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Blockchain technology could achieve what some commentators are calling the promise of "Internet 3.0", a re-architecting of the Net to assert the core objective of decentralization that inspired many of the early online pioneers who built the Internet 1.0"

- The Truth Machine

Part 1: The Truth Machine

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Recently, in an attempt to get my head around the blockchain, and in particular its application beyond cryptocurrencies, I've been reading 'The Truth Machine' by Michael J. Casey and Paul Vigna. Published in 2018 and thus already in the hyper-time accelerator that is the tech world, it is already somewhat out of date. However, it is a very well-written book, especially for a tech book, and its first couple of chapters provide the best explanations of the blockchain's history, what it is, and what its potential might be.

In its most basic sense, the blockchain is an online ledger, a means of recording every transaction in that ledger, and making those transactions public. The identity of the person or entity making the transaction can be (but doesn't have to be) anonymous but the transaction itself is recorded, made public - and, importantly, can't be altered once it has been completed.

From the intro:

Why have ledgers been so important throughout history? Exchanges of goods and services have defined the expansion of societies, but this was possible only if people could keep track of the exchanges. It wasn't so difficult for everyone in a small village to remember that someone had killed a pig and to trust...that all who ate of it would find some way to later repay the hunter, perhaps with a new arrowhead or some other thing of value. It was another to manage these cross-societal obligations across a larger group of strangers— especially when moving outside of kinship boundaries made it harder to trust each other. Ledgers are record-keeping devices that help deal with those problems of complexity and trust. They help us keep track of all the multiple exchanges upon which society is built. Without them, the giant, teeming cities of twenty-first-century society would not exist.

And later:

Money itself is intrinsically linked to the idea of a ledger. Physical currency like gold coins and paper money are, similarly, record-keeping devices; they too aid with societal memory. It's just that rather than existing within a written account of transactions, a currency's record-keeping function is abstracted into the token— the gold coin, the dollar bill. That token is communally recognized as

conveying some right to goods or services that the bearer has earned from tasks performed in the past.

Once human beings started to engage in exchanges of money across distances, tokens' capacity to play this record-keeping function broke down. There was no way for the payer to physically deliver the tokens to the payee without having to trust a courier who might well steal it. The solution came with the advent of a new form of ledger-keeping known as double-entry bookkeeping...by a clique of Renaissance bankers. In adopting this bookkeeping, they thrust banking into the payments business and, for centuries, helped to greatly expand the capacity for human exchange. It's not an overstatement to say that this idea of banking built the modern world. But it also amplified a problem that had always dogged ledgers: can society trust the record-keeper?

The authors go on to describe the 2008 bank crash as the penultimate example of the breaking of the 'trust bubble' with Lehman Brothers cooking their books 'a vast manipulation of ledgers'. This in turn led to a world where even the concept of trust - in media, politicians, in institutions of all kinds - has been so severely eroded. As they put it:

If people don't trust our economic systems, they don't take risks; they don't spend. The loser is economic growth and development.

The blockchain is posited as a potential solution to this breakdown of trust. The dream of the blockchain is to make financial transactions transparent, give everyone the opportunity to own their own data (instead of everyone from social media companies to marketing agencies to e-commerce sites owning it for us), and, ultimate to create an alternative 'trust-less' (more on this anon) economic system, and provide the backbone for Web3 and the Metaverse (more on these anon as well).

Is this possible or even desirable? Certainly, making the financial system from transparent would be desirable. A Lehman Brothers collapse would no longer be possible, because everyone would see their true financial situation. And money laundering, which seems to have become endemic, would be that much more difficult. To give one example, the book [Kleptopia](#), by Financial Times journalist Tom Burgis, profiles several kleptocrats across the globe (with special focus on Kazakhstan and Nazaryan, who apparently was recently kicked out of power) funnelled their countries' wealth into shell corporations and dark money bank accounts, laundering their money through, among other devices, shady real estate deals. This in turn is one of several factors making cities across the globe too expensive for ordinary people. A financial system based on the online ledger that is the blockchain might make this corruption less possible, perhaps curtail it altogether (I'll leave it to people with infinitely more financial knowledge than I possess to figure out how that would work).

But the question is: would the world's financial titans allow this system to be put in place, even if it were possible? Since they make a lot of money from the system as it is, that is unlikely. And that too, from what I've seen thus far at least, is one of the problems with blockchain (and tech) utopia - yes, it might be the solution, but how will it *become* the solution, even if it is?

In the next few posts, I will try to explain how the blockchain works, its breakdown on a technical level, then hopefully build a couple of projects to illustrate what it can do.