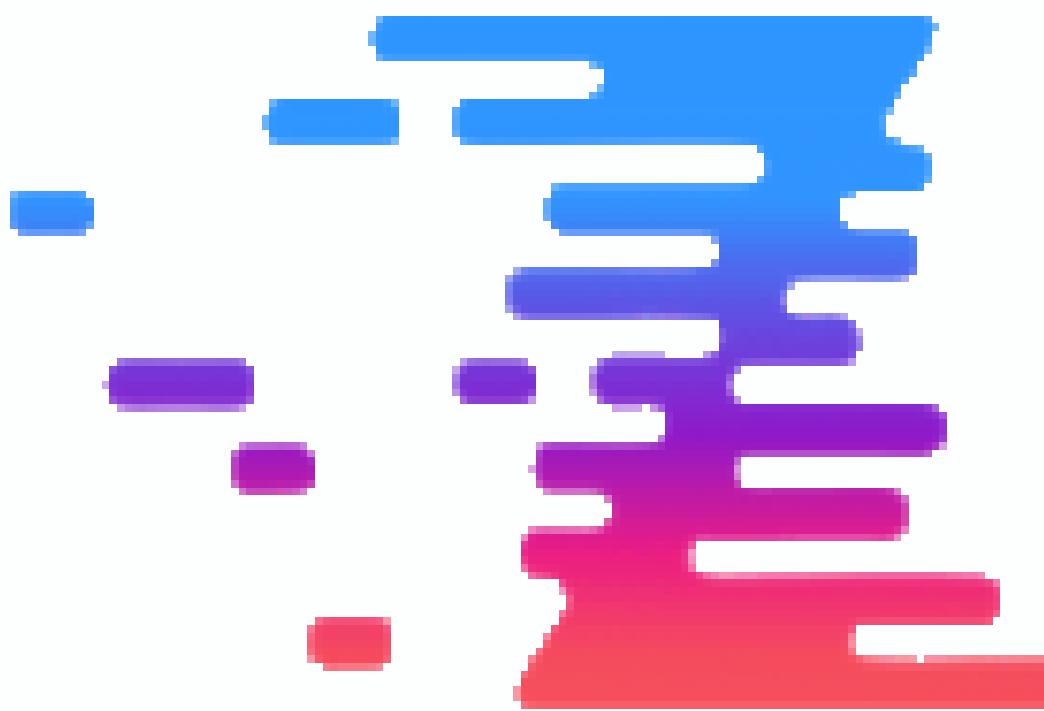


ZENO

**A Blockchain based Decentralized Supply chain
and logistics application for asset tracking**



OUR TEAM

Prathamesh Pawar

2020400040

Harsh Patil

2020400037

Yash Pabari

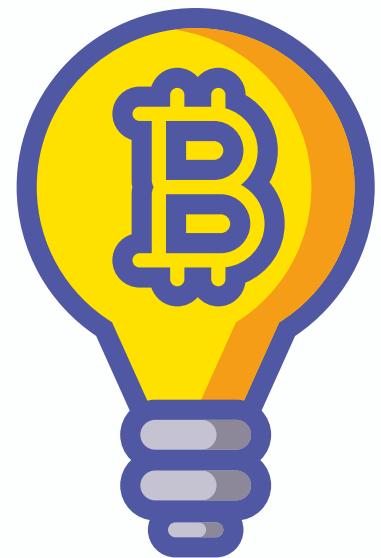
2020400030



Prof. Varsha Hole

Mentor

AGENDA



Overview for Project Idea

- **About**
- **Problem Definition**
- **Literature Survey**
- **Market Survey**
- **Scope of project**
- **Objectives**
- **Proposed system**
- **Project Timeline**
- **References**

PROBLEM DEFINITION

COMPLEX, FRAGMENTED, UNDER PRESSURE

Products reach consumers through a chain of companies involved, which typically includes manufacturers, logistics firms – who provide storage, distribution and transport – and retailers. Not surprisingly, the whole system is highly complex.

DISRUPTED MARKET

COVID-19 resulted in significant geographical shifts in supply and demand, which in turn has created problems for finely tuned global supply chains. Trends that were apparent pre-pandemic, such as increases in online shopping and driver and other skill shortages, are now causing real problems.

Second, the economic and business environment became more challenging.

For example, in the UK and the rest of Europe, supply chain pressures were caused by Brexit as a result of increases in red tape and cross-border checks. More widely, firms continue to grapple with a range of international business challenges ranging from fluctuating exchange rates to the building of global management teams.



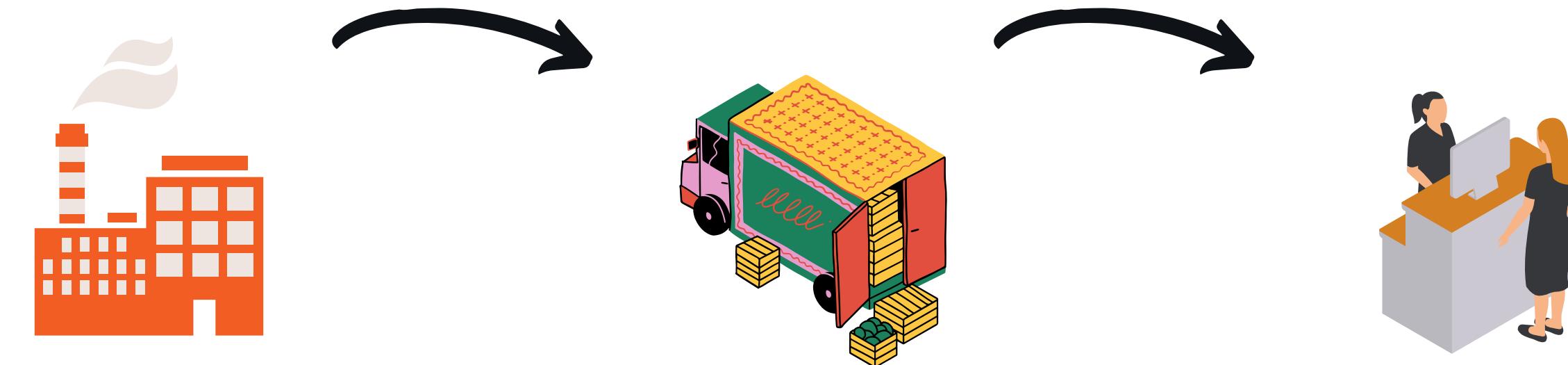
PROBLEM DEFINITION



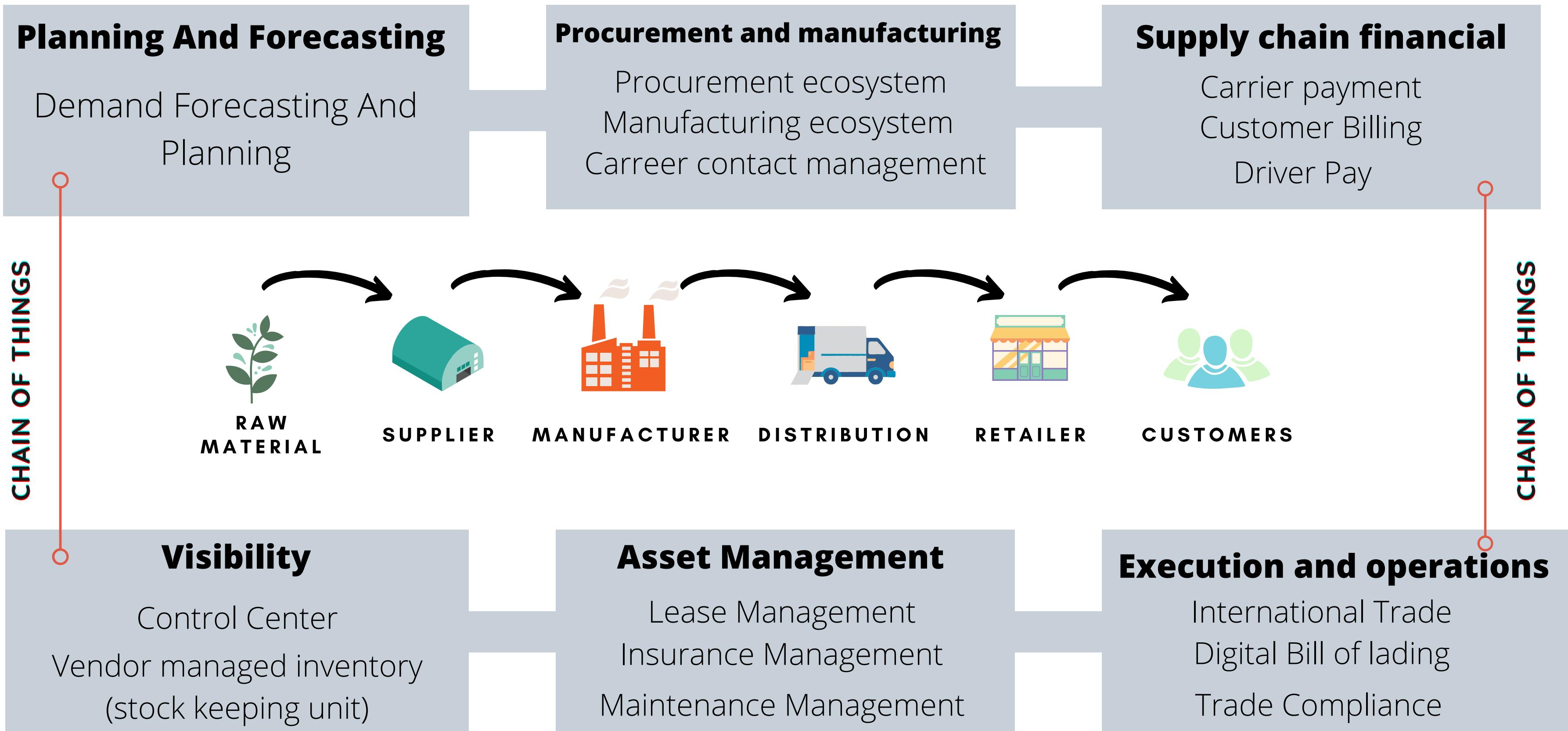
TRANSPERNCY AND TRACEABILITY

Companies are under pressure from governments, consumers, NGOs, and other stakeholders to divulge more information about their supply chains, and the reputational cost of failing to meet these demands can be high.

For example, food companies are facing more demand for supply-chain-related information about ingredients, food fraud, animal welfare, and child labor.



BLOCKCHAIN OPPORTUNITIES ACCROSS THE SUPPLY CHAIN PLATFORM



BLOCKCHAIN ENABLED SUPPLY CHAIN PLATFORM

KEY FEATURES & ENABLER

VALUE ADD



Digital
Ownership
Certificates



Asset &
Assembly
Tracking



Proof of
Origin



Trusted
Maintenance
Tracking



Integrated
Financial
Transactions



Collaborative
Product
Master Data

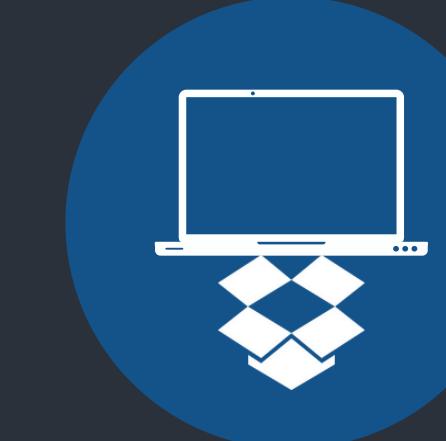
ENABLER



Integration In Existing
Manufacturing Process



Trusted
Devices

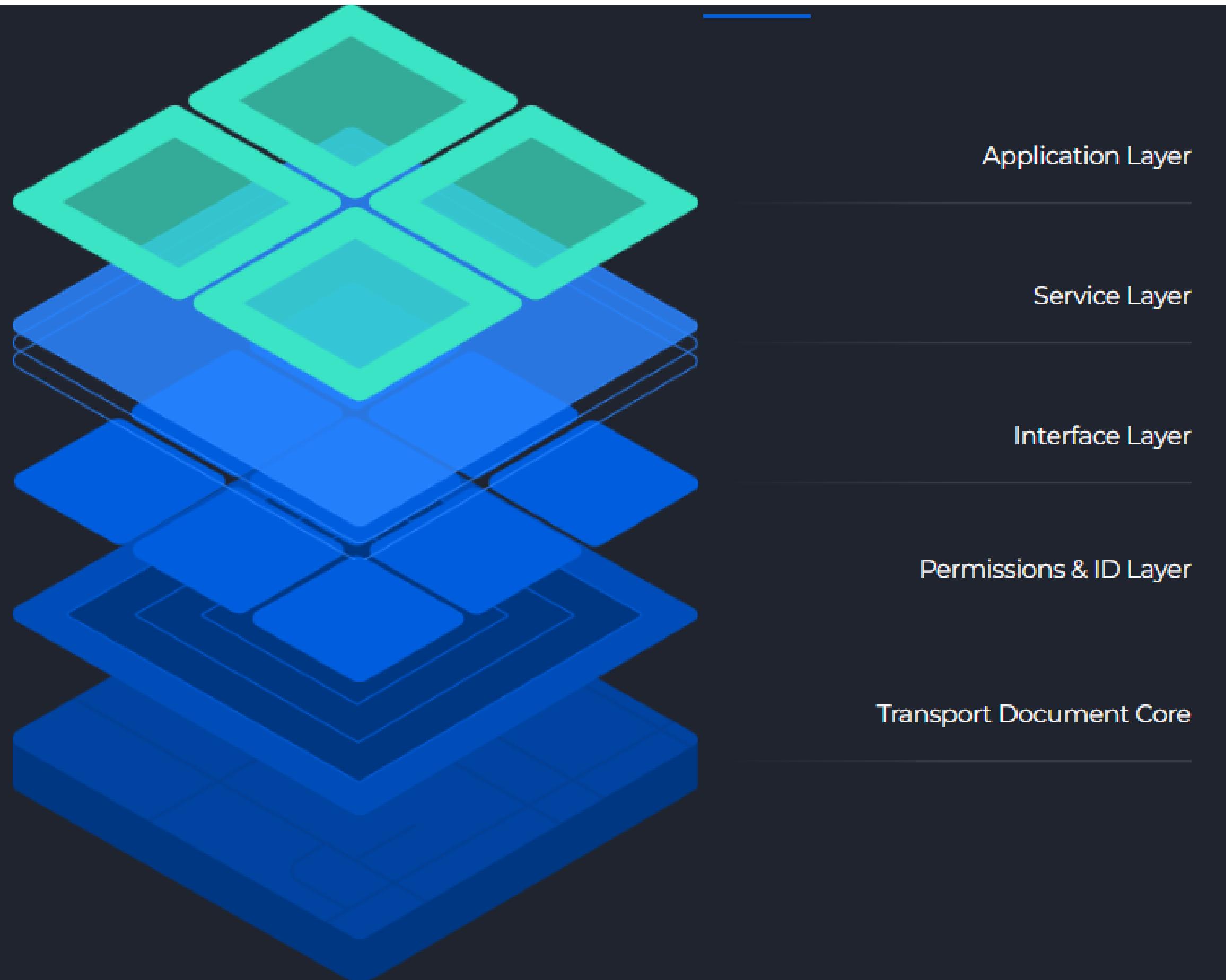
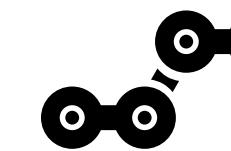


Asset
Management
System



In The Field
Interface

ABOUT THE PROJECT



Application Layer

Service Layer

Interface Layer

Permissions & ID Layer

Transport Document Core

Binds services together with application-specific logic for powerful Apps

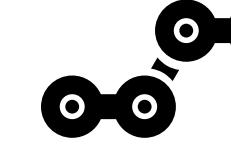
Connects applications with interface APIs for specific needs like payment processing

Modular APIs for reading and writing data include: Document, data query, data transit

Wraps the core application in blockchain backed-access control logic

Consists of smart contracts and additional logic, acting as control of shipment or any kind of data

ABOUT THE PROJECT



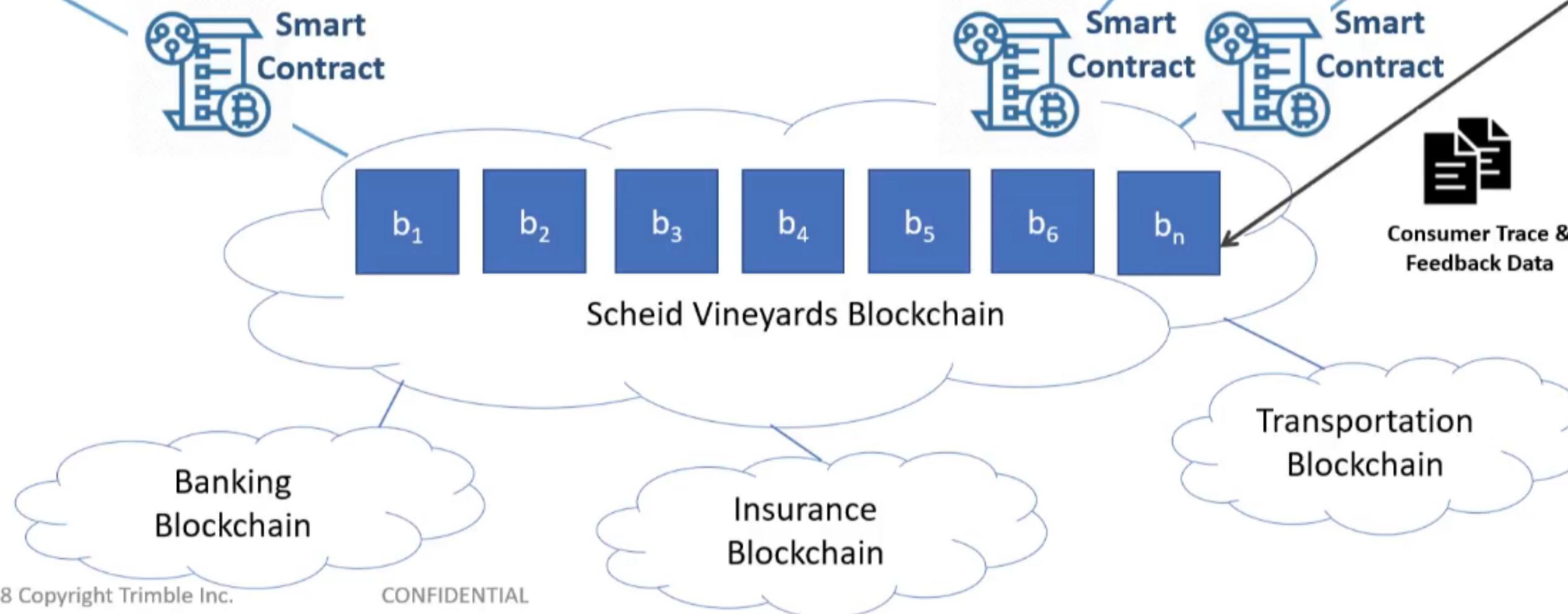
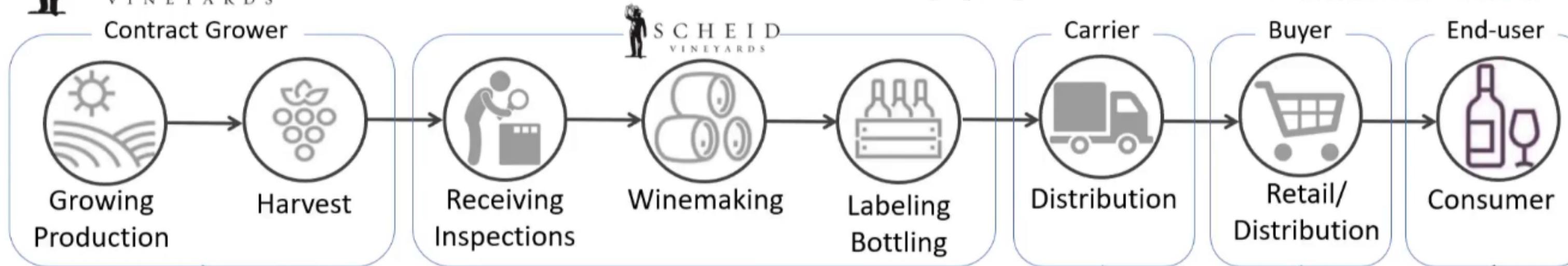
S C H E I D
VINEYARDS

Contract Grower

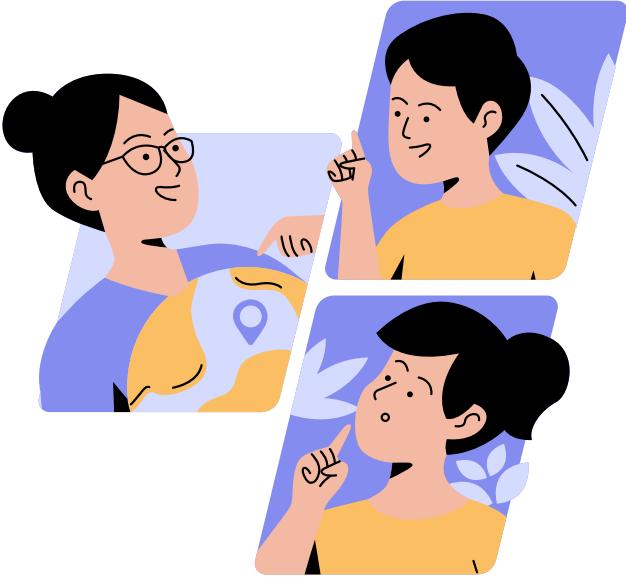
Growing Production

Blockchain Enabled Supply Chain

HarvestMark
A DIVISION OF TRIMBLE



Literature Survey



01

Nowadays, [9] counterfeit products are growing exponentially in online and black-market. The block market is a biggest challenge in supply chain. The government regulations cannot control counterfeit products. Therefore, there is a need of an approach for detecting counterfeit products and providing security techniques to alert both manufacturer and consumer in supply chain.

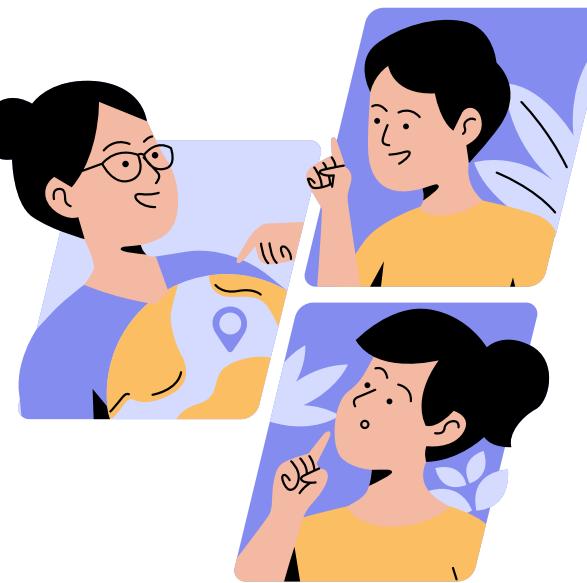
02

Smart contract is a software code written within every block to ensure immutable and transparent applications and also eliminate the need of middlemen and saves lot of time and money .[7] For example, if two parties are willing to buy and sell a property then they need a middle man, physical appearance of all the parties, need to spend lot of time and money and paper work. Still there are chances of frauds in such environment. Smart contracts eliminate all these issues by making contracts on Blockchain network.

03

The main purpose of the [8]is to integrate most of the parts of a supply chain of a manufacturing industry that leads to a green economy. The mathematical model shown in this paper is applicable for any type of products at different stages of the supply chain in different time periods. Computational experiments show that when number of returned product increases, the total profit increases.

Market Survey



01

Companies are under pressure from the government, consumers, NGOs, and other stakeholders to divulge more information about their supply chains, and the reputational cost of failing to meet these demands can be high. [1]

02

Over the last decade, numerous scandals have inflicted considerable damage on the reputations of companies. Notable examples include the Rana Plaza factory collapse in the fast fashion industry, slave labour in the Thai seafood industry, and deforestation in Malaysia and Indonesia. [2]

03

If transparency is a growing business imperative, why aren't more companies doing it and why is the transition to transparent supply chains so slow? One reason is supply chains were not designed to be transparent. Companies and suppliers have feared that divulging too much information would undermine their competitive advantage or expose them to criticism. [5]

SCOPE OF THE PROJECT

what do you mean by trust?

- 01 **Crowdfunding Sector**
- 02 **Insurance Claims**
- 03 **Banking - Finance Sector**
- 04 **Auctions - safe bidding and avoid third party auctioneer**
- 05 **Business scalability - B2B**

OBJECTIVES - WHAT DO YOU MEAN BY "TRUSTWORTHY" ?

01



Supplier Management

Transparency in the bidding process
thanks to a record of every transaction

02



Preventing Fraud

Fraudulent entries will be detected
by an absence of hashing in the
blockchain

03



Smart Contracts

Blockchain ledger verifies when a
condition is met and auto-executes
terms

04



Traceability

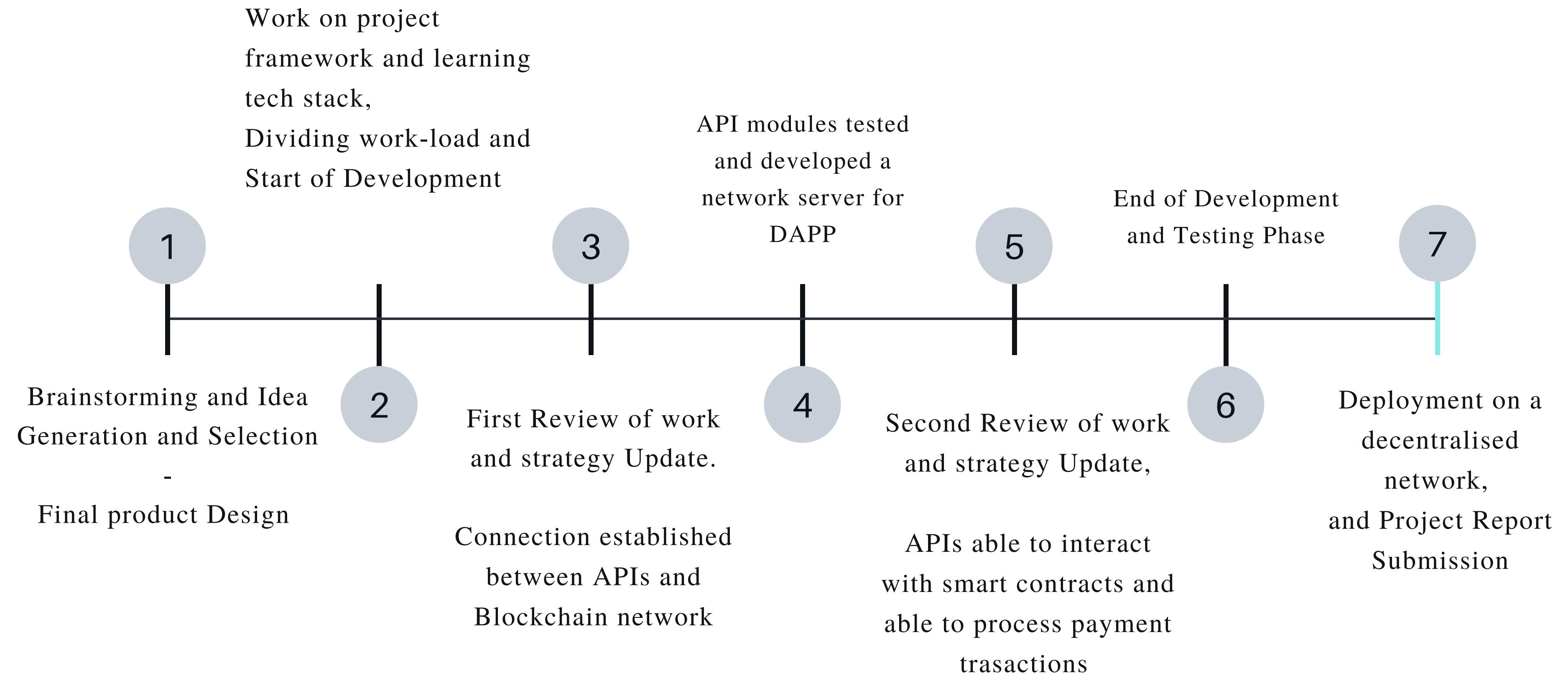
Track the movement of goods at
every stage of the supply chain

05



Ledger Trust

Multiple verifications ensure
suppliers and customers are on
the same page



RESOURCE PAGES

MARKET SURVEY

[1] Building a Transparent Supply Chain by Vishal Gaur and Abhinav Gaiha From the Harvard Business Review Magazine (May-June 2020)

.....

[2] What Supply Chain Transparency Really Means by Alexis Bateman and Leonardo Bonanni From the Harvard Business Review Magazine (August 2019)

.....

[3] The big challenges for supply chains in 2022 From the World Economic Forum (2022)

.....

[4] Using blockchain to drive supply chain transparency by Stephen Laaper and Joseph Fitzgerald from Deloitte Insider (February 2022)

.....

[5] Five Challenges To Prepare For When Using Blockchain For Supply Chain Operations by Dennis Turpitka Forbes Technology Councils Member (September 2020)

.....



RESOURCE PAGES

IEEE RESEARCH PAPERS

[6] Enabling Privacy and Traceability in Supply Chains using Blockchain and Zero-Knowledge Proofs from 2020 IEEE International Conference on Blockchain (Blockchain)

[7] Immutable Smart Contracts on Blockchain Technology: Its Benefits and Barriers from 2021 9th International Conference on Reliability, Infocom Technologies and Optimization (Trends and Future Directions) (ICRITO) Amity University, Noida, India. Sep 3-4, 2021

[8] An Improved Network Design of Open Loop Reverse Supply Chain in 2021 International Conference on Automation, Control and Mechatronics for Industry 4.0 (ACMI), 8-9 July 2021, Rajshahi, Bangladesh

[9] A BlockChain based Management System for Detecting Counterfeit Product in Supply Chain: Proceedings of the Third International Conference on Intelligent Communication Technologies and Virtual Mobile Networks (ICICV 2021). IEEE Xplore Part Number: CFP21ONG-ART; 978-0-7381-1183-4

[10] Modelling the Impact of COVID-19 Pandemic on a Hardware Retail Supply Chain from School of Information, Systems and Modelling, FEIT, University of Technology Sydney, Australia

[11] BlockChain Based Inventory Management by QR Code Using Open CV from 2021 International Conference on Computer Communication and Informatics (ICCCI -2021), Jan. 27 - 29, 2021, Coimbatore, INDIA



THANK YOU!

We are open for questions now!