The blockchain opportunity

Often referred to as the new Internet by enthusiasts, this technology may cause massive disruption in sectors like finance, says Yogesh Singh, Head, Fintech and Managed Services, Nihilent.

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Blockchain is one of the most widely discussed technologies in the recent times, primarily across banks and financial institutions. Often referred to as the new Internet by enthusiasts, this technology may cause massive disruption in sectors like finance; akin to what the Internet did to the way we access information or buy goods and services, says Yogesh Singh, Head, Fintech and Managed Services, Nihilent.

Before we delve further, it is important to touch upon the concept of distributed ledger technology and Blockchain. A distributed ledger is a consensus of replicated, shared and synchronised digital data spread across multiple locations globally, without a central administration or data storage. Over time the term Blockchain has become synonymous distributed ledger technology - similar to how people refer to all copy machines as Xerox - but the fact is that Blockchain is just one way of implementing the same. There can be other ways of implementing distributed ledger technologies to achieve specific goals without having to employ a chain of blocks. Two key Blockchain-based platforms that are in their early stages of development, Ethereum - much ahead in evolution and features smart contract functionality and value token called ether-, and Hyperledger - whose goal is to create an open source solution for enterprise - are leading the way by targeting different use cases.

Blockchain is a data structure that enables creation of a digital ledger of transactions and sharing it among a distributed network of computers. It uses cryptography to allow each participant on the network to manipulate the ledger in a secure way without the

need for a central authority. A block is the 'current' part of a Blockchain, which records some or all of the recent transactions, and once completed, goes into the Blockchain as permanent database. A block of data once recorded on the ledger is extremely difficult to change or remove. When someone wants to add to it, participants in the network (all of which have copies of the existing Blockchain) run algorithms to evaluate and verify the proposed transaction. If a majority of nodes agree that the transaction looks valid (that is, identifying information matches the Blockchain's history) then the new transaction will be approved and a new block added to the chain.

Blockchain is seen as the main technological innovation of Bitcoin, since it stands as proof of all the transactions on the network. There are different Blockchain configurations that use different consensus mechanisms, depending on the type and size of the network and the use case of a particular company. The Bitcoin Blockchain, for example, is public and "permissionless", meaning anyone can participate and contribute to the ledger. Many firms also are exploring private or "permissioned" blockchains whose network is made up of only known participants. Each of the Blockchain implementations operates in different ways.

Blockchain is the underlying technology behind Bitcoin and with 700+ crypto currencies today and counting, it is no longer money but "Internet of Money" connecting finance like IOT connects devices. Alternative currency helps reduce transaction fees, especially for remittance, which not only benefits the individual but the economy as a whole. At first glance, crypto currencies and payments appear to be first and most obvious applications, but from a new type of money to powering digital identity in the Internet-of-Things, the Blockchain technology application stack is the engine powering the new innovations across industries and domains. With 10% of global GDP likely to be stored on Blockchain platforms by 2027 (according to "The World Economic Forum"), businesses are increasingly looking at incorporating this new technology into their current strategy.

Potential applications of Blockchain span across industries and domains such as finance (e.g. stocks, payments), retail banking (e.g. cross border remittance), trade finance (e.g. bill of lading), securities (e.g. trade settlements), syndicated loans, insurance, intangible assets (e.g. patents, health records), supply chain, public records (e.g. real state, vehicle records), private records (e.g. loans, wills) and digital property management (e.g. content rights) among others.

Distributed ledger technology such as Blockchain has already brought a disruption in the financial industry and it is widely believed that the Finance sector will be the first where Blockchain will make its mark. Most of these sectors have trust issues effecting efficiencies and driving up costs and with introduction of Blockchain would automate most of the cumbersome activities being performed by individuals.

Governments worldwide are well aware that Blockchain technology in some form can bring economic benefits and the effect can already be seen in various initiatives such as Republic of Georgia's "Secure Land Titles", Republic of Estonia e-voting, Russia warming up for Identification use case and similar initiatives which will push for need for standardization to improve security and commercial appeal. Top key potential standards under consideration are around Basics, Process and Methodology, Trust and Operability, Business and Application, and Information Security.

Africa has an opportunity to lead the world in utilizing innovative and disruptive Blockchain technologies. Distributed ledger technology is distributed and hence a need to work in groups to explore, innovate, share knowledge and experiences. South Africa has been leading the way wherein the major banks along with reserve bank, payments association and central depository have come together with an aim to co-create solutions for South African financial services industry.

2016 was primarily focused on POCs to explore and gain confidence on the technology but this year should see some proven ideas finding their way into production. However, there may

be a temporary lull before that happens. Though there continue to be discussions around privacy, security, interoperability and scalability concerns, given the rapid emergence and potential impact, these are exciting times and Blockchain deserves significant attention and consideration.