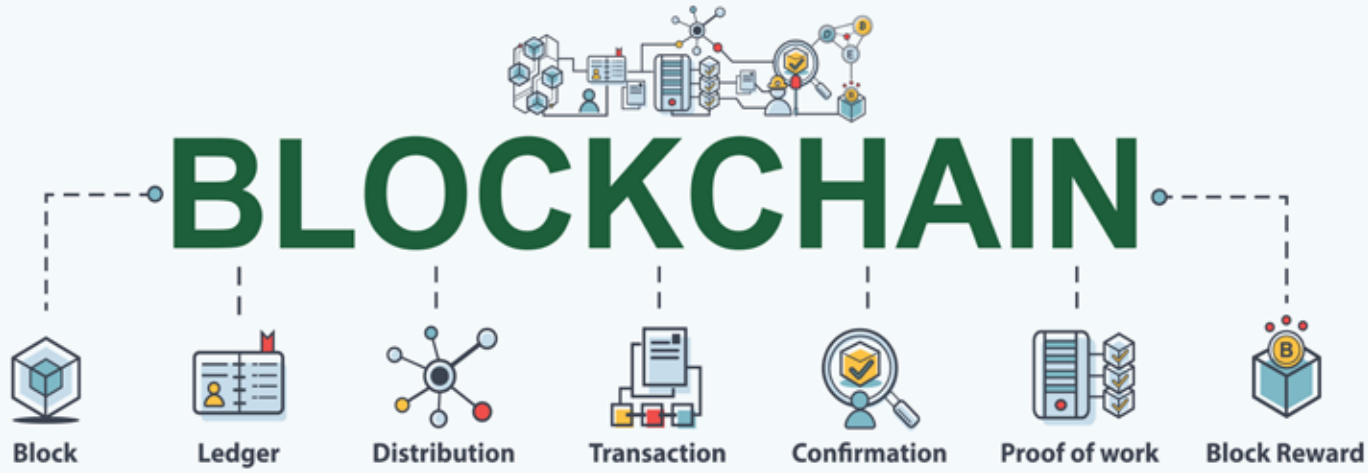

Blockchain 101

We are going back to the basics. If you are familiar with blockchains, this might not be the post for you but if you need some brushing up or need something to show a friend who isn't as familiar, here we are.

Blockchains. You've heard about them. Actually, you are probably hearing about them more and more and more. Just five years ago, many executives doubted the relevance of blockchains, but now, in 2022, 86% of executives believe that there is a significant use case for blockchains in their business.

In the simplest terms, a blockchain is a system of recording information. A blockchain is a type of distributed ledger, which is a database that exists across several locations or among multiple participants. Data is written into a block (think of it as an electronic file in that ledger) that is encrypted so that only those with the "key" can access the information. Each block includes the following types of information–a timestamp to indicate when it was created, historical information about the blocks that precede it in the chain, and information that is new to that block. The data that has been written into those blocks cannot be altered. All of those blocks of data are linked together–on a chain–blockchain.

Blockchains are a decentralized system, also known as a distributed network. In a blockchain, data is distributed across various nodes that are connected by a network. Nodes are points of connection, redistribution, or communication–think of them as a small server, like your personal laptop or smartphone. A blockchain node's main purpose is to verify each batch of network transactions, or the aforementioned blocks.

More traditional, or centralized databases, store information at a single site that other systems flow into, which could be as simple as one computer, or more complicated like the cloud. You might remember when your workplace had a network room (or maybe you work somewhere that still has a network room). It was always locked and just had rows of larger servers stacked on each other. But a while back, big data came along. Companies were dealing with more data than their room could handle. Voila–along came the cloud. The actual cloud being an enormous space with more servers than we can fathom. But the cloud is still in one location–just a huge location.

Why are Blockchains the Bee's Knees?

Basically, blockchains aren't going away and are on the path to be something we all deal with more regularly. But what makes this technology different from the last latest and greatest, i.e., the cloud? There are several reasons, but two of the biggest are, they are faster and they are much more secure–theoretically impenetrable to cyberterrorists.

Did you make those Christmas construction paper garland links as a kid? It was construction paper cut into strips that you formed into links and wrapped around each other. If you didn't, and you have kids now, here is a **tutorial**. I think all kids love doing this.

The point is, think of a link as one block of information and the entire garland as the blockchain–the decentralized system. Each link contains a different set of information. You could say one link has your name, another your address, another your social security number, and while they are linked to make a chain–each link remains independent. If you tear one link off–the rest of the links stay intact. In other words, if you were to take the link with your email off the chain, the links with all your other information stay decentralized from that link.

In a centralized system, one link would contain all the data–every single bit of information you put into that central source. So, instead of a chain, you just make one link, and if that link is torn apart, everything in it is now compromised. If I hack into that central system and get your link, I now know everything you have given to that system.

In this centralized system, because the data is stored in one central area the way this information is easier to breach. Think of a big box store that you regularly shop at and subscribe to their promotional offers. Everything you have ever given them, which usually includes credit card information, address, name, birthday, username, passwords, maybe social security is stored in just one server.

Because of the way a blockchain is set-up, it becomes very hard to hack. Remember how earlier I said each block is encrypted and that you need a key? Well, think of each link as having a different owner, and each owner has a different key. The actual owners are people in technology who have access to all the information and the timecodes but each owner only has access to their block.

There are rules and contracts and technology aspects that are much more complicated to make a blockchain work, but now you have the foundational basics. So, now what?

Decentralize one Block at a Time

Business Wire recently reported that the market for blockchains in supply chain management is predicted to grow from $253 million in 2020 to over $3 billion by 2026. And Deloitte's Global Blockchain Survey revealed that 55% of its senior executive and practitioner respondents viewed blockchain as a top priority.

Many enterprises are already working with blockchain technology. And many enterprises are starting to explore blockchain technology. In fact, in 2014 only 2 out of 100 top companies were working with blockchain, but at the end of 2021, **81 of those 100 companies** are working with blockchain in some way.

There is no doubt, the blockchain is here to stay. Ane while, there really is no "good" time to disrupt your business, as these technologies continue to expand, more companies will be rushing to implement them and the longer your company waits, the more your competition might be getting a leg-up.

But as you know, a lot more goes into even the smallest company change–and disrupting your technology is never small. Money, training, downtime, and buy-ins can impeded progress, even if you want the latest and greatest. Adopting any new technology comes with pros and cons. While some of those pros and cons are similar across organizations and industries, no two solutions are really alike. In order to understand the possibilities you, and your team, must have a deeper understanding of these new technologies and how your unique operastions will benefit from it–as well as what will happen during and after implementation.

The best way to bring about change is through truly comprehending the how, what and why. It's nearly impossible to make a business-critical decision without understanding the outcomes from different scenarios. Once your team has all the information they need–you can move forward with confidence–which benefits you, your company, and your customer.