Geeq™

CONVENIENT, VERIFIABLE & HIGHLY SECURE
BLOCKCHAIN ARCHITECTURE FOR SMARTER SUPPLY CHAINS

SUMMER 2021

The Challenge In Numbers

$35bn

The total cost of replacing damaged medication in the pharmaceutical industry

50%

Estimated percentage of vaccines wasted due to temperature, logistics and shipping issues

$88.9bn

Expected market value of the global logistics automation industry by 2026

20,000

The average number of parts in an automobile, sourced from thousands of different suppliers

Increasing Complexity

Supply chain management has grown increasingly complex over the past half century as many firms moved away from vertically integrated business models to focus on their core competencies, while outsourcing non-essential processes.

Deepening globalization has only served to accelerate these trends. Involving more entities, however, makes coordination for quality control, enterprise resource planning (ERP) and compliance more complex, while the whole is only as strong as the weakest link.

MORE STAKEHOLDERS, MORE INTERACTIONS

Blockchain and Supply Chain

A potential game-changer:

Blockchain promises to increase transparency for the relevant parties, prevent duplication of administrative work, and automate transactions through the use of smart contracts and Internet of Things (IoT) devices.

Struggling to achieve adoption:

Despite ever-growing demands to balance resilience with compliance, reduce waste and delays, and improve quality, speed, and efficiency, existing distributed ledger technologies have been of little help to supply chains, suffering from the same problems themselves.

THE TWO CHAINS HAVE BEEN BROKEN IN THE SAME WAYS

So, What's Blocking Blockchain In The Supply Chain Sector?

Research shows many business leaders in the sector are actively considering blockchain, but several concerns worry them:

Complexity: why do I need a new kind of software?

Specificity: is this technology adaptable to my specific circumstances?

Security: will blockchain expose too much sensitive data?

The Bottom Line: where are the cost savings and efficiency gains?

Complexity and The "Black Box" Effect

Specific technical requirements...

Blockchain promises to enable multiple stakeholders, who may not know or trust each other, to record transactions on a distributed and mutually trusted ledger.

The technical requirements of the supply chain sector, however, make implementing blockchain a challenge. These include support for large transaction volumes, the ability to integrate specialized IoT devices and sensors, and the ability to scale without inhibiting the speed of the network.

lead to more complexity.

The blockchain industry is working on scalable solutions, through side chains, beacon chains, and directed acyclic graphs (DAGs). However, each additional layer in the tech stack gives rise to new uncertainties, additional attack surfaces and potential points of failure in the overall system.

Too often, the cart is placed before the horse, with all the focus on the underlying technology and too little attention given to ease of adoption, practicality and potential cost savings.

Flexibility, Scalability and Stability

Traditionally, truly decentralized blockchain networks could be optimized for either scalability or security, but not both. This is a compromise that enterprise clients in the supply chain sector are not willing to make.

Private Blockchains are not really blockchains. They don't solve the scalability trilemma, they just ignore one of its corners: *decentralization*

Public Blockchains lack the speed, reliability, flexibility, affordability and scalability to be viable for most real-world applications. To comply with regulations and ensure auditability, for instance, firms may need to continually monitor and log IoT telemetry data at regular intervals. Most existing public blockchain solutions are poorly suited to this task due to limited scalability and volatile transaction costs.

Security

Research suggests early adopters are yet to be convinced about the security of blockchain. There are likely to be multiple factors at play here, including:

Sharing Sensitive Information. Some businesses may fear unnecessarily or inadvertently exposing private data to their business partners or potential competitors. Existing solutions for permissioning are clunky, time consuming, expensive, and hard to use.

Well-funded Cyberattacks. Given the importance of supply chains to the stability of national economies, well-funded cyberattacks (such as 51% attacks) by state actors cannot be overlooked. Traditional, central data control *feels* safer, but is an increasingly easy target. Furthermore, as many of the largest blockchain mining pools are in China, a country that explicitly aims to control blockchain applications, state-level interference is a real threat.

Smart Contracts. Smart contracts are intended to automate the execution of agreements to make life easier. However, existing smart contract platforms are not mature, have bugs, carry high overhead, and can be costly. Blockchain used for data consistency is simpler, has immediate value, and does what blockchain does best.

FAST . LIGHT . SCALABLE . FLEXIBLE . HIGHLY SECURE .

. . .

Geeq is a new type of blockchain architecture ideally suited to supply chain applications.

Geeq: Managing Complexity Through Simplicity

Geeq's interoperable, multi-chain architecture allows businesses to create purpose-built blockchains optimised to specific supply chain applications. This flexibility is achieved through a two-layered structure:

Validation Layer. Streamlined, efficient, and secure, it verifies transactions of data and tokens and automates payments.

Application Layer. Geeq's multi-chain architecture means blockchains can be customized to separate or combine as many (or as few) workflow processes as you need. Every chain is validated by its own network, so there is no shared overhead with other companies or applications.

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Geeq's two-layered structure for each blockchain means it is highly flexible. Your supply chain may use an existing application, or you can write a new one to securely connect to a validated and dedicated blockchain database through an API. Geeq is an application-agnostic technology, able to support decentralized apps, native tokens, and smart contracts. It provides everything you need, with no bloat.

LESS IS MORE

Geeq: Boundless Scalability

Other blockchain platforms targeting IoT are either centralized or become more expensive as the network grows. Geeq's multi-chain architecture contains costs by reducing overhead. Thus, you can use Geeq to efficiently and continuously log data from IoT devices.

Speed. A single Geeq chain can be calibrated to achieve 500 transactions per second or 15.768 billion transactions per year (for comparison, the entire Ethereum network performs 440 million transactions per year)

Affordability. Transaction costs are a fraction of a cent and can be as low as $0.001

Unlike other complex IoT systems, with Geeq, costs increase linearly, not exponentially. Geeq can be used to regularly and continuously monitor widespread deployments of IoT devices. In addition, smart devices like thermometers, GPS chips, moisture and shock detectors and other sensors can be integrated directly into a Geeq chain without requiring a smart contract bridge.

LINEAR, SUSTAINABLE GROWTH

Geeq: Unrivaled Security

Geeq's unique consensus mechanism, Proof of Honesty, creates a novel payment system that incentivizes competition between nodes to maintain accurate ledgers. By shifting the focus of technology to providing data integrity for users, rather than maximizing miner or staker rewards, Geeq delivers unrivaled security:

Robust. Geeq is the only blockchain that provides 99% Byzantine Fault Tolerance and strategically provable security (SPS). This provides a degree of security robust enough to repel even well-funded attacks by nation states.

Nuanced And Configurable. Due to its scalability, Geeq chains can function purely as sequences of attestations or databases for IoT telemetry. Companies can encrypt their data and share it with their partners on a *need-to-know basis*.

Future-proof. Geeq's multi-chain architecture is designed so that any blockchain can be upgraded seamlessly for protection in the quantum age. Other platforms will have to retool entirely.

HONESTY IS THE BEST POLICY

How Geeq Compares To Other Leading Solutions

	Proof of Work	Proof of Stake	Private Proof of Authority	Proof of Honesty (Geeq)
Decentralization	Yes	Yes	No	Yes
Anonymous	Yes	Yes	No	Yes
Transaction costs	$.25- $50	Depends***	Depends	$0.0001
Speed *(measured in Transactions Per Second, TPS)*	Low	Medium	High	High: Up to 500 TPS.
Scalability	Low, due to scalability trilemma	Medium	Scalability comes at the expense of decentralization	High
Security *(measured in Byzantine Fault Tolerance, BFT**)*	50%	30%	33%	99%

The Team: We Are Geeqs

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Technology R&D to Market
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STEPHANIE SO
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Technology Analysis
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HANS SUNDBY
Head of Crypto
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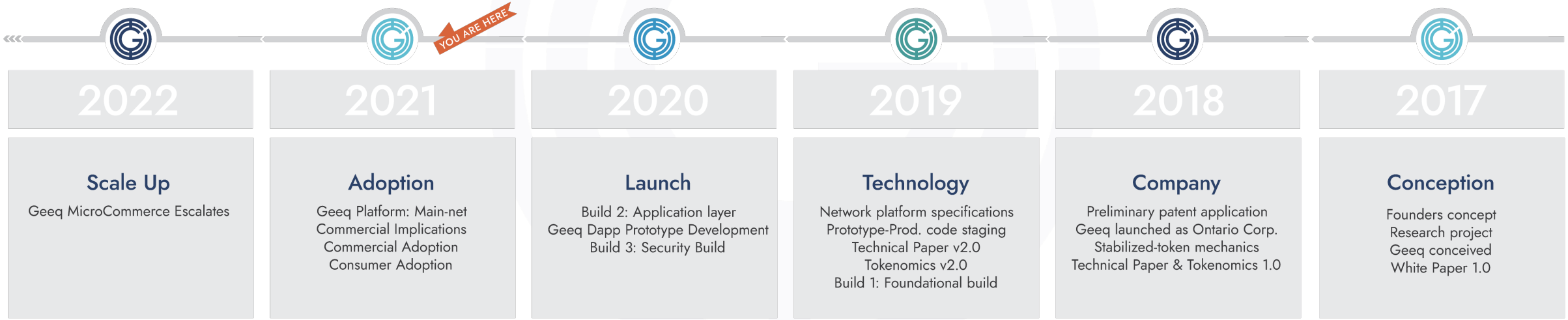
The Roadmap:
Getting There, One Step At A Time...



... and here we are!

Geeq™

THANK YOU

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