



THE CHINESE UNIVERSITY OF HONG KONG, SHENZHEN

MDS 6117

BLOCKCHAIN TECHNOLOGY AND DEVELOPMENT

Assignment 2

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1 Question 1

Deloitte's Blockchain Assessment Framework Table

INDUSTRY FOR BLOCKCHAIN APPLICATION:

Supply chain trace system

- 1 Intermediary: **Yes** - intermediaries such as third-party inspection agencies are added for trust in responsibility confirmation, and increase latency, fees, human resources.
- 2 Transparency: **Yes** - raw material supplier, product manufacturer, logistic provider, distributor, retailer, customer, etc. are involved in the supply chain and transaction. Higher transparency would increase trust in the system, and speed up the trace process when quality problems happen.
- 3 Golden Source: **Yes** - common information such as product id, product size, temperature, humidity, weight, produce time is stored across the participants such as supplier, manufacturer, logistic provider and retailer. Product information has to be gathered from multiple sources for tracing. Each member also stores a copy of the product details.
- 4 Manual Processing: **Yes** - it is required throughout the life-cycle of the process, which is paper-intensive with product details. Manual processing is performed at the product record.
- 5 Trust: **Yes** - multiple participants are involved in the supply chain and upload information/ issue update. Since these may be unknown to each other, there is a lack of trust and possibility of fraudulent activities.
- 6 Authentication: **Yes** - The product information, validations report, logistic address, bills, etc. are all paper-based and require documentation. This is not due to regulatory reporting requirements.
- 7 Time Sensitivity: **Yes** - it will help in providing enhanced customer experience and responsibility confirmation process, and reduce the exposure risk of quality problems if the recording process is in real time.

2 Question 2

UML Use Case Diagram for Blockchain

The blockchain application is the supply chain trace system. The use case diagram is a little bit messy. It includes five participants: supplier, manufacturer, logistic provider, retailer and customer. All the users can create account and login and query product information, which contains raw material, semi-product, product and logistic information. All but the customer can query record.

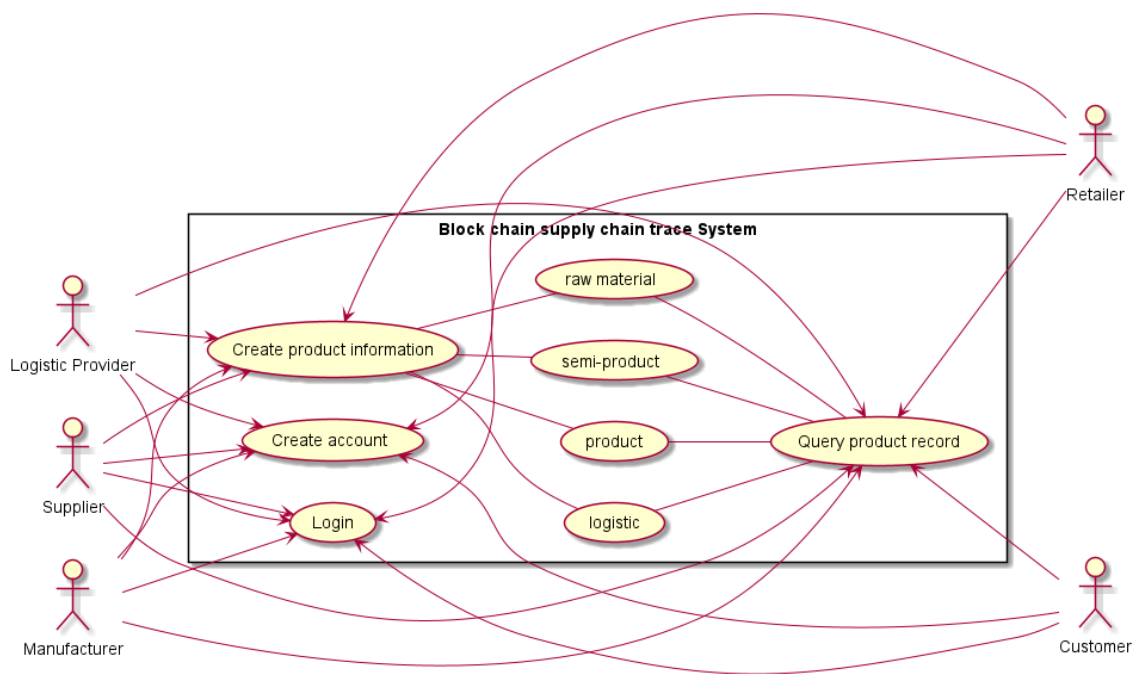


Figure 1: Use case diagram