



# Blockchain adoption by enterprises

Leapfrogging  
towards reality



**B**lockchain is making its entry into the enterprise landscape faster than we think. The global market size for blockchain technology<sup>1</sup> or the distributed ledger technology is expected to grow to \$ 23.3 billion by 2023 at a Compounded Annual Growth Rate (CAGR) of 80.9% during the 2018-23 period. As per an internal research by Wipro, digital technologies, such as RPA, AI and Chatbots, combined together, are forecast to grow at an average CAGR of 39.81<sup>2</sup> % from 2018-2023, i.e. the average CAGR of blockchain is twice that of the other three technologies combined, thus indicating a goldmine of opportunities in blockchain.

### What is driving the need for enterprise wide adoption of blockchain?

The basic advantages that blockchain can provide organizations include decentralization of business operations, ability to proof transactions and data security.

A plethora of factors is driving large scale adoption of blockchain amongst enterprises (businesses generating >\$1 billion USD in annual revenues), such as funding by venture capitalists (VCs), value chain creation to clients via variety of use cases, and the growing need to simplify processes by creating transparency, and reduce operational costs and transform customer experience (CX).

There are two additional factors that are contributing to the development of a wide range of use cases:

- 1 Need for multi-party environment, i.e. an environment where there are multiple parties involved, such as clients, customers, vendors, contractors, suppliers etc.
- 2 Need for establishing trust between multiple parties because there are variations in processes, systems, data flows, frequencies and modes of communication that add to business complexities.

### Public Vs private blockchain

Private blockchain is gaining traction amongst enterprises as 40-60%<sup>3</sup> of enterprises that have deployed blockchain till date have been on private network (internal to company). The key differences between public and private blockchain are that private blockchain offers the ability to control data and process based transactions, gives permissions for users to log onto a private cloud on a real time basis, enables consensus building and security via recording transactions, and optimizes performance due to the design of network. Additionally, with private blockchain a variety of use cases are possible and it also offers the scalability to accommodate a large number of users.

#### Basic cryptographic concepts applied in our use cases:

- **Asymmetric key encryption:** a method of public key cryptography using private and public keys
- **Public key:** a secret code assigned to an individual to decrypt messages or transactions
- **Private key:** a piece of asymmetric key used to encrypt messages or transactions
- **Encryption:** the process of encoding a message so that its meaning is not obvious to the users
- **Decryption:** the process of decoding an encrypted message
- **Hashing:** the process of converting plain text into cypher text or taking an input string of any length and giving out an output of a fixed length

### Use cases of blockchain across industry verticals

Banking & Financial institutions (BFSI) apparently dominate blockchain development, as data suggests that around 50-90% of American and European banks are exploring blockchain and the financial services industry alone spends around \$1-2 billion on blockchain<sup>4</sup> on an annual basis.

According to Deloitte's 2018 global blockchain survey, 53% of enterprises are likely to list use cases on supply chain, 51% on Internet of Things (IoT), 50% on digital identities, 44% on digital records and 40% on digital currencies.

Clearly, supply chain and digital identities figure amongst the top priorities.

Let us examine some areas where use cases in blockchain are being discussed at greater lengths today:

### Pharma industry

- Securing patient health records or any medical documentation
- Clinical trial test date records for secure distribution
- Anti-counterfeit measures taken to check spurious drugs and medicines

### Banking

- International remittance involving cross border currency transfers
- Know Your Customer (KYC) involving customer databases and records
- Mortgage contract and counterparty risk tracking and management

### Retail & CPG

- Loyalty program using token mechanism for reward allocation and redemption
- Automobile registry and ownership transfers

### Logistics & SCM

- Vehicle analytics to track the movement of vehicles that fulfil the promise of last mile delivery to users and driver analytics to login their duty records.
- **Source to Pay:** managing vendor onboarding, vendor contracts, service agreements and many other aspects of end to end supply chain process
- **Order to cash:** This is a subset in the supply chain process for tracking goods movement and financial settlement for order closure

### Across industries

- **Digital signatures:** Allowing authenticity on transfer of documents
- Interparty payment and intellectual property rights and settlements across industries
- Asset warranty record keeping and service records management

We will now deep dive into the digital signature and order to cash (O2C) use cases.

## Digital signature

- A) Why this use case?** It is the most common use case that industries and businesses would come across because of the simplicity envisaged in implementing it, ease of deployment and the envisaged cost effectiveness. Digital signatures are an inevitable piece for any enterprise irrespective of size and scale, as more and more enterprises focus on envisaging a higher return on investments.
- B) What type of use case is this?** Digital signatures available in the market can be broadly categorized into basic and advanced types. Image-based signature and click to sign are the examples of basic types, while the e-signatures based on cryptography are the advanced type. Basic type is definitely easy and cost effective, but suffers from authenticity and security flaws, while the advanced type is relatively expensive, but in both types, sensitive documents have to be fully accessible by the receiving parties for authenticity verification.
- C) Where is this used?** It finds immediate applicability across a host of industries, such as pharma, retail, CPG, manufacturing, banking, financial services, insurance etc.
- D) When is this used?** Used in cases of formalizing and approving legal contracts with the defined statement of work (SoW) by parties on either side. Digital signature, be it for contractual or for business approval, is a very generic use case finding greater acceptability.
- E) Who are the users and whom does this target?** The use case targets almost all corporate functions, such as finance-ac counting, HR, procurement, IT, legal, sales, customer service etc. with the users generally being the head of the particular function or units.

**F) How does digital signature operate?** With distributed ledger of records as a feature, document or any business artefacts can be securely shared on a private enterprise network and authentication of document/signatures can be verified by looking at the transaction record on ledger, and security standards can be defined around access rights for shared objects as read or modify types for the rightful owners. Further, documents/artefacts can be encrypted for secured sharing across networks allaying concerns of manipulation or tampering.

**G) Benefits that can be realized using digital signatures:** Digital signature led solutions based on distributed ledger technology can provide the benefits of implementing solutions such as digital signatures with optimized cost and fewer control mechanisms and can save at least 25% of time based efforts spent to formalize and agree upon contracts and legal documents.

Figure 1 clearly highlights that the signatures are stored over the private blockchain network. Once executed, the additional security and privacy can result in enormous cost savings for organizations. In the AS-IS process, i.e. first part of the image above and the TO-BE process in the second part of the image, the core difference lies in terms of the data being encrypted and the data being stored or recorded in a private blockchain.

**Order to Cash (O2C)**

**A) Why this use case?** As per research, after cryptocurrencies, this continues to be the biggest area of interest and experiment by market leading players for their supply chain operations.

**B) What type of use case is this?** It is a complex use case due to various moving pieces, multiple parties and distributed locations in the supply chain and targets each entity in the supply chain network. Each role has policies, processes and rules defined and hence standardization and data security pose foremost challenges.

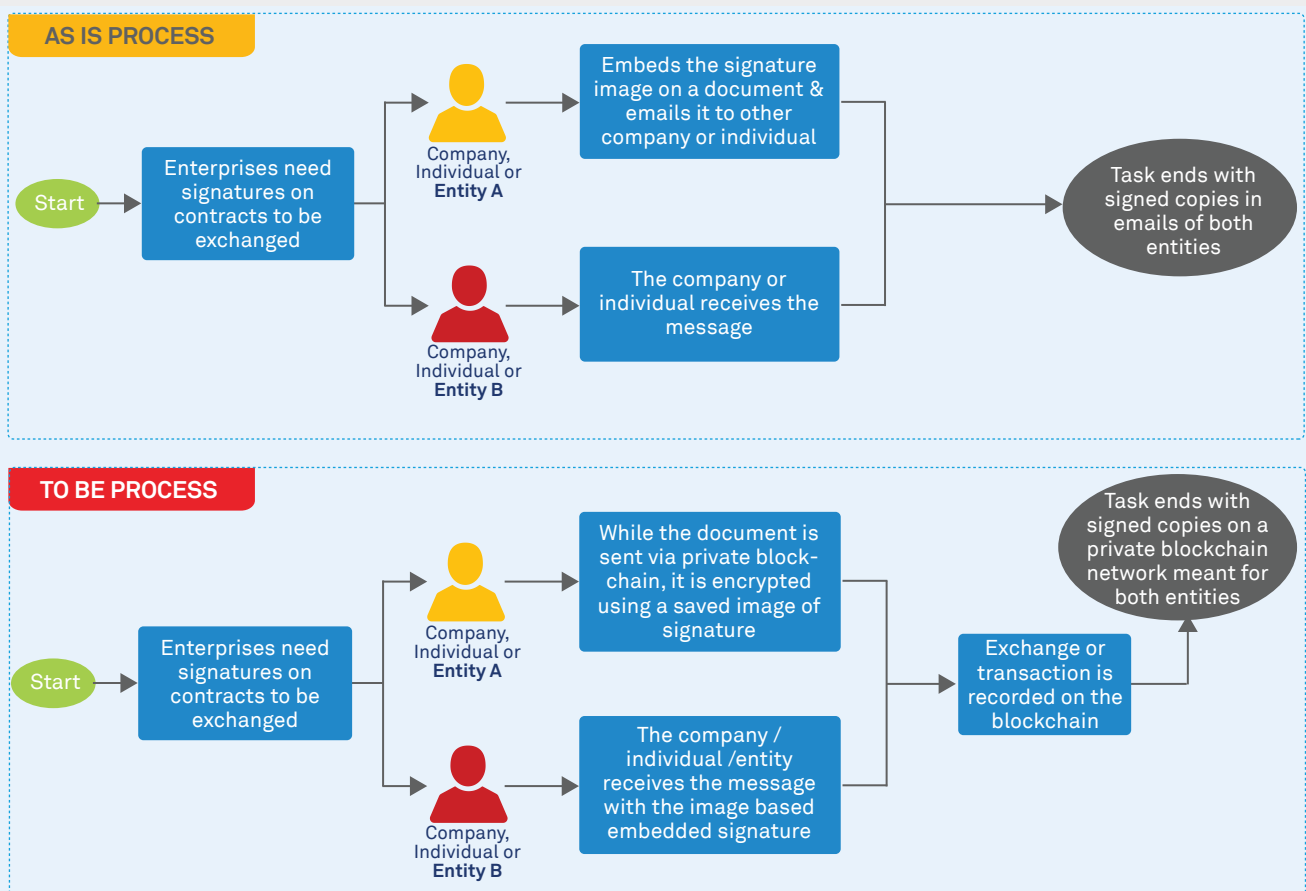


Figure 1: A typical AS-IS and TO-BE process map

- C) Where is this used?** Multitude of industries could become an ideal candidate for this use case, retail, CPG, manufacturing, oil and gas, telecom being some of them.
- D) When is this used?** Particularly used in enhancing Customer Experience (CX) with objectives being data transparency, defining rules for multiple horizontal functions, multiple stakeholder communication and end user customer experience enhancement.
- E) Who are the users and whom does this target?** Distributed ledger technology in Order to Cash (O2C) becomes an ideal candidate for implementation as many participants predominantly lie within the SCM, Procurement, and Order Management & Logistics function.
- F) How does digital signature operate for O2C?** Some prerequisites include participant nodes, digital id, and asset id and business rules to govern asset transaction and exchange records. Each business entity can be assigned a node on the network. A node is an authorized repository where all transactions in the network are stored, and access to the transaction records is assigned to respective actors via digital id, which further provides rules to approve/reject transactions. The transactions are replicated across the nodes automatically and each party can access the records for real time status for asset under transit.
- G) Benefits that can be realized?** With this use case, users can be securely brought onto a single network platform with different business rules based on participant type and access rights can be defined to achieve this common goal of efficiency and visibility. Some typical value adds using this could be up to 40% of process steps being streamlined within the selected functions. Benefits of real time shipment status, cost of reduced extensive communication mechanisms, elimination of multitudes of systems and addressing time delays in status can actually result in million-dollar savings annually for enterprises.

A mapping of AS-IS & TO-BE process within the O2C function (**Figure 2**) reveals that the process is actually getting simplified with the all support processes, such as PO (Purchase Order) creation, SO (Sales Order) creation, GR-GI creation and invoicing being executed at the back end and in parallel to the front end process activities due to the implementation of blockchain.

Digital signatures typically envision a concept to deployment cycle of three to six (3-6) months and Order to Cash involves a concept to deployment cycle of six to nine (6-9) months with adoption rates ranging on factors, such as risk appetite of enterprises, budget allocation, resource skillset and mindset to explore return on investments.

Blockchain is clearly gaining incremental traction amongst enterprises evident from the fact that around 28% of enterprises have selected their first blockchain provider and around 42% of enterprises are still in the discovery phase of their blockchain journey. Some of the use cases identified above serve as a quick testimony for Blockchain's growth potential and enterprises should jump on to the bandwagon of adoption by examining simple use cases, gradually moving to complex use cases to stay relevant in the expanding wave of automation.

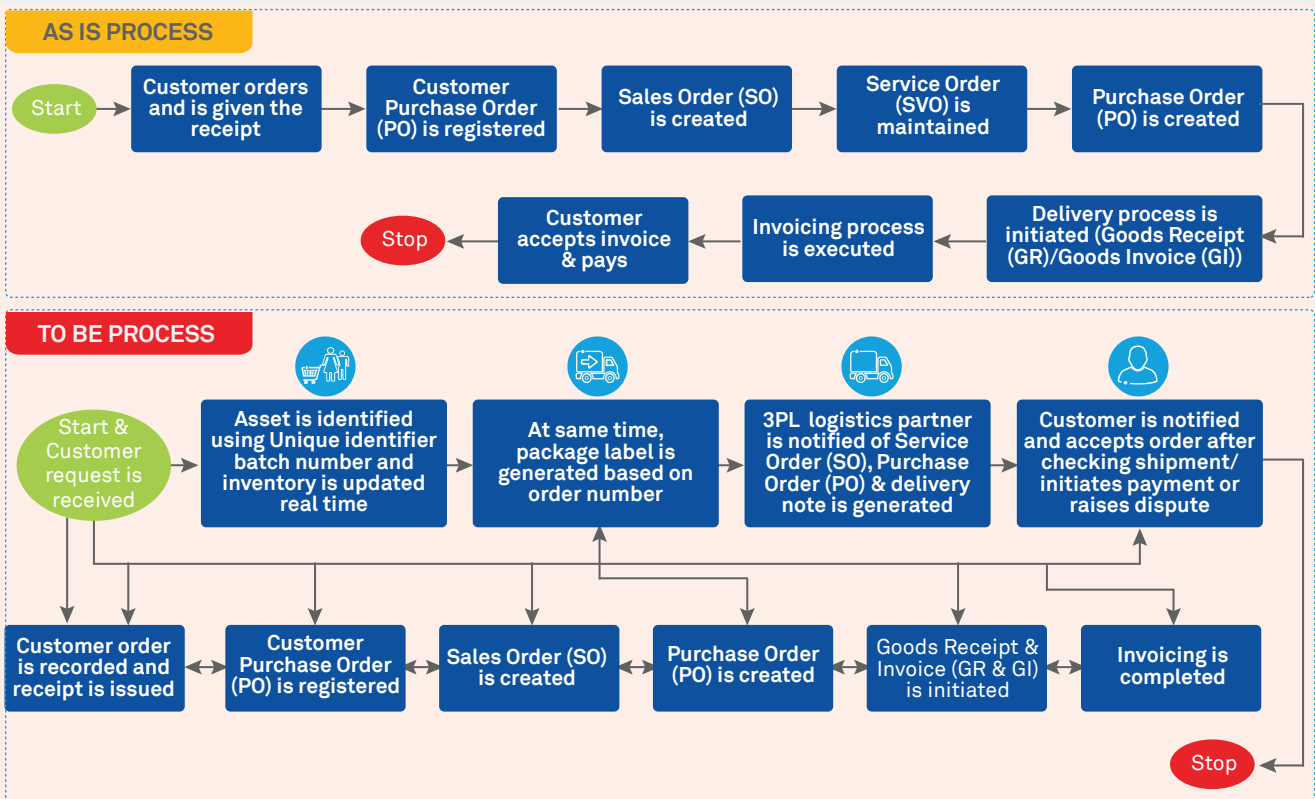


Figure 2: AS-IS & TO-BE process for O2C function

## About the author

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Mehul brings in 12 years of rich experience dealing with CXO level clients across Fortune 100 organizations and business domains such as digital transformation, customer experience enhancement, business strategy, B2B/B2C consulting, marketing and pre-sales & operations.

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Dhiraj brings in 11 years of exposure dealing with digital technologies, such as Blockchain, Artificial intelligence and Internet of things and is responsible for diagnosis, designing, solutions, development and delivery of transforming technologies across multiple business domains.

## Endnote

- <https://www.prnewswire.com/news-releases/the-global-block-chain-market-size-is-expected-to-grow-from-usd-1-2-billion-in-2018-to-usd-23-3-billion-by-2023--at-a-compound-annual-growth-rate-cagr-of-80-2-300762798.html>
- Wipro internal research on CAGR of technologies like RPA, AI & Chatbots, December 2018
- <https://www2.deloitte.com/content/dam/Deloitte/us/Documents/financial-services/us-fsi-2018-global-blockchain-survey-report.pdf>
- <https://www.openxcell.com/few-interesting-facts-and-statistics-about-the-blockchain-technology>



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