

List of Appendices

Appendix 1: Table of Interviewees

Appendix 2: Questionnaire

Appendix 3: Interview Transcripts

Appendix 4: Results of code references of NVivo

Appendix 1: Table of Interviewees

Name	Current Position
Arjun Kalia	Sourcing & Supply Chain Manager-SAARC divison
Anup Chhokar	Sales Associate - TATA STEEL, partially involved as managing coordination between production plants and warehouses.
Jayaraj Arokiyasamy	Head of IT, Fully Involved in both Functions.
Meet Parikh	I am a Project Manager in IT product-based company. I have an experience involved in Supply Chain process
Jyoti Tauro	Senior Financial Analyst. Have some knowledge on blockchain with supply chain
Rishabh Mudgal	Product Lead - Middle and Last Mile (80-90% involved)
Shrey Gera	Packaging engineer. Handling inventory needed for the assembly line
Rutvij Vaishnav	Owner. Completely involved from sourcing to supplying.
Nishant Patel	Sr. Machine Learning scientist. Our business revolves around supply chain tracking using IOT sensors.
Het Vyas	Project Manager and Marketing Executive
Darshit Shah	I work as a supply chain strategy consultant to advise clients to improve their supply chains. I am completely involved with the supply chain and to some extent technology fields.
Sohaib Sulaiman	Area Sales Manager. I have regular coordination with supply chain team to ensure local availability of products
Goutham Ravichandiran	UX designer
Manik Vig	Capacity Planning in Supply Chain
Pratik Patil	I am currently an MBA student at NITIE Mumbai, for Operations/Supply Chain Management domain.
Jayraj Trivedi	Working as an IT consultant. Does not involve supply chain but involves IT
Erik Valiquette	CEO of the Blockchain Supply Chain Association
Kevin Bao	CEO, 100% in both
Sujar Jacob	Distribution Center Management & Projects
Anisha Goel	I'm IT Project Manager in Cisco. My work mainly involves IT and about 20% supply chain management.

Appendix 2: Questionnaire

Interview Questionnaire

- [1] Your Full Name
- [2] What is your current role in your company? To what extent are you involved with supply chain or IT?
- [3] Are you aware of blockchain technology? Was it implemented in your organization? How was it implemented? If not, why?
- [4] Describe current and foreseeable issues in the supply chain in your organization?
- [5] To what extent do you think issues described earlier can be mitigated by implementing blockchain solutions?
- [6] What could be prerequisites and preconditions for the implementation of Blockchain technology in your organization?
- [7] What can be prominent drivers for enabling blockchain in the supply chain?
- [8] What can be the major limitations that prevent the implementation of blockchain in the supply chain?

- [9] Any additional comments

Appendix 3: Interview Transcripts

Thesis Questionnaire - Integration of Blockchain with Supply chain

Using this questionnaire, I am researching about the extend to which decision makers see implementing blockchain as a way of optimizing supply chain, foreseeable future opportunities and limitations.

Email *

anubraham@gmail.com

Your Full Name *

Anup Chhokar

What is your current role in your company? To what extent are you involved with supply chain or IT? *

Sales Associate - TATA STEEL, partially involved as managing coordination between production plants and warehouses in different regions in India.

Are you aware of blockchain technology? Was it implemented in your organization? How was it implemented? If not, why ? *

Yes, I am aware. Yes implemented - Tata Steel + HSBC, executed a blockchain-enabled paperless trade transaction in 2021

Describe current and foreseeable issues in the supply chain in your organization? *

Current issues- untimely delivery of products, more administrative work, foreseeable issues- loss of revenues and less sales

To what extent do you think issues described earlier can be mitigated by implementing blockchain solutions? *

The use of blockchain technology in trade finance improves transaction security, reduced document negotiation, banking transaction cycles from weeks to a few days, speeds up the velocity of trade

What could be prerequisites and preconditions for the implementation of Blockchain technology in your organization? *

Staff engagement, trainings and workshops for new technology

What can be prominent drivers for enabling blockchain in the supply chain? *

Big data analytics, technology driven organization

What can be the major limitations that prevent the implementation of blockchain in the supply chain? *

No knowlegde of Blockchain technology

Any additional comments

Blockchain is the future of business transactions.

This content is neither created nor endorsed by Google.

Google Forms

Thesis Questionnaire - Integration of Blockchain with Supply chain

Using this questionnaire, I am researching about the extend to which decision makers see implementing blockchain as a way of optimizing supply chain, foreseeable future opportunities and limitations.

Email *

yadavgaurav989@gmail.com

Your Full Name *

Gaurav Yadav

What is your current role in your company? To what extent are you involved with supply chain or IT? *

Role: GTM consultant - VMware cloud.

My role revolves around offering best suited cloud native engineering capabilities to clients and help them attain optimal hybrid and multi cloud environment.

Are you aware of blockchain technology? Was it implemented in your organization? How was it implemented? If not, why? *

Yes, Wipro has numerous offerings of Block Chain. We help our customers with Blockchain platforms, advisory services and various industry based thematic solutions. We've helped lots of customer implement block chain. You can find case studies on www.wipro.com/blockchain

Describe current and foreseeable issues in the supply chain in your organization? *

Given the nature of our business, I don't see any supply chain issue in our IT services firm. We smoothly ensured business continuity of 200 thousand employees during pandemic.

To what extent do you think issues described earlier can be mitigated by implementing blockchain solutions? *

NA

What could be prerequisites and preconditions for the implementation of Blockchain technology in your organization? *

NA

What can be prominent drivers for enabling blockchain in the supply chain? *

I believe providing better customer experience, cost savings and security features will remain prominent drives.

In a competitive landscape, trying to create differentiated proposition can also be a key driver for adoption.

What can be the major limitations that prevent the implementation of blockchain in the supply chain? *

Lack of awareness, management vision, additional cost of implementation could be some reasons

Any additional comments

During my MBA internship, I worked in one of the largest medical device manufacturing company. They had 85% market share so being innovative or adopting latest technologies doesn't provide much benefits to such organization hence they tend to focus on BAU.

This content is neither created nor endorsed by Google.

Google Forms

Thesis Questionnaire - Integration of Blockchain with Supply chain

Using this questionnaire, I am researching about the extend to which decision makers see implementing blockchain as a way of optimizing supply chain, foreseeable future opportunities and limitations.

Email *

kaliaarjun123@gmail.com

Your Full Name *

Arjun Kalia

What is your current role in your company? To what extent are you involved with supply chain or IT? *

Sourcing & Supply Chain Manager-SAARC divison

Are you aware of blockchain technology? Was it implemented in your organization? How was it implemented? If not, why ? *

Yes, I'm aware of the technology. No, it hasn't been implemented in our organisation purely because the requirement of traceability is carried out through our forwarding agent. Also, it hasn't been deployed horizontally across the group

Describe current and foreseeable issues in the supply chain in your organization? *

With the delays in getting vessel schedules and in transit delays, material availability and customer commitments are taking a hit big time.

To what extent do you think issues described earlier can be mitigated by implementing blockchain solutions? *

It could help in real time tracking of incoming shipments and commit to the customer's accordingly.

What could be prerequisites and preconditions for the implementation of Blockchain technology in your organization? *

It has to be accepted and agreed by the Group's management and only then it can be deployed across our entities globally.

What can be prominent drivers for enabling blockchain in the supply chain? *

With the current competitive scenario it is imperative that we are on our toes with respect to material availability and this requirement will force organisations to adopt this technology which ensures they're aware of their shipment status at all times and since it reduces the chances of any breakage into the system it further gives organizations an incentive to adopt it.

What can be the major limitations that prevent the implementation of blockchain in the supply chain? *

Apprehensions if any by the organisation's management.

Any additional comments

None

This content is neither created nor endorsed by Google.

Google Forms

Thesis Questionnaire - Integration of Blockchain with Supply chain

Using this questionnaire, I am researching about the extend to which decision makers see implementing blockchain as a way of optimizing supply chain, foreseeable future opportunities and limitations.

Email *

shaus22@gmail.com

Your Full Name *

Jayaraj Arokiyasamy

What is your current role in your company? To what extent are you involved with supply chain or IT? *

Head of IT, Fully Involved in both Functions.

Are you aware of blockchain technology? Was it implemented in your organization? How was it implemented? If not, why ? *

I am aware of Blockchain, not implemented in our organization, It's not the right time. blockchain as a technology needs to evolve.

Describe current and foreseeable issues in the supply chain in your organization? *

Tracking Shipments end to end, Collaborating with all Suppliers, Partners, Traceability of Materials, real time connectivity and visibility of shippers and logistics partners.

To what extent do you think issues described earlier can be mitigated by implementing blockchain solutions? *

if blockchain is trusted by Suppliers, Logistics partners and if the security of sensitive information shared across parties ensured, then there is a possibility of these issues being addressed.

What could be prerequisites and preconditions for the implementation of Blockchain technology in your organization? *

1. it's very important to have clear guidelines and frameworks on Government, Legal and Compliance regulations to implement blockchain technology. 2. Blockchain technology Solutions/Systems to prove that it can be seamlessly integrated with Business Systems such as ERP or Accounting Systems.

What can be prominent drivers for enabling blockchain in the supply chain? *

Trust, Security, Regulations & Proven Solutions.

What can be the major limitations that prevent the implementation of blockchain in the supply chain? *

Scalability hasn't been proven yet, Transactions can't be overwritten and it's immutable.

Any additional comments

Researches suggest that the cost to operate blockchain solutions can be very high. Transparency and Confidentiality is a key issue. Also there are compatibility issues between blockchain traceability characteristics and real world traceability characteristics. Also there are not many success stories that would encourage and entice organizations to go for.

This content is neither created nor endorsed by Google.

Google Forms

Thesis Questionnaire - Integration of Blockchain with Supply chain

Using this questionnaire, I am researching about the extend to which decision makers see implementing blockchain as a way of optimizing supply chain, foreseeable future opportunities and limitations.

Email *

kapoor_palash@hotmail.com

Your Full Name *

Palash Kapoor

What is your current role in your company? To what extent are you involved with supply chain or IT? *

Sales Development Representative. My work revolves substantially around the IT space helping organizations with their CRM requirements customised to their business needs.

Are you aware of blockchain technology? Was it implemented in your organization? How was it implemented? If not, why ? *

Yes. Atleast a few, if not all products of my organization are built on hyperledger sawtooth protocol using blockchain at the core.

Describe current and foreseeable issues in the supply chain in your organization? *

N/A

To what extent do you think issues described earlier can be mitigated by implementing blockchain solutions? *

N/A

What could be prerequisites and preconditions for the implementation of Blockchain technology in your organization? *

The core idea of using blockchain at my organization was to establish trust for secure data access and transfer which is of utmost importance in the IT space dealing with multitudes of highly sensitive data.

What can be prominent drivers for enabling blockchain in the supply chain? *

Prominent drivers could be business impact on the lines of a leaner supply chain leading to cost-efficiency and enhanced control over the entire supply chain lifecycle. Security could be another important aspect in all businesses including supply chain.

What can be the major limitations that prevent the implementation of blockchain in the supply chain? *

High cost and time involved in the implementation of blockchain would be one major drawback. Lack of skilled resource in a domain as new as Blockchain is also a challenge right now.

Any additional comments

Along with a thorough cost-benefit analysis, Blockchain's fitment into the long term vision of a particular organization must be at the center of any and all decisions. Implementing Blockchain is a long term commitment at the very least and must be pondered upon by the decision makers with future goals in mind.

This content is neither created nor endorsed by Google.

Google Forms

Thesis Questionnaire - Integration of Blockchain with Supply chain

Using this questionnaire, I am researching about the extend to which decision makers see implementing blockchain as a way of optimizing supply chain, foreseeable future opportunities and limitations.

Email *

meetparikh.ind@gmail.com

Your Full Name *

Meet Prabodhkumar Parikh

What is your current role in your company? To what extent are you involved with supply chain or IT? *

I am a Project Manager in IT product based company. I have an experience involved in Supply Chain process

Are you aware of blockchain technology? Was it implemented in your organization? How was it implemented? If not, why ? *

Yes, I am aware about Blockchain Technology yes it is implemented in our Organisation.it was used in one of our product's service. It's decentralised system that allows information to be distributed securely.

Describe current and foreseeable issues in the supply chain in your organization? *

Currently, where I am working not being part of it this process but yes based on my previous experience I would like to say. From vendor source to product management and delivery to client comes in supply chain management

To what extent do you think issues described earlier can be mitigated by implementing blockchain solutions? *

It is about, if someone were to send you an email today with an attachment, you wouldn't be opening the exact attachment that they sent you, instead, you will be reading a digital recreation of that attachment. with Blockchain you can exchange an actual piece of data without needing a mutually trusted broker in the middle of your transaction.

What could be prerequisites and preconditions for the implementation of Blockchain technology in your organization? *

To understand how much importance of decentralised system with secure transaction. Then Tech Engineers play the role for development who are highly qualified.

What can be prominent drivers for enabling blockchain in the supply chain? *

Product Data.

What can be the major limitations that prevent the implementation of blockchain in the supply chain? *

Compare to traditional database, Blockchain significantly slower in retrieving and committing the record

Any additional comments

This is the Future

This content is neither created nor endorsed by Google.



Thesis Questionnaire - Integration of Blockchain with Supply chain

Using this questionnaire, I am researching about the extend to which decision makers see implementing blockchain as a way of optimizing supply chain, foreseeable future opportunities and limitations.

Email *

jyothitauro@gmail.com

Your Full Name *

Jyoti Tauro

What is your current role in your company? To what extent are you involved with supply chain or IT? *

Senior Financial Analyst. Have some knowledge on blockchain with supply chain

Are you aware of blockchain technology? Was it implemented in your organization? How was it implemented? If not, why ? *

Yes. The technology is studied and in nascent stage in the process of implementation.

Describe current and foreseeable issues in the supply chain in your organization? *

The current issue remains with legacy structures and patterns in the way business was done. Bringing that to a closure and adopting new technologies is one issue. Second is the new business process, understanding the entire supply chain needs in the new digital world is complex to fulfill the end user needs. Another issue is that data on the ledger cannot be erased or reversed, so carefully it must be implemented. Leaders have trust issues.

To what extent do you think issues described earlier can be mitigated by implementing blockchain solutions? *

Being mindful and have a complete understanding of it is important from the beginning.

What could be prerequisites and preconditions for the implementation of Blockchain technology in your organization? *

Cost is the first thing, next is trust in the organization implementing it with transparency being the core.

What can be prominent drivers for enabling blockchain in the supply chain? *

scalability is one factor, integration and transparency to all stakeholders

What can be the major limitations that prevent the implementation of blockchain in the supply chain? *

trust among the stakeholders and analytics

Any additional comments

None



Thesis Questionnaire - Integration of Blockchain with Supply chain

Using this questionnaire, I am researching about the extend to which decision makers see implementing blockchain as a way of optimizing supply chain, foreseeable future opportunities and limitations.

Email *

vikrant.mhatre2104@gmail.com

Your Full Name *

Vikrant Mhatre

What is your current role in your company? To what extent are you involved with supply chain or IT? *

Business Analyst

Are you aware of blockchain technology? Was it implemented in your organization? How was it implemented? If not, why ? *

Yes I'm aware. No, it's in a nascent stage

Describe current and foreseeable issues in the supply chain in your organization? *

Turn around time is too high.

oog e

described earlier can be mitigated by implementing

.....

conditions for the implementation of Blockchain

needed to understand the implications and benefits for it to be

.....

implementing blockchain in the supply chain? *

.....

prevent the implementation of blockchain in the supply

.....

.....

Neither created nor endorsed by Google.



G | Forms

Thesis Questionnaire - Integration of Blockchain with Supply chain

Using this questionnaire, I am researching about the extend to which decision makers see implementing blockchain as a way of optimizing supply chain, foreseeable future opportunities and limitations.

Email *

uarora@ncsu.edu

Your Full Name *

Ujjwal Arora

What is your current role in your company? To what extent are you involved with supply chain or IT? *

I am a Hardware Architect , I am not involved in either supply chain or IT

Are you aware of blockchain technology? Was it implemented in your organization? How was it implemented? If not, why ? *

There are discussions ongoing on how to incorporate Blockchain in various IPs in our organisation but nothing concrete so far

oog e

Describe current and foreseeable issues in the supply chain in your organization? *

Inertia to adoption, lack of knowhow

described earlier can be mitigated by implementing

ive, so people are more resistant to adopting new
m even considering adoption of Blockchain

ditions for the implementation of Blockchain

still in early stages of adoption throughout the Tech world so
routine

ing blockchain in the supply chain? *

prevent the implementation of blockchain in the supply

oog e

either created nor endorsed by Google.

Google Forms

Thesis Questionnaire - Integration of Blockchain with Supply chain

Using this questionnaire, I am researching about the extend to which decision makers see implementing blockchain as a way of optimizing supply chain, foreseeable future opportunities and limitations.

Email *

naren_mahajan@yahoo.com

Your Full Name *

Naren Mahajan

What is your current role in your company? To what extent are you involved with supply chain or IT? *

SAP Consultant. My job profile is related to IT.

oog e

Are you aware of blockchain technology? Was it implemented in your organization? How was it implemented? If not, why ? *

Yes. It is implemented in the organization.

Describe current and foreseeable issues in the supply chain in your organization? *

Managing demand and supply.

described earlier can be mitigated by implementing

conditions for the implementation of Blockchain

Implementing blockchain in the supply chain? *

Implement the blockchain.

oog e

prevent the implementation of blockchain in the supply

The supply chain is not stable. The data required to

either created nor endorsed by Google.

Google Forms

Thesis Questionnaire - Integration of Blockchain with Supply chain

Using this questionnaire, I am researching about the extend to which decision makers see implementing blockchain as a way of optimizing supply chain, foreseeable future opportunities and limitations.

Email *

mudgal.rishabh@gmail.com

Your Full Name *

Rishabh Mudgal

Google

What is your current role in your company? To what extent are you involved with supply chain or IT? *

Product Lead - Middle and Last Mile (80-90% involved)

Are you aware of blockchain technology? Was it implemented in your organization? How was it implemented? If not, why ? *

I am aware about blockchain on a basic level. Walmart hasn't implemented blockchain as the technology knowledge (engineering knowledge) in organization is not present. I believe a few POC are in flight.

oog e

Describe current and foreseeable issues in the supply chain in your organization? *

1. Proper sourcing (Source - Avoiding fakes)
 2. Understand needs of customers beforehand to ensure correct SKUs are stocked
 3. Delivery lead time
 4. Quality of product (GMO, Non-GMO, Organic etc.) (fraud detection maybe)
 5. Money transaction record keeping.
-

To what extent do you think issues described earlier can be mitigated by implementing blockchain solutions? *

Most of it if technology knowledge is easy to acquire. I am not sure how difficult it would be to manager a technology like blockchain on long term.

What could be prerequisites and preconditions for the implementation of Blockchain technology in your organization? *

1. Engineering knowledge.
 2. Sr leadership buy-in and basic knowledge/understanding
 3. Long term benefit out weigh maintenance and development cost.
 4. Technology infrastructure (if any)
 5. Data pipeline
 6. Partner technology if needed (vendors etc.)
-

What can be prominent drivers for enabling blockchain in the supply chain? *

N/A

What can be the major limitations that prevent the implementation of blockchain in the supply chain? *

Technology knowledge, infrastructure and Sr leadership's lack of knowledge on the benefit, Cost of implementation and maintenance.

neither created nor endorsed by Google.

Google Forms

Thesis Questionnaire - Integration of Blockchain with Supply chain

Using this questionnaire, I am researching about the extend to which decision makers see implementing blockchain as a way of optimizing supply chain, foreseeable future opportunities and limitations.

Email *

shrey.gera@gmail.com

Your Full Name *

Shrey Gera

What is your current role in your company? To what extent are you involved with supply chain or IT? *

Packaging engineer. Handling inventory needed for the assembly line

Are you aware of blockchain technology? Was it implemented in your organization? How was it implemented? If not, why ? *

Yes, aware. I don't think so.

Describe current and foreseeable issues in the supply chain in your organization? *

Ordering parts even if the production is down.

described earlier can be mitigated by implementing

Conditions for the implementation of Blockchain

Implementing blockchain in the supply chain? *

What prevents the implementation of blockchain in the supply

Neither created nor endorsed by Google.

Google Forms

Thesis Questionnaire - Integration of Blockchain with Supply chain

Using this questionnaire, I am researching about the extend to which decision makers see implementing blockchain as a way of optimizing supply chain, foreseeable future opportunities and limitations.

Email *

krutarth493@gmail.com

Your Full Name *

Krutarth Dave

What is your current role in your company? To what extent are you involved with supply chain or IT? *

IT Analyst.

Are you aware of blockchain technology? Was it implemented in your organization? How was it implemented? If not, why ? *

Yes. Thyssenkrupp uses blockchain for financial transactions or bitcoins. It also uses it for a secure and multi site exchange of production data.

Describe current and foreseeable issues in the supply chain in your organization? *

The material and parts production seems to be less efficient.

described earlier can be mitigated by implementing

ty. This will mitigate the issue to a large extent. The company
ent blockchain for 3D printing parts.

Conditions for the implementation of Blockchain

solution and the target area. High level signoffs.

Implementing blockchain in the supply chain? *

What prevents the implementation of blockchain in the supply

chain? For example, it does have an upfront cost attached to it. There is a lack of data infrastructure.

Google Forms is neither created nor endorsed by Google.

Google Forms

Thesis Questionnaire - Integration of Blockchain with Supply chain

Using this questionnaire, I am researching about the extend to which decision makers see implementing blockchain as a way of optimizing supply chain, foreseeable future opportunities and limitations.

Email *

incore.labs.np@gmail.com

Your Full Name *

Neelabh Pandey

What is your current role in your company? To what extent are you involved with supply chain or IT? *

Software Engineer

Are you aware of blockchain technology? Was it implemented in your organization? How was it implemented? If not, why ? *

We don't have blockchain since our product has not thought of the possibility or looked into it. Might not be a usecase for us.

Describe current and foreseeable issues in the supply chain in your organization? *

We don't deal with supply chain.

described earlier can be mitigated by implementing

conditions for the implementation of Blockchain

...ing blockchain in the supply chain? *

...prevent the implementation of blockchain in the supply

...either created nor endorsed by Google.

Google Forms

Thesis Questionnaire - Integration of Blockchain with Supply chain

Using this questionnaire, I am researching about the extend to which decision makers see implementing blockchain as a way of optimizing supply chain, foreseeable future opportunities and limitations.

Email *

rutvijvaishnav@gmail.com

Your Full Name *

Rutvij Vaishnav

What is your current role in your company? To what extent are you involved with supply chain or IT? *

Owner. Completely involved from sourcing to supplying.

Are you aware of blockchain technology? Was it implemented in your organization? How was it implemented? If not, why? *

Aware of it: Yes

Implemented: No

Why?: In the Indian Manufacturing sector lots of unorganized supply chain partners form the major part of the supply chain. Implementing block chain through them is a very difficult task in the presence scenario. Because of lack of awareness, implementation technologies in the rural regions, education level in the blue collar workers of these unorganized supply chain partners and lack of financial resources it becomes nearly impossible task at this moment to implement at our organization.

Describe current and foreseeable issues in the supply chain in your organization? *

1) Transportation:

Increasing freights

Shortage of containers

Increasing fuel prices

2) Uncertainty in the Markets:

Fluctuating demands with fluctuating commodity prices

Stock keeping and maintaining:

3) International Conflicts:

e.g. Indo-China conflicts causing shortage of electronic components delaying our machinery schedules

To what extent do you think issues described earlier can be mitigated by implementing blockchain solutions? *

For our organization, a little can be solved by that in the immediate times

What could be prerequisites and preconditions for the implementation of Blockchain technology in your organization? *

Technology availability

Organized supply chain partners

Education in employees managing the blockchain

What can be prominent drivers for enabling blockchain in the supply chain? *

Can shorten the cash cycle

Ease in stock keeping

Tracking can become easy

prevent the implementation of blockchain in the supply

.....

.....

neither created nor endorsed by Google.

Google Forms

Thesis Questionnaire - Integration of Blockchain with Supply chain

Using this questionnaire, I am researching about the extend to which decision makers see implementing blockchain as a way of optimizing supply chain, foreseeable future opportunities and limitations.

Email *

nishant998877@gmail.com

Your Full Name *

Nishant Patel

What is your current role in your company? To what extent are you involved with supply chain or IT? *

Sr. Machine Learning scientist. Our business revolves around supply chain tracking using IOT sensors.

Are you aware of blockchain technology? Was it implemented in your organization? How was it implemented? If not, why ? *

Yes I'm aware of what blockchain is. We tried to implement it in our devices to bring more confidence to the data our IOT sensors collects (e.g. temperature reading of a shipment throughout the journey).

Describe current and foreseeable issues in the supply chain in your organization? *

For us the main problem was power consumption of the blockchain calculations. Our devices collect data every few minutes and as they are edge devices; any added computation shrinks down the timespan the device can be used for between recharge cycle. So, introducing blockchain literally halved the time it can stay in action; which is big deal breaker for long running multimodal shipments (e.g. going from china to USA; it takes 25+ days and if our devices can't last that long then it's deal breaker)

To what extent do you think issues described earlier can be mitigated by implementing blockchain solutions? *

Blockchain was experimented on in our company to add the extra confidence that the temperature/humidity/shock readings were authentic and wasn't changed/tampered with; but doing so reduced the timespan of our devices. So even though the confidence was boosted; practically it wasn't just feasible to deploy it for live customer devices.

What could be prerequisites and preconditions for the implementation of Blockchain technology in your organization? *

Technological know-how is primary and Domain use-case deep knowledge is also essential.

What can be prominent drivers for enabling blockchain in the supply chain? *

To be honest it's more of a buzz generating tool than being actually useful. In supply chain the only practical usecase i can see is to maintain service agreements and contracts between logistics service provider and consumer so that none of the party can shy/sway away from their own agreements. All the other usecases are shallow or straight up impractical; it's like taking a train to go 2 miles just to show-off.

prevent the implementation of blockchain in the supply

ed technology and only few people truly knows it and can

ility of the block chain itself. People with shallow knowledge products and solution; which is simply not the case and born out

an actually being useful. It do have the niche use-cases like that's about it. There's high correlation when block chain is in their pockets! So, no wonder literally every single startup tried to launch their product offerings.

Neither created nor endorsed by Google.

Google Forms

Thesis Questionnaire - Integration of Blockchain with Supply chain

Using this questionnaire, I am researching about the extend to which decision makers see implementing blockchain as a way of optimizing supply chain, foreseeable future opportunities and limitations.

Email *

vyas.het19@gmail.com

Your Full Name *

Het Alkesh Vyas

What is your current role in your company? To what extent are you involved with supply chain or IT? *

Project Manager and Marketing Executive

Are you aware of blockchain technology? Was it implemented in your organization? How was it implemented? If not, why? *

Yes I'm aware. It was not implemented in our organization because it is costly for a company which operates in local market.

Describe current and foreseeable issues in the supply chain in your organization? *

Transparency of data is current issue in our organization as each Big warehouses have different reporting styles based on the locations. It is difficult to maintain and analyze the data. Which can be eradicated with the use of Blockchain technology as it will have symmetrical reporting systems with Transparency.

To what extent do you think issues described earlier can be mitigated by implementing blockchain solutions? *

90% of Issues can be mitigated with the use of Blockchain solutions.

What could be prerequisites and preconditions for the implementation of Blockchain technology in your organization? *

1. Decentralization of systems
2. Training of employees
3. Hands on experience with platform
4. Understanding of Blockchain security

What can be prominent drivers for enabling blockchain in the supply chain? *

1. Accurate tracking of supplies
2. Decentralization record for transactions
3. Better data understanding

What can be the major limitations that prevent the implementation of blockchain in the supply chain? *

1. Cost is major limitations for implementation of blockchain in our organization.

For Supplychain - Limitation can be based on the size of company for e.g. small companies see no use of blockchain as the operations are small and limited.

neither created nor endorsed by Google.

Google Forms

Thesis Questionnaire - Integration of Blockchain with Supply chain

Using this questionnaire, I am researching about the extend to which decision makers see implementing blockchain as a way of optimizing supply chain, foreseeable future opportunities and limitations.

Email *

darshit.shah.iitkgp@gmail.com

Your Full Name *

Darshit Shah

What is your current role in your company? To what extent are you involved with supply chain or IT? *

I work as a supply chain strategy consultant to advise clients to improve their supply chains. I am completely involved with the supply chain and too some extent technology fields.

Are you aware of blockchain technology? Was it implemented in your organization? How was it implemented? If not, why ? *

Yes, I am aware of the technology and its use cases and instances. But, i have not witnessed it getting implemented nor we have proposed any client thus far for the same.

Describe current and foreseeable issues in the supply chain in your organization? *

Typical issues that we observe in the firms at the moment:

1. Lack of resilience and flexibility in the supply chain
 2. Difficult to contain supply chain costs due to current market conditions
 3. Increased complexities in supply chain processes
-

To what extent do you think issues described earlier can be mitigated by implementing blockchain solutions? *

Technology is a key factor that brings resilience in the supply chain. With blockchain comes the traceability, and it should reduce the risk to a great extent.

What could be prerequisites and preconditions for the implementation of Blockchain technology in your organization? *

N/A

What can be prominent drivers for enabling blockchain in the supply chain? *

Data maturity and culture of sustained innovation

What can be the major limitations that prevent the implementation of blockchain in the supply chain? *

Less awareness of the use cases to the leaderships

Any additional comments

This content is neither created nor endorsed by Google.

Google Forms

Thesis Questionnaire - Integration of Blockchain with Supply chain

Using this questionnaire, I am researching about the extend to which decision makers see implementing blockchain as a way of optimizing supply chain, foreseeable future opportunities and limitations.

Email *

sohaib.sulaiman@gmail.com

Your Full Name *

Sohaib Sulaiman

What is your current role in your company? To what extent are you involved with supply chain or IT? *

Area Sales Manager. I have regular coordination with supply chain team to ensure local availability of products

Are you aware of blockchain technology? Was it implemented in your organization? How was it implemented? If not, why ? *

Yes I am aware. No it has not been implemented since the management is not very keen to introduce it

Describe current and foreseeable issues in the supply chain in your organization? *

Global raw material shortage can severely impact local availability if forecasting is not done appropriately

described earlier can be mitigated by implementing

Conditions for the implementation of Blockchain

Implementing blockchain in the supply chain? *

What is the advantage of using such technology

What prevents the implementation of blockchain in the supply

Google Forms is neither created nor endorsed by Google.



Thesis Questionnaire - Integration of Blockchain with Supply chain

Using this questionnaire, I am researching about the extend to which decision makers see implementing blockchain as a way of optimizing supply chain, foreseeable future opportunities and limitations.

Email *

gouthamravi1995@gmail.com

Your Full Name *

Goutham Ravichandiran

What is your current role in your company? To what extent are you involved with supply chain or IT? *

UX designer

Are you aware of blockchain technology? Was it implemented in your organization? How was it implemented? If not, why ? *

Heard about it but I was never involved in its implementation

Describe current and foreseeable issues in the supply chain in your organization? *

Supply chain with respect to the hardware we are facing due to availability of chit sets etc. With respect to software we aren't facing anyway at this point in time.

To what extent do you think issues described earlier can be mitigated by implementing blockchain solutions? *

I am not fully aware of this

What could be prerequisites and preconditions for the implementation of Blockchain technology in your organization? *

I am not familiar with the implementation perspective. I have heard about it but don't have deeper understanding on blockchain.

What can be prominent drivers for enabling blockchain in the supply chain? *

Problems in existing supply chain traceability systems, which are either difficult or impossible to solve with current technologies, include establishing reliable provenance, and preventing fraud and counterfeiting. Existing traceability systems adopt either a centralized or distributed architecture. Blockchain is a promising technology for addressing these issues which brings three major benefits: (i) secure traceability and control, (ii) data immutability and (iii) trust creation, in relatively low cost IT solutions.

What can be the major limitations that prevent the implementation of blockchain in the supply chain? *

Non technical challenges - many warehouses still operate with paper at the integral points, although RFID chips and scanners are now conveniently available. Technical challenges - interoperability and flexibility of the integrating existing systems. Scability is an another limitation.

Any additional comments

If you could provide a better view of the blockchain it would actually help people answer these questions in a much more differently.

This content is neither created nor endorsed by Google.

Google

Forms

Thesis Questionnaire - Integration of Blockchain with Supply chain

Using this questionnaire, I am researching about the extend to which decision makers see implementing blockchain as a way of optimizing supply chain, foreseeable future opportunities and limitations.

Email *

abhipraay2705@gmail.com

Your Full Name *

Abhipraay Bajpai

What is your current role in your company? To what extent are you involved with supply chain or IT? *

I work as a consultant in the Supply Chain practice for a Management Consulting firm.

Are you aware of blockchain technology? Was it implemented in your organization? How was it implemented? If not, why ? *

Over the past 5 years, the development of blockchain based solutions has intensified across the IT consulting industry. Presently the solutions are developed for a variety of industries but the adoption has been slow due to trust and data privacy issues. According to a 2018 survey by our firm,

- only 3% of the organisations deployed blockchain at scale
- 10% are at an advanced stage of experimentation, with pilots in at least one site
- 87% are at early experimental or proof of concept stage

Describe current and foreseeable issues in the supply chain in your organization? *

NA (Our firm is a provider of blockchain solutions for other organizations)

To what extent do you think issues described earlier can be mitigated by implementing blockchain solutions? *

- Lack of traceability : Audit trail for all transactions
- Risks involved with multiple stakeholders : Immutable & secure against undesired changes
- Lack of responsiveness : Near real time
- Huge amount of manual processing : Faster digital record generation
- Regulatory compliance : Tamper proof data which can be easily verified
- Reconciliation burden : Single shared source of truth

What could be prerequisites and preconditions for the implementation of Blockchain technology in your organization? *

Blockchain has great potential in,

- Manufacturing : Supplier contract management, digital thread, tracking production, asset maintenance and recalled parts
- Consumer products : Tracking provenance and critical parameters, monitoring asset conditions, providing warranties
- Retail : marketplaces, prevention of counterfeits, inventory & pilferage tracking, returned goods tracking, loyalty program management

Another area of implementation involves investing in sustainable supply chains through carbon emission tracking

Requirements include,

- Consistent and robust MIS in place
- Successful proof of concept
- Regulatory compliance
- High initial investment

...ing blockchain in the supply chain? *

...prevent the implementation of blockchain in the supply

...ons

...dards
...chain

...ers

...either created nor endorsed by Google.

Google Forms

Thesis Questionnaire - Integration of Blockchain with Supply chain

Using this questionnaire, I am researching about the extend to which decision makers see implementing blockchain as a way of optimizing supply chain, foreseeable future opportunities and limitations.

Email *

juhitrpathi18@gmail.com

Your Full Name *

Juhi Tripathi

What is your current role in your company? To what extent are you involved with supply chain or IT? *

Current role : Senior Software Engineer, that falls under IT organizational structure. I have no involvement in supply chain.

Are you aware of blockchain technology? Was it implemented in your organization? How was it implemented? If not, why ? *

Yes, my organization is connecting crypto and blockchain networks to our global payment network. Universal Payment Channel (UPC), developed at my organization acts as a hub, interconnecting multiple blockchain networks, allowing a secure transfer of digital currencies.

What are the challenges you face in the supply chain in your organization? *

described earlier can be mitigated by implementing

conditions for the implementation of Blockchain

with the technology

Implementing blockchain in the supply chain? *

What prevents the implementation of blockchain in the supply

Google Forms is neither created nor endorsed by Google.



Thesis Questionnaire - Integration of Blockchain with Supply chain

Using this questionnaire, I am researching about the extend to which decision makers see implementing blockchain as a way of optimizing supply chain, foreseeable future opportunities and limitations.

Email *

manikgauravvig@gmail.com

Your Full Name *

Manik Vig

What is your current role in your company? To what extent are you involved with supply chain or IT? *

Capacity Planning in Supply Chain

Are you aware of blockchain technology? Was it implemented in your organization? How was it implemented? If not, why ? *

Not implemented yet, technology is too nascent

Describe current and foreseeable issues in the supply chain in your organization? *

Chip shortage, excess and obsolete inventory, slow capacity ramp up

described earlier can be mitigated by implementing

inventory, preventing obsolescence costs

Conditions for the implementation of Blockchain

Facilitating blockchain in the supply chain? *

Preventing the implementation of blockchain in the supply

Neither created nor endorsed by Google.

Google Forms

Thesis Questionnaire - Integration of Blockchain with Supply chain

Using this questionnaire, I am researching about the extent to which decision makers see implementing blockchain as a way of optimizing supply chain, foreseeable future opportunities and limitations.

Email *

pratik.patil.all@gmail.com

Your Full Name *

Pratik Patil

What is your current role in your company? To what extent are you involved with supply chain or IT? *

I am currently an MBA student at NITIE Mumbai, considered as one of the top institutes in India for Operations/Supply Chain Management domain. I'll be joining Amazon as a Level 5 Program Manager from the next financial year. I have a 4-year experience working on SAP infra, 2-month seller classification framework development experience in Amazon and 3-month operations consulting and capacity planning experience for Bajaj Electricals Limited.

Are you aware of blockchain technology? Was it implemented in your organization? How was it implemented? If not, why? *

In my experience, I have not seen Blockchain being used on a commercial scale in Indian supply chains. However, there is a rapid increase in awareness among the middle management. I have seen my seniors, fellow batchmates creating ready-to-implement models based on Blockchain during their internships. Their SCM projects were spread across a wide range of domains like FMCG, Pharma, Textile, Infrastructure, Ecommerce. Blockchain being a relatively newer technology, it is easier for new generation managers to upskill themselves and implement it in their organizations.

Describe current and foreseeable issues in the supply chain in your organization? *

In my opinion, the majority of SCM issues arise because of inaccurate forecasting models. A slight miscalculation creates ripples up the supply chain. We have seen this issue more prevalent after the COVID disruptions. I have seen my friends investing a lot of time in adjusting their forecasting models factoring in seasonality, demand and the desired service level of the company.

To what extent do you think issues described earlier can be mitigated by implementing blockchain solutions? *

There are many advanced EDI technologies that are already in use for ease of transactions. Using IoT (as simple as RFID tags) to ERP, the paperless transaction and tracking is quite sophisticated as it is today. I think that we can use Blockchains to increase the visibility of transactions throughout the supply chain and remove the data from silos. This will help decision making right from vendors to customers and adjust as per their own bottlenecks.

What could be prerequisites and preconditions for the implementation of Blockchain technology in your organization? *

I think we need large server storage spaces and computing power at each node of the supply chain. With increasing access to these equipment, blockchain becomes more feasible. As I mentioned earlier, we need upskilling and introduction of young managers to convert the traditional systems to newer ones.

What can be prominent drivers for enabling blockchain in the supply chain? *

Well, I can think of a lot of SCM drivers. Imagining a blockchain model, I can list a few major ones on the top of my head:

cycle, lead times

SKU data

Service Level

Fill rate/demand

purchase prices at each point

Outstanding payments

Order sizes

What prevent the implementation of blockchain in the supply

power, upskilling at each node. Besides, a blockchain will require a lot of algorithm changes. Also, it will solve only the problems that still be needed for user interaction.

My observations. I have personally not worked in SCM or Blockchain as an operation student.

This content is neither created nor endorsed by Google.

Google Forms

Thesis Questionnaire - Integration of Blockchain with Supply chain

Using this questionnaire, I am researching about the extend to which decision makers see implementing blockchain as a way of optimizing supply chain, foreseeable future opportunities and limitations.

Email *

jayrajtrivedi77@gmail.com

Your Full Name *

Jayraj Trivedi

What is your current role in your company? To what extent are you involved with supply chain or IT? *

Working as a IT consultant. Does not involve supply chain but involves IT

Are you aware of blockchain technology? Was it implemented in your organization? How was it implemented? If not, why ? *

Aware about it but have no exposure to it.

It was not implemented in my organization as it was not applicable for the domains which I was working on.

Describe current and foreseeable issues in the supply chain in your organization? *

No transparency, inefficient tracking, not so secure, needs a lot of manpower whereas these days the organization is looking for cost cutting given the situation of a vulnerable market.

described earlier can be mitigated by implementing

ve could be addressed using the block chain methodology.

reconditions for the implementation of Blockchain

nter to help the stakeholders adapt to the new methodology

enabling blockchain in the supply chain? *

Artificial intelligence, increasing Globalization, Highly skilled

hat prevent the implementation of blockchain in the supply

r time to market

nt is neither created nor endorsed by Google.



Thesis Questionnaire - Integration of Blockchain with Supply chain

Using this questionnaire, I am researching about the extend to which decision makers see implementing blockchain as a way of optimizing supply chain, foreseeable future opportunities and limitations.

Email *

erik@bsca.global

Your Full Name *

Erik Valiquette

What is your current role in your company? To what extent are you involved with supply chain or IT? *

CEO of the Blockchain Supply Chain Association

Are you aware of blockchain technology? Was it implemented in your organization? How was it implemented? If not, why ? *

It has been implemented in many of our member's organizations

Describe current and foreseeable issues in the supply chain in your organization? *

Supply chains are critical to our every day lives and the current pandemic has shown us how fragile our supply chains are. Too many "issues" to describe here. But using antiquated methodologies and paper based processes are at the core of several of these disruptive issues.

described earlier can be mitigated by implementing

mination of paper based processes, including the use of trusted
reduce waste. Wasted energy, wasted time, wasted resources.

Preconditions for the implementation of Blockchain

Integration of the business processes and the business processes of your entire organization's data silos and re-thinking how we exchange information in our supply chain

What are the enabling factors for blockchain in the supply chain? *

What are the barriers that prevent the implementation of blockchain in the supply chain?

This content is neither created nor endorsed by Google.



Thesis Questionnaire - Integration of Blockchain with Supply chain

Using this questionnaire, I am researching about the extend to which decision makers see implementing blockchain as a way of optimizing supply chain, foreseeable future opportunities and limitations.

Email *

kevin.bao@yutopy.com

Your Full Name *

Kevin Bao

What is your current role in your company? To what extent are you involved with supply chain or IT? *

CEO, 100% in both

Are you aware of blockchain technology? Was it implemented in your organization? How was it implemented? If not, why? *

Yes, used as base layer for data. Implemented from the ground up

Describe current and foreseeable issues in the supply chain in your organization? *

Traceability, visibility, data redundancy, security

described earlier can be mitigated by implementing

reconditions for the implementation of Blockchain

chain company

enabling blockchain in the supply chain? *

, and use a lot of resources to ETL data

What prevent the implementation of blockchain in the supply

This content is neither created nor endorsed by Google.

Google Forms

Thesis Questionnaire - Integration of Blockchain with Supply chain

Using this questionnaire, I am researching about the extend to which decision makers see implementing blockchain as a way of optimizing supply chain, foreseeable future opportunities and limitations.

Email *

suja.r.jacob@koutfood.com

Your Full Name *

Sujar Jacob

What is your current role in your company? To what extent are you involved with supply chain or IT? *

Distribution Center Management & Projects

Are you aware of blockchain technology? Was it implemented in your organization? How was it implemented? If not, why ? *

Yes i am aware of the BlockChain Technology. We are now working to enhance our SAP to have WMS first.

Describe current and foreseeable issues in the supply chain in your organization? *

1. Supply Chain Interruption (Container delays | Production Issues | Shipping congestion & delays) 2. Increased Price Hike 3. Increased Stock Holding days & Blocking Capital

described earlier can be mitigated by implementing

reconditions for the implementation of Blockchain

ch 2. Investment

enabling blockchain in the supply chain? *

What prevent the implementation of blockchain in the supply

Willingness to Change

COPEX Model to encourage companies to initiate and transform

Document is neither created nor endorsed by Google.

Google Forms

Thesis Questionnaire - Integration of Blockchain with Supply chain

Using this questionnaire, I am researching about the extend to which decision makers see implementing blockchain as a way of optimizing supply chain, foreseeable future opportunities and limitations.

Email *

anishagoel25993@gmail.com

Your Full Name *

Anisha Goel

What is your current role in your company? To what extent are you involved with supply chain or IT? *

I'm IT Project Manager in Cisco. My work mainly involves IT and about 20% supply chain management.

Are you aware of blockchain technology? Was it implemented in your organization? How was it implemented? If not, why? *

Yes I am aware. Yes my organization was one of the first ones to implement blockchain. Cisco has made open source its Enterprise Blockchain technology so that it will be available to all customers, partners, and developers.

Describe current and foreseeable issues in the supply chain in your organization? *

Covid restrictions could deeply halter supply chains which are dependent on different countries for different parts.

To what extent do you think issues described earlier can be mitigated by implementing blockchain solutions? *

Blockchain can help in better tracking all the parts and giving a systematic and secure flow to the chaos after covid.

What could be prerequisites and preconditions for the implementation of Blockchain technology in your organization? *

Good connectivity with strong bandwidth, storage capacity, technical skills for resources, Networking hardware, ERP system

What can be prominent drivers for enabling blockchain in the supply chain? *

Various sensing, communication, storage and processing technologies such as the Internet of Things (IoT), 5G, cloud computing, Edge/Fog computing and data science have enhanced the digital capabilities in the organizational layers of the supply chain.

What can be the major limitations that prevent the implementation of blockchain in the supply chain? *

Scalability, limited connectivity or technical issues, complexity of application, insufficient funds, lack of technical skills, still in development stage

[Empty form box]

nt is neither created nor endorsed by Google.

Google Forms

Thesis Questionnaire - Integration of Blockchain with Supply chain

Using this questionnaire, I am researching about the extend to which decision makers see implementing blockchain as a way of optimizing supply chain, foreseeable future opportunities and limitations.

Email *

pranshukumar92@gmail.com

Your Full Name *

Pranshu Kumar

What is your current role in your company? To what extent are you involved with supply chain or IT? *

Product Manger

Not involved in supply chain or IT.

Are you aware of blockchain technology? Was it implemented in your organization? How was it implemented? If not, why ? *

Yes.

No, my organization does not rely on blockchains today. It is still being researched internally and might be considered as a technology we rely on in the future.

Describe current and foreseeable issues in the supply chain in your organization? *

N/A

To what extent do you think issues described earlier can be mitigated by implementing blockchain solutions? *

N/A

What could be prerequisites and preconditions for the implementation of Blockchain technology in your organization? *

Maturing of the blockchain technology will definitely be a precondition before my company decides on adopting it.

What can be prominent drivers for enabling blockchain in the supply chain? *

I think just the wider adoption of the tech. in the industry over time will drive this

What can be the major limitations that prevent the implementation of blockchain in the supply chain? *

1. Finding Developers who are experts
2. Common knowledge and easy learning around blockchain tech.

Any additional comments

N/A

This content is neither created nor endorsed by Google.

Thesis Questionnaire - Integration of Blockchain with Supply chain

Using this questionnaire, I am researching about the extend to which decision makers see implementing blockchain as a way of optimizing supply chain, foreseeable future opportunities and limitations.

Email *

tmankit01@gmail.com

Your Full Name *

Ankit

What is your current role in your company? To what extent are you involved with supply chain or IT? *

Data Scientist

Are you aware of blockchain technology? Was it implemented in your organization? How was it implemented? If not, why? *

Yes, I am aware of it. It is not implemented in my org as we are a FINANCE company

Describe current and foreseeable issues in the supply chain in your organization? *

NA

described earlier can be mitigated by implementing

reconditions for the implementation of Blockchain

enabling blockchain in the supply chain? *

what prevent the implementation of blockchain in the supply

nt is neither created nor endorsed by Google.



Thesis Questionnaire - Integration of Blockchain with Supply chain

Using this questionnaire, I am researching about the extend to which decision makers see implementing blockchain as a way of optimizing supply chain, foreseeable future opportunities and limitations.

Email *

kshivank@gmail.com

Your Full Name *

Shivank Goel

What is your current role in your company? To what extent are you involved with supply chain or IT? *

Product Manager, Not involved in Supply chain but responsible for digital workflow management

Are you aware of blockchain technology? Was it implemented in your organization? How was it implemented? If not, why ? *

Not implemented as there is no clear business use case identified/explored as of today

Describe current and foreseeable issues in the supply chain in your organization? *

a) Providing more accurate and transparent end to end tracking of products b) Reducing transaction costs with supply chain vendors c) Process automation throughout the supply chain

To what extent do you think issues described earlier can be mitigated by implementing blockchain solutions? *

All the issues can be addressed using a blockchain to a large extent

What could be prerequisites and preconditions for the implementation of Blockchain technology in your organization? *

- a) Building awareness and understanding of blockchain as a technology amongst the management teams
- b) Identifying the business case and quantifiable benefits of implementing the the technology c) Employee competency to build and maintain the blockchain systems

What can be prominent drivers for enabling blockchain in the supply chain? *

- a) Potential quantifiable financial benefits b) Brand/Reputation benefits from implementation of blockchain

What can be the major limitations that prevent the implementation of blockchain in the supply chain? *

- a) Management buy in and understanding of the potential of the technology b) Time & money required to build competency in staff throughout the supply chain to manage the IT systems that they will interface with

Any additional comments

This content is neither created nor endorsed by Google.

Google Forms

s

Appendix 4: Results of code references of NVivo

Name	Code	Reference
Kevin Bao	8	12
Jyoti Tauro	10	15
Jayaraj Arokiyasamy	11	15
Erik Valiquette	13	18
Anisha Goel	35	60
Arjun Kalia	8	15
Darshit Shah	13	24
Jayaraj Trivedi	14	30
Anup Chhokar	27	54
Het Vyas	14	21
Goutham Ravichandir	18	30