COMP6452 - Group 23
Milk chain

(Food supply chain)

Presentation 1

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Kaiying Wu (Kathy)	**z5251751**	**-**	**Chosen Domain, Challenges & Proposal Plan**
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Challenges in the Milk Supply Chain

Key Stakeholders/Participants:

Farmers, Processors, Retailers, Consumers

Challenges

#1: Lack of Transparency & Traceability

Tracing milk from source to consumer is unclear and complex.
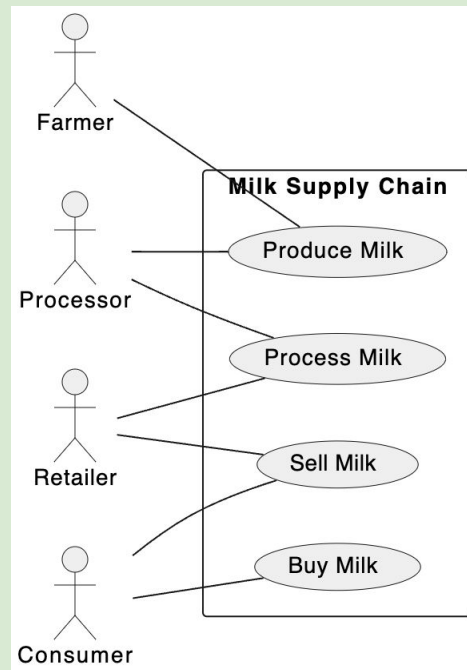
#2:Centralization of Operations

Centralized operations lead to inefficiencies and slower responses.

#3: Need for Multi-Party Interactions

The milk supply chain requires seamless interaction between multiple parties.

#4: Data Immutability

Maintaining an accurate record of a product's journey is crucial.

Functional & Non-Functional requirement

Functional:

- The system should be able to record and store milk source data.
- The system should be able to record and track the journey of the milk.
- The system should be able to report any anomalies at any point of the supply chain.

Non-Functional:

- The system must ensure the confidentiality, integrity, and availability of data.
- The system must be scalable and maintain high performance given the high volume of transactions that can occur in the milk supply chain.
- The system must be interoperable with existing IT infrastructure used by all parties.

Blockchain Suitability Assessment
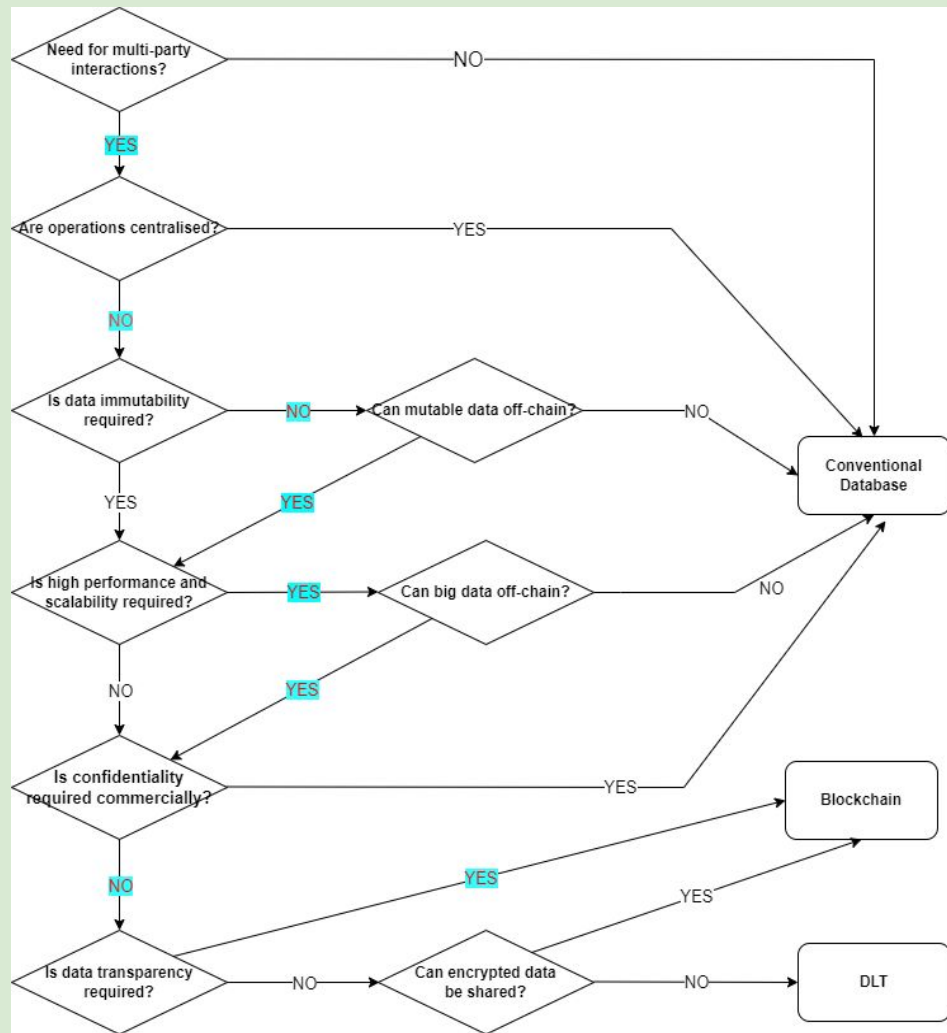
Main Design - System Architecture Diagram

① Stakeholders register their details using our API

② Then Processor will handle the post-production of milk and packaging and shipping

③ Retailer then sells milk

④ Finally customer consumes milk.

⑤ Real-time data monitored by IoT devices, these data are sent to SC via Oracle.

⑥ Mutable data and big data are managed through API, Oracle can read data from the database and send it to SC.

⑦ Stakeholders report the incident through the API, and Oracle passes the Incident information to the smart contract.

Main Design - Sequence diagram
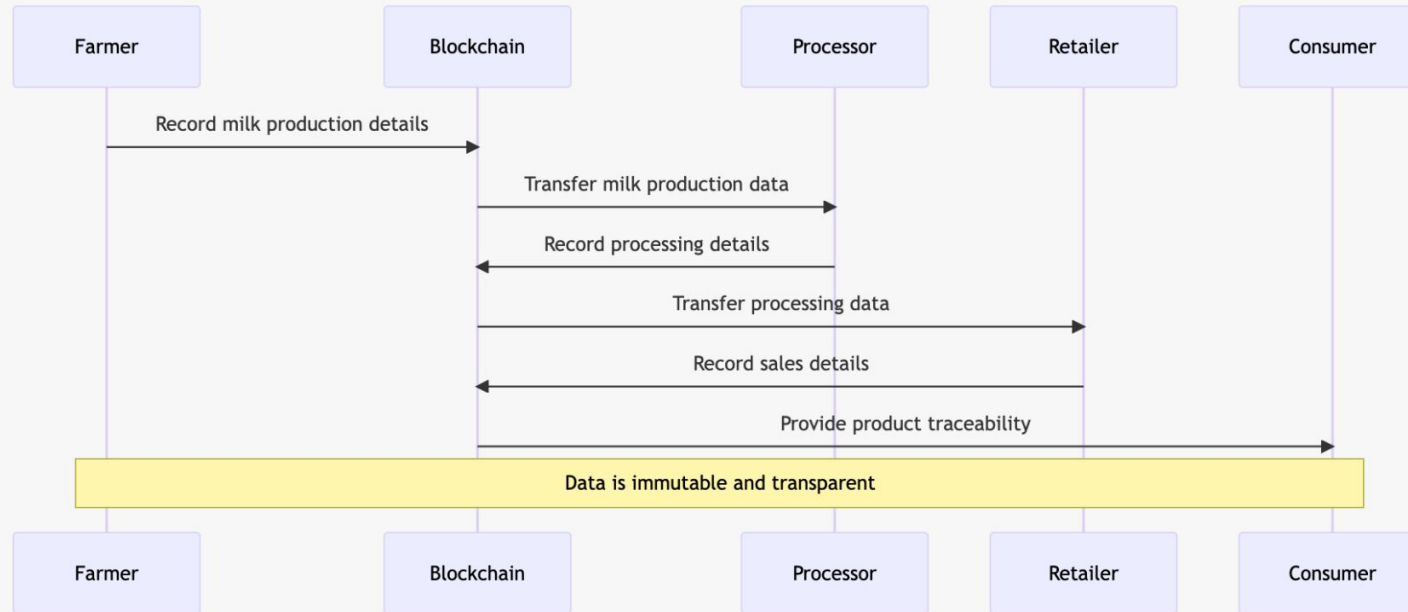
Alternative Design
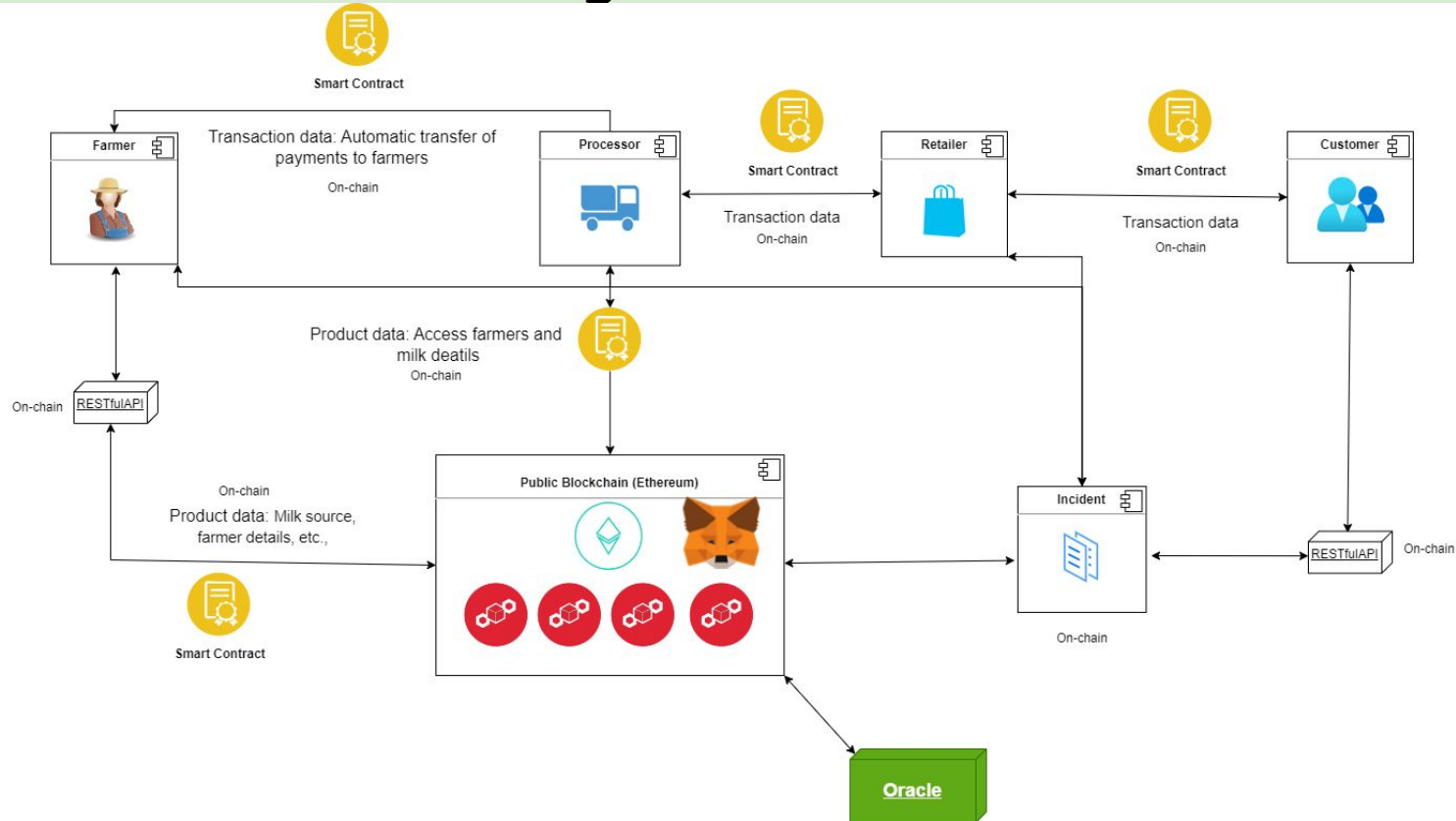
Comparison

	Privacy	Scalability	Interoperability
Main Design	⊕⊕⊕⊕⊕	⊕⊕⊕⊕	⊕⊕⊕⊕
Alternative design	⊕	⊕⊕	⊕⊕⊕⊕

Proposed Development Plan

ID	Name	Resources	Progress %	Duration	Start Date	End Date
11	▼ Planning & Architectural Design		100	14 days	Jun 12, 2023	Jun 25, 2023
12	Reasearch & Choose Domain	Eric,Kathy,Kilam,Tony	100	3 days	Jun 12, 2023	Jun 14, 2023
13	Determine Functional & Non-Functional Req...	Eric,Kathy,Kilam,Tony	100	4 days	Jun 15, 2023	Jun 18, 2023
17	Summarise Chosen Domain Challenges	Kathy	100	1 day	Jun 19, 2023	Jun 19, 2023
16	Summarise Function & Non-Functional Requ...	Eric	100	1 day	Jun 19, 2023	Jun 19, 2023
18	Summarise Suitability Sequence	Tony	100	1 day	Jun 19, 2023	Jun 19, 2023
14	Suitability Architecture Design	Eric,Kathy,Kilam,Tony	100	5 days	Jun 20, 2023	Jun 24, 2023
15	Compare Designs & Determine Main Design	Eric,Kathy,Kilam,Tony	100	3 days	Jun 23, 2023	Jun 25, 2023
1	▼ Development Phase		0	15 days	Jun 27, 2023	Jul 11, 2023
2	Familiar Blockchain Platform	Tony,Kilam,Eric,Kathy	0	4 days	Jun 27, 2023	Jun 30, 2023
3	Develop User Interface	Eric,Kathy	0	6 days	Jun 29, 2023	Jul 04, 2023
4	Create Product & Transaction SC	Kilam,Tony	0	5 days	Jul 01, 2023	Jul 05, 2023
21	Create Stakeholders Contract	Eric,Kathy	0	3 days	Jul 05, 2023	Jul 07, 2023
5	Develop database	Kilam,Tony	0	6 days	Jul 06, 2023	Jul 11, 2023
19	Create API	Eric,Kathy	0	3 days	Jul 08, 2023	Jul 10, 2023
20	Connect API	Kilam,Tony	0	3 days	Jul 09, 2023	Jul 11, 2023
22	▼ Testing Phase		0	8 days	Jul 17, 2023	Jul 24, 2023
23	Testing All of the Smart Contracts	Eric,Kathy,Kilam,Tony	0	4 days	Jul 17, 2023	Jul 20, 2023
24	Testing Backend Server	Eric,Kathy,Kilam,Tony	0	4 days	Jul 21, 2023	Jul 24, 2023
9	▼ Deployment Phase		0	2 days	Jul 25, 2023	Jul 26, 2023
10	Deploy contract to metamask	Eric,Kathy,Kilam,Tony	0	2 days	Jul 25, 2023	Jul 26, 2023

Thank you.

Q & A ?