**BlockChain**

**What is BlockChain?**

Blockchain is a shared, immutable ledger that facilitates the process of recording transactions and tracking assets in a business network. Virtually anything of value can be tracked and traded on a blockchain network, reducing risk and cutting costs for all involved.

**Why Blockchain is important:**

Business runs on information. The faster it’s received and the more accurate it is, the better. Blockchain is ideal for delivering that information because it provides immediate, shared and completely transparent information stored on an immutable ledger that can be accessed only by permissioned network members. A Blockchain network can track orders, payments, accounts, production and much more. And because members share a single view of the truth, you can see all details of a transaction end to end, giving you greater confidence, as well as new efficiencies and opportunities.

## Key Elements of BlockChain:

#### **Distributed Ledger Technology**

The BLOCKCHAIN network members can access the record of transactions and the distributed ledger. In this technology, transactions are only recorded once, which minimises the chances of duplication, which is normal in the case of traditional business networks.

#### **Immutable Records**

 Once the transaction is recorded in the ledger, there’s no way any BLOCKCHAIN participant can tamper with the data or make changes. In case the transaction records an error, a new transaction must be added to reverse and eliminate the error.

#### **Smart Contracts**

Smart contracts or a set of rules are stored in BLOCKCHAIN, which is automated. This contract involves information like terms for travel insurance, conditions for corporate bond transfers, and so on.

**How BlockChain work:**

1. As each transaction occurs, it is recorded as a “block” of data. he data block can record the information of your choice: who, what, when, where, how much and even the condition
2. Each block is connected to the ones before and after it. These blocks form a chain of data as an asset moves from place to place or ownership changes hands. The blocks confirm the exact time and sequence of transactions, and the blocks link securely together to prevent any block from being altered or a block being inserted between two existing blocks.
3. Transactions are blocked together in an irreversible chain. Each additional block strengthens the verification of the previous block and hence the entire blockchain. This renders the blockchain tamper-evident, delivering the key strength of immutability. This removes the possibility of tampering by a malicious actor — and builds a ledger of transactions you and other network members can trust.

There are four main types of blockchain networks: public blockchains, private blockchains, consortium blockchains and hybrid blockchains.

### **1. Public blockchain**

The first type of blockchain technology is public blockchain. This is where cryptocurrency like Bitcoin originated and helped to popularize [distributed ledger technology](https://www.techtarget.com/searchcio/definition/distributed-ledger) (DLT). It removes the problems that come with centralization, including less security and transparency. DLT doesn't store information in any one place, instead distributing it across a peer-to-peer network. Its decentralized nature requires some method for verifying the authenticity of data. That method is a consensus algorithm whereby participants in the blockchain reach agreement on the current state of the ledger. Proof of work (PoW) and proof of stake ([PoS](https://www.techtarget.com/whatis/definition/proof-of-stake-PoS)) are two common consensus methods.

### **2. Private blockchain**

A blockchain network that works in a restrictive environment like a closed network, or that is under the control of a single entity, is a private blockchain. While it operates like a public blockchain network in the sense that it uses peer-to-peer connections and decentralization, this type of blockchain is on a much smaller scale. Instead of just anyone being able to join and provide computing power, private blockchains typically are operated on a small network inside a company or organization. They're also known as permissioned blockchains or enterprise blockchains.

### **3. Hybrid blockchain**

Sometimes, organizations will want the best of both worlds, and they'll use hybrid blockchain, a type of blockchain technology that combines elements of both private and public blockchain. It lets organizations set up a private, permission-based system alongside a public permissionless system, allowing them to control who can access specific data stored in the blockchain, and what data will be opened up publicly.

**4. Consortium blockchain**

The fourth type of blockchain, consortium blockchain, also known as a federated blockchain, is similar to a hybrid blockchain in that it has private and public blockchain features. But it's different in that multiple organizational members collaborate on a decentralized network. Essentially, a consortium blockchain is a private blockchain with limited access to a particular group, eliminating the risks that come with just one entity controlling the network on a private blockchain.

**Benefits of Blockchains**

1. Improved accuracy by removing human involvement in verification
2. Cost reductions by eliminating third-party verification
3. Decentralization makes it harder to tamper with
4. Transactions are secure, private, and efficient

**SaaS with BlockChain**

ASaaS blockchain is a cloud-based software delivery model that leverages the power of blockchain technology to provide a more secure, efficient, and transparent service than traditional SaaS*.*

## How Do Blockchain and SaaS Fit Together?

 By combining the security and transparency of blockchain with the flexibility and ease of use of SaaS, businesses can enjoy a cloud-based software delivery model that is more secure, efficient, and transparent than ever before. One of the key benefits of using blockchain in SaaS platforms is the enhanced security it provides. Since blockchain is a decentralized and tamper-proof ledger, it eliminates the risk of data breaches and hacking attacks that are common in centralized systems.  the use of cryptographic hashes and consensus mechanisms in blockchain technology ensures that the data stored on the blockchain is immutable and transparent. This transparency can be leveraged in SaaS platforms to improve data privacy, as users can easily track and verify who is accessing their data and how it is being used.

## HOW BLOCKCHAIN CAN ENHANCE SAAS

## BLOCKCHAIN AMPS UP DATA SECURITY

## It is common and normal for consumers to be worried about their personal data. Usually, signing up for software as a service requires giving a lot of personal information such as email, full home address, and credit card information. This can make people feel vulnerable to spam and scams, or worse to theft or harassment. The transparency and security that blockchain databases provide help bring peace of mind to your customers. To keep data secure, blockchains use cryptography hashing. In other words, they use a specific type of algorithm to encrypt the data.

#### **ALL-AROUND PROTECTION**

#### Sometimes security threats are internal rather than external. But blockchains protect companies and individuals against those threats as well. No one can alter data in an existing block without explicit permission. This eliminates the possibility that a company may manipulate sales data. If a transaction is reversed or some other change is made, the original data stays as is and new data is entered into a new block. This increased level of security is a positive blockchain effect on SaaS companies and consumers.

### **TRANSPARENCY WITH BLOCKCHAINS**

### Transparency is an inherent part of blockchains. All transactions and other vital information stored in the blockchain are viewable by all the parties that have a decryption code. Each decryption code is unique, kind of like a digital signature.  This adds another layer of security through transparency because anytime someone attempts to alter the data, you will know who it was immediately. In an event like this, the system automatically takes away that person’s decryption code, and the other members of the network receive notifications.

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