# What every HR manager need to know about blockchain technology

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## What is blockchain technology?

In simple terms, a blockchain is really a new method of record keeping. It is a ledger.  It is a means of keeping a record of transactions. The term block can be referred to as chunks of digital information and chain referred to as a public database. Something to note about the blockchain network is that it has no central authority. No single person owns or controls a blockchain network. Most people talk of the blockchain as being a shared immutable ledger. This just means the ledger is unchangeable, no one can edit and manipulate it. Since its shared, everyone involved in the blockchain is able to see the information and be accountable for their actions thus promoting some level of transparency and accountability.

## A brief history of how blockchain technology came to be?

On October 31 in 2008, Satoshi Nakamoto published a white paper titled, "Bitcoin: A Peer-to-Peer Electronic Cash System". This formed the basis of the Bitcoin- a digital currency. As part of the implementation of the whitepaper, the first blockchain database was created. Now with over a decade in existence blockchain technology has spanned from the banking to medicine and other sectors and holds disruptive promise for the next decade to come. The website Investopedia breaks down the history of blockchain into 3 phases:

1. Bitcoin and digital currencies
2. Smart Contracts
3. The future-scaling of the blockchain

## How does a blockchain really work?

To explain how blockchain technology works I will pick an example close to the context of Human Resource personnel. Let us say we have 3 HR officers Tatenda, Fadzai, and Sifiso. These 3 meet one night for dinner to catch up on work and what has been happening in their profession. At the end of the dinner, Tatenda pays the bill to the restaurant after agreeing they will all share the cost.

## Without block-chain technology:

The following morning Sifiso sends her share of the bill to Tatenda successfully. Fadzai tries to send her share of the bill but the transaction fails. Fadzai and Tatenda are then reminded of the shortcomings of the traditional banking system. Transaction failure could be due to a technical issue or Fadzai's account

has been hacked or there is an insufficient balance to cover the amount she wants to send and the cost of the transaction or she has reached her daily transaction limit.

**With block-chain technology (Enter crypto currency-Bitcoin, Etherium)**

With blockchain technology, there is no cost of a transaction that means no more bank charges, transaction fees or any of that related fees charged to move your own money. Using cryptocurrencies like Bitcoin, which run on block-chain technology each individual transaction is inscribed on a block, which means the transaction between Sifiso and Tatenda makes a single block, that of Fadzai and Tatenda makes another block. These blocks are encrypted using complex algorithms then linked to form a blockchain. Everyone in the blockchain, in this case, Tatenda, Sifiso, and Fadzai have a copy of the blockchain. No one owns or controls the blockchain and due to the complex encryption and a copy of the blockchain held by those involved, it is impossible to hack or alter the records thus being transparent and secure.

**Another example closer to home:**

If you are an HR person you are probably familiar with the Balanced Scorecard, a performance management system. If not, it is still alright, just consider a scorecard as some spreadsheet or excel file. Now, picture a corporate scorecard for one organisation copied hundreds of times across a network of computers. These computers are not in a single location. In a Zimbabwean context, let us say these computers are located in all our major cities and towns (Harare, Bulawayo, Mutare, Karoi, Chegutu and the list goes on) where the organisation has its branches.  Now consider this network of computers is designed in such a way that it regulates and updates this corporate scorecard keeping a record of every entry made on the scorecard and by who at what time and from which location. This is some basic analogy of how blockchain technology works.

**What has made blockchain technology so popular?**

With just over a decade in existence block-chain technology still, sound new and fresh. Of course, we are yet to fully explore and exploit this technology. There are some factors, hallmarks of block-chain technology you could say, that have contributed to its success and popularity so far. One of the factors is block-chain is not owned by a single entity, it is decentralised. The advantage is the information stored in a blockchain network is not owned by one person, everyone in the network owns the information. Another factor is transparency. Looking at cryptocurrencies' encryption algorithms that use a public key and a private key, you may not see the real identity of a person but it is clear to see the transaction done using their public address. Imagine performance appraisals being run with such transparency, and ultimately payrolls being processed in such a way, talk of salary fairness.

**Blockchain technology implementation in the industry: An example**

Here is another example of how blockchain technology comes to play.  You are done at work and you are on your way home. You decide to pass through OK shops to get some milk for that early morning cereal for the coming day. Upon opening the bottle of milk the following day you realise that you bought

a spoiled product and instead of going straight to the office you pass through OK shops again to return the product and place a complaint. Imagine you are not the only one who has such an unfortunate experience. After receiving your complaint and replacing the product with a good one OK shops can use block-chain technology to investigate at what stage did the milk got spoiled. Since each transaction forms a block in the block-chain network they can check all the blocks from the transaction with the farmer, transportation, packaging, distribution, retail to know where things went wrong and correct thereby saving a lot of money in refunds and replacements.

**Blockchain success besides cryptocurrencies: A real-world example**

Bernard Marr, a contributor at forbes.com lists some block-chain technology real-world examples he has come across in his article here. The list covers the implementation of the block-chain technology from cybersecurity, health-care, manufacturing and industrial and media sectors. Something worthy of note is Dubai's goal of becoming the world's first block-chain powered state. They are looking for opportunities to implement block-chain technology across health records, business registration to name a few. Another example is the work being done by a startup called Gem to manage population health and disaster response by putting data collection and analysis operations on the blockchain. The benefits of an unchangeable ledger in situations where there's been a disease outbreak are vast.

**Opportunities for blockchain technology in Human resources**

Block-chain technology is still being developed and research is still ongoing on the extent of its applications. Human Resources has been collecting data for many years. From experience, wherever there is some record to be made or data to be stored, block-chain technology will surely go a long way in achieving whatever goals you have which will take into account the data human resource data. So yes, there are many use cases for blockchain technology in Human Resources

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