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BLOCKCHAIN, CRYPTOCURRENCY AND INSURANCE

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Show of hands, who has heard of Blockchain? I presume most of us, right? How about Cryptocurrencies aka "Cryptos"? Quite a few, I guess. Do phrases like "HODL", "To the Moon" and "Buy the Dip" mean anything to you? I know I may be pushing it there, but what if I told you that, at the day of writing this, those phrases represent an industry with an estimated market capitalization of $1.78 Trillion. To put that into perspective, the 86 largest insurance companies in the world, have a combined market cap of $1.87 Trillion while the 40 largest car manufacturers have a cumulative market cap of $2 Trillion. So, how is it that most of us know the likes of Allianz, Cigna, Tesla, and GM, yet Bitcoin, Ethereum and Dogecoin are still relatively inconspicuous and, in some circles, even taboo? This article will try to take up the unenviable task of attempting to "de-crypt" this new epoch of technology and its almost inevitable confluence with insurance.

I beg for your indulgence here since no sober discourse can be had on Cryptos without first understanding their antecedence, Blockchain and Bitcoin, I suggest we start with Blockchain. The mercurial creator(s) of Bitcoin, under the pseudonym of Satoshi Nakamoto, in their now famous Bitcoin White Paper (2008), partly as a reaction to the 2007 economic crisis, created the Blockchain network to be the vehicle behind Bitcoin. Blockchain is described as "a purely peer to peer network" (P2P), a network with no mediation. This network effectively serves the role of a shared or decentralized database that records transactions as a "chain of digital signatures" with each new addition to the chain referred to as a "block", ipso facto, the block-chain.

Since inception, Blockchain was always envisaged to be a "peer to peer cash system", where "online payments [are] sent directly from one party to another without going through a financial institution" (Nakamoto, 2008). The peer-to-peer concept is not new though, if we flashback to the early 2000s, disruptors such as Napster revolutionized the music industry by pioneering the first P2P music sharing software, which, rather unsurprisingly, was summarily litigated to oblivion by the music industry. This was the epilogue to the controversial Torrent era, where larger media files such as Movies, were shared P2P, despite the constant flurry of

copyright claims. Contentious copyrights aside however, a P2P platform is widely agreed to be the most efficient means of exchange.

Blockchain was therefore designed to upgrade this P2P model with the security and trust necessary to make the system not only autonomous but also decentralized, with the focus of transactions being its own form of tokens, transcending nuisance copyrights. As articulated by Nakamoto (2008), the blockchain aims to "allow any two willing parties to transact directly with each other without the need for a trusted third party" via a "system based on cryptographic proof instead of trust" enabling "transactions that are computationally impractical to reverse, protecting sellers from fraud".

Since the blockchain network intentionally has no central authority, all participants in the network, called "nodes" need to reach "consensus" on which transactions are valid. This is done through various "consensus algorithms"; such as PoW (Proof of Work) and PoS (Proof of Stake), which "offer an efficient, fair, real-time, functional, reliable, and secure mechanism to ensure that all the transactions occurring on the network are genuine and all participants agree on a consensus on the status of the ledger (database)" (Frankenfield & Mansa, 2020).

Notably, the role of "cryptography" in the blockchain wasn't merely to promote anonymity, as it was to "store and transmit data values in a secure format that ensures only those, for whom the data or transaction is intended for, can receive, read and process it, and ensure the authenticity of the transaction and participant, like a real-world signature" (Seth, 2020). As summarized by Drescher (2017) the term "blockchain" can therefore, simultaneously, refer to a "data structure", "an algorithm", "a suite of technologies" and a "purely distributed peer-to-peer system with a common application area".

With the concept of "blockchain" roughly explained, let's move on to the concept of "Bitcoin". Unlike the now popularized embossed "B" coin illustration, Bitcoin does not exist in a physical sense, it can be simply defined as "Digital Cash" where "monetary value [can] be transferred electronically via cash data files" (Berentsen & Schär, 2018). At its core though, Bitcoin is a "cryptocurrency", defined by Greenberg (2011) as "a digital asset designed to work as a medium of exchange using cryptography to secure the transactions and to control the creation of additional units of the currency." Akin to blockchain, "Bitcoin" has a multiplicity of definitions with Bitcoin.org defining it as, "a consensus network that enables a new payment system and a completely digital money." For most users, Bitcoin is simply "nothing more than a mobile app or computer program that provides a personal Bitcoin wallet and allows a user to send and receive Bitcoins with them" (Bitcoin.org).

Bitcoins are generated through "mining", defined by Bitcoin.org as "the process of spending computing power to process transactions, secure the network, and keep everyone in the system synchronized. Bitcoin mining provides a reward (coins) in exchange for useful services required to operate a secure payment network. Coins earned are divisible, and can be divided into 100 million 'Satoshis', the smallest fraction of a Bitcoin" (Berentsen & Schär, 2018). Although, theoretically, anyone can become a "miner", due to fierce competition, a few large miners produce most of the new generally accepted blocks. Since Bitcoin's consensus protocol is that of PoW, which is one of the more energy intensive protocols, a significant

criticism of Bitcoin has been its environmental sustainability, a factor that contributed to its price dip that occurred mid-May this year.

According to Bitcoin.org, Bitcoin derives its value through trust and adoption. "As with all currency, Bitcoin's value comes only and directly from people willing to accept them as payment" (Bitcoin.org). Bitcoin's, and, consequently, all other cryptocurrencies' price, is determined by supply and demand, when demand for Bitcoins increases, the price increases, and when demand falls, the price falls. Bitcoin saw a resurgence in demand in 2020, particularly mid-pandemic, accelerating by roughly 300% from its opening year price of $7,000 to $30,000 at the end of year (Coindesk.com). Many scholars attest Bitcoin's and other crypto's upsurge in demand mid and post-pandemic to the gradual adoption of Bitcoin amongst the more formal financial institutions such as investment banks and pension funds, as well as its perceived ability to store value with high profile companies such as Tesla publicly investing in Bitcoin. However, it is the retail side of Bitcoin and cryptocurrencies that has been the most inspiring.

As alluded to in my introduction, Bitcoin is just one of many cryptocurrencies; albeit the first, Bitcoin's advancement led to the development of a variety of alternative cryptocurrencies, collectively referred to as alt-coins aimed at either improving some of Bitcoin's shortcomings or serving other niche applications. Similar to Bitcoin, these altcoins such as Ethereum (ETH), Binance Coin (BNB), and Doge coin have seen an increase in popularity, and consequently an increase in demand and price. Ethereum for instance, hit a high of $4,132 in May'21, from an opening price of $730 in Jan'21, a growth of 466%. Doge peaked at $0.72 in early May from a low of $0.004 in January, signifying a whopping 15,000% increase (Coindesk.com). This has led to Bitcoin's dominance waning from close to 90% of the total cryptocurrency market cap in 2017 to 40% in May 2021 (Coinmarketcap.com). These altcoins' popularity is mostly due to the enhanced ease of which these coins could be mined, bought, and traded through readily accessible cryptocurrency exchanges and crypto wallets.

Cryptocurrency exchanges are defined as "platforms that facilitate the trading of cryptocurrencies for other assets, including digital and fiat currencies, [they] act as an intermediary between a buyer and a seller and make money through commissions and transaction fees" . These crypto exchanges currently number around 300 with the more popular ones such as Binance, Huobi and Coinbase having seen exponential growth of users over the last year. Binance reported that global crypto users grew by 1,641% from 5.8 Million in 2017 to 101 Million in 2020. The mass adoption of these exchanges has led to the mainstream popularisation of phrases such as "HODL", which emanated from a typo of "HOLD" in reference to holding one's coins amid pressure to sell, with the new iteration standing for "Hold on for Dear Life", "To the moon", refers to a coin price figuratively skyrocketing, and "Buy the Dip" means purchasing a coin after its price has dropped.

Impressively, Africa has not been left behind in the crypto revolution. Jack Dorsey, the co-founder, and CEO of Twitter tweeted in November 2019 that "Africa will define the future (especially the Bitcoin one!)". Almost prophetically, in 2020, 3 out of the top 10 countries with the highest Bitcoin trading volumes globally are African: Nigeria ranked 2nd (only behind USA), Kenya, 8th, and South Africa, 10th, with the three countries collectively trading

approximately $640 Million worth of Bitcoin in 2020 from around 1.6 Million active users According to Arcane Research, economic problems, from high inflation rates and volatile currencies to financial issues such as capital controls and a lack of banking infrastructure, have created a fertile ground for an alternative to germinate and cryptocurrencies are positioned to become the ideal antidote to these challenges. Tellingly though, as Arcane Research report, cryptocurrency adoption in Africa is somewhat of a dichotomy, although researchers have identified high ownership rates in certain countries, there is a significant lack of the typical infrastructure we see elsewhere such as nodes, mining operations, supporting merchants, ATMs, and exchanges.

Africa's embrace of cryptocurrency seems to emanate not from a position of technological maturity but rather from a place of economic anxiety, according to an article by the UN "when Zimbabwe's inflation skyrocketed in 2015, forcing authorities to print $100 trillion notes (each worth just $40), some Zimbabweans turned to Bitcoin" additionally, as reported by DW, "high unemployment in many African countries means young people are skirting traditional sectors and exploring new ways to make money." Summarised by Guillame (2021) "African citizens' appetite for Bitcoin has grown in recent years as financial uncertainty, rising poverty, government corruption and depreciating currencies have pushed individuals across the continent to look for more stable investments." Most African crypto traders, therefore, are turning to Cryptos as insurance, so, where is insurance in all this?

Well, assuming we all can acknowledge crypto wallets as an "insurable interest", worryingly, according to Aon, "more than $1.3bn has been stolen from cryptocurrency exchanges since the first Bitcoin block was mined in 2009 ", even though "a few insurers dedicated to insuring cryptocurrency risk have emerged in recent years, including Coincover, Nexus Mutual, Bridge Mutual and Etherisc, help is still wanted in the market to meet the increasing demand for good crypto cover"(Turner, 2021). This led to the likes of Lloyd's launching a new insurance policy "to protect cryptocurrency held in online wallets against theft or other malicious hacks"; the policy, touted as "the first of its kind liability policy", has a "dynamic limit that increases or decreases in line with the price changes of crypto assets, meaning that the insured will always be indemnified for the underlying value of their managed asset even if this fluctuates over the policy period. " However, with "approximate estimates for cryptocurrency insurance capacity being between $1 billion and $6 billion" Insurance has a long way to go to reach the estimated $1.8 Trillion crypto market cap.

Understandably, it is not that straight-forward for insurers, given the regulatory uncertainty cryptos receive in most jurisdictions. In response to this, Zuckerman (2021), posits that "Insurers frequently function as de facto regulator because the insurer, the State, and consumers often have aligned incentives". In an instance of a loss, it is in all parties' (the insured, the insurer, and the government) interests to prevent or mitigate the damage arising from the loss. Encouraging preventative or mitigative measures [in loosely regulated sectors] is frequently a profit-maximizing strategy for the insurer that also benefits the government and consumer (Zuckerman, 2021). Using Cyber Security as an example, Zuckerman (2021) cites how the insistence of cyber insurers "that companies seeking insurance comply with cyber security standards such as ISO 27001, indirectly encourages adoption of global cyber security

standards and improves cyber security generally". Granted, this will not entirely suffice for some insurers to promote and adopt digital asset insurance, insurers', and insurance intermediaries' passiveness and hesitancy towards cryptos, especially in Africa, will have to be overcome sooner rather than later. With China adopting its digital Yuan, the US Federal Reserve ruminating over a move to a Central Bank Digital Currency and Facebook's digital coin aka Diem, formerly Libra, planning to launch later this year, the future, at least for digital currencies, is firmly in the present.

To conclude, blockchain and cryptocurrencies, as with most technologies, are only as benevolent or malevolent as its users. Of course, it will have its teething problems here and there but unbeknownst to most of us, our fellow Africans, despite all our challenges, have put us right at the front seat of the crypto ride. So, as the insurance industry, do we choose to shy away, understandably so, or buckle up? Where to? Maybe nowhere, maybe, To the Moon.

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