throughput: Choose a blockchain platform or technology that can handle high throughput of transactions per second. This is especially crucial in supply chains where rapid movements of goods occur.

Data Compression: Implement data compression techniques to minimize the size of transactions recorded on the blockchain. This reduces the storage and processing requirements, making transactions more efficient.

Tamper-Proof Records: Ensure that all transactions are recorded in a tamper-proof manner, preventing unauthorized access and changes to the data. This is essential for maintaining data integrity.

Access Control and Permissions: Implement access control and permission management to restrict who can read, write, and update data on the blockchain. This helps protect sensitive information and ensures that only authorized parties can participate in transactions.

Data Retention and Pruning: Define a data retention policy that allows for the efficient pruning of historical data that is no longer needed, reducing the storage burden and enhancing system performance.

Energy Efficiency: Consider the energy consumption of the blockchain network, as excessive energy use can affect efficiency. Select energy-efficient consensus mechanisms and hardware if applicable.

Auditability: Ensure that all transactions are auditable. This allows for easy tracking and verification of the entire transaction history, which can be essential for regulatory compliance and dispute resolution.

Security Measures: Implement robust security measures to protect the blockchain system from cyber threats and data breaches. Security is critical for maintaining the trustworthiness of the system.

Regulatory Compliance: Ensure that the blockchain solution complies with industry regulations and standards related to drug traceability, data privacy, and cybersecurity.