



Strengthen the fabric of your supply chain with a blockchain Digital Thread

Globalization and the proliferation of internet-based technologies have enabled companies to build complex global B2B supply chains. Large multinational companies often lean on contract manufacturers, third-party logistics firms, distributors, dealers, and retailers in search of a more efficient way to build their supply networks.

As global supply chains have become more complex, their processes increasingly rely on expensive, manual reconciliations using fragmented information. The solution is blockchain. Blockchain increases efficiency and reduces costs and errors for next-generation supply chain management.

A 2017 *Harvard Business Review* article distilled the issues facing modern-day supply chains. One of the biggest is that

every company maintains transaction records but many have no master ledger. Instead, information is scattered across units and functions. Reconciling this information takes time and errors are common.

According to analysts at Gartner, “Blockchain is aligned to potentially fulfill critical and long-standing challenges presented across dynamic and complex global supply chains that traditionally have held centralized governance models.” It is a mistake to think of blockchain only in the context of its most visible application: cryptocurrencies such as Bitcoin. While this is the origin of the technology, it has many other applications. Supply chain executives are starting to use blockchain for practical solutions to long-standing business challenges.

In many cases, companies have critical business processes that rely on information from private records held by multiple suppliers. For example, warranty claims for products made by a third party and sold through distributors often require information about when the product was manufactured, shipped, sold, and any warranty and repair history. It is unlikely that this information is held in one place.

In response to such challenges, companies are creating de-centralized product-data repositories that source transactional data using blockchain platforms. When linked, these repositories form a Digital Thread, an integrated view of a given product across its lifecycle.

Transactions written to a blockchain platform are secure and immutable, so this Digital Thread provides a transparent and trustworthy view of a product's history as it travels through a multi-party supply chain. Research indicates that best-in-class firms are 2.4 times more likely to develop a Digital Thread tying together all phases of a product lifecycle.

A digital product trail can streamline and automate many processes that are more tedious without a single source of truth. For example, combining this trail with a smart-contract verification protocol means companies avoid costly and error-prone data reconciliation exercises and, in turn, automate some business decision making.

Some companies are already using blockchain-based Digital Thread solutions to streamline supply chains.

Use case: RMA and warranty claims settlement

Blockchain can streamline processes related to reverse logistics. Finished goods are often composed of sub-assemblies manufactured by multiple companies. Products such as automobiles and cell phones are also often sold via distributors, dealers, or retail outlets. That means evaluating a return or warranty claim by a customer often involves reviewing several

sets of private data across the supply chain. Responding to these claims is often time-consuming and inefficient, delivering a poor customer experience.

Blockchain can be used to build a de-centralized repository to streamline warranty and return processes. Capgemini is currently working with a leading tire manufacture to implement Oracle Blockchain Cloud Service with Oracle Supply Chain Cloud to solve challenges related to product authentication for warranty-claim automation. In addition to part authentication, the client can leverage the data in the repository for other functions, such as disposing of failed parts for repair or end-of-life/replacement, automating a warranty claim decision, and targeted recalls.

Use case: Digital track-and-trace for inbound logistics

Companies are experimenting with solutions designed to combine their data with suppliers, third-party logistics providers, distributors, and retailers to follow the movements of products from source to customer. For example, one of our high-tech manufacturing clients wants to track inbound products with blockchain as they are shipped from vendors, so they can avoid maintaining complex integrations with vendors and freight carriers.

Other potential blockchain solutions include:

- Regulatory compliance: pharmaceutical companies can build a tamper-proof chain of custody
- Farm-to-fork traceability: blockchain-based track-and-trace solutions can establish detailed digital provenance records for perishable and short-shelf-life products
- Product authentication: luxury brands and retail partners can combat counterfeiting of high-value products
- Lot lineage and genealogy: trace through detailed records of manufacturing inputs, simplifying the process of tracing quality issues across complex product structures.

Critical success factors for leveraging blockchain

Blockchain has the potential to solve critical supply chain issues, but there are success factors to be considered.

- Educate your teams. Blockchain is relatively new and so not always understood by stakeholders.
- Adopt an agile approach. Aim for quickly achievable wins with solid business cases and demonstrable benefits. Small, agile, cross-functional teams can deliver incremental value.
- Evaluate technology platforms carefully. Blockchain platforms have different attributes and capabilities. Some are more suitable for deployment in an open-source environment, while others from more traditional software vendors, such as Oracle, have enterprise-grade platforms integrated into broader digital-experience platforms. Oracle's offering features an enterprise-class blockchain platform with leading security, encryption, an integration SDK, and a pre-built development Platform-as-a-Service (PaaS). It also offers Software-as-a-Service applications, with ready-made integrations to its cloud-based business software and BI and analytics platform.
- Ensure the problem being solved is well understood. Clearly define objectives and success criteria. Analyze the problem to ensure a blockchain solution is appropriate.
- Involve business and technology stakeholders in planning the project. Blockchain projects are technologically complex. However, the technology should solve specific business problems. Planning and executing in silos without input from both business and technology creates risks.

Global spending on blockchain is growing rapidly and the applications for supply chain are exciting. Analyst reports note companies which deploy a Digital Thread are seeing major improvements in key metrics, such as a 16% increase in on-time and complete shipments and a 20% decrease in time-to-market for new products.

Capitalizing on this new technology means companies can retain or grow competitive advantage. A recent article from McKinsey encouraged market leaders to be early adopters, with the greatest risk being inaction.

Blockchain-based supply chain solutions will quickly move from differentiators to table stakes, especially in industries where efficient supply chain operations are a primary competitive advantage. Companies need to act quickly to pilot blockchain solutions while early adopter status is still available.





About Capgemini

A global leader in consulting, technology services and digital transformation, Capgemini is at the forefront of innovation to address the entire breadth of clients' opportunities in the evolving world of cloud, digital and platforms. Building on its strong 50-year heritage and deep industry-specific expertise, Capgemini enables organizations to realize their business ambitions through an array of services from strategy to operations. Capgemini is driven by the conviction that the business value of technology comes from and through people. It is a multicultural company of over 200,000 team members in more than 40 countries. The Group reported 2018 global revenues of EUR 13.2 billion (about \$15.6 billion USD at 2018 average rate).

Learn more about us at

www.capgemini.com

**For more information,
please contact:**

Jim Langford

North American Oracle Sales Leader

jim.langford@capgemini.com

The information contained herein is provided for general informational purposes only and does not create a professional or advisory relationship. It is provided without warranty or assurance of any kind.

People matter, results count.

The information contained in this document is proprietary.
©2020 Capgemini America, Inc. All rights reserved.