WHAT ARE THE ADVANTAGES THAT BLOCKCHAIN OFFERS?

Relevant for: Science & Technology | Topic: Computer Technology incl. 3-D Printing

The story so far: For a little over a decade, the term blockchain has been flitting in and out of news cycles, especially in connection with bitcoin, the digital cryptocurrency. The Reserve Bank of India has banned speculation and investment in cryptocurrencies. Of late, however, blockchain is seeing a revival, and companies are looking at how to use the tremendous potential of the technology that underpins the cryptocurrency.

It is a foundational technology or a platform that allows designing a secure way to record transactions and circulate it among signatories, or any kind of target group with an Internet connection. At its core it is an extremely democratic ledger that cannot be arbitarily manipulated and easily shareable.

Blockchain's appeal is that it achieves this without a central authority. Blockchain burst into public consciousness because of its association with Satoshi Nakamoto, a mysterious individual or cabal that laid out a white paper on how blockchain could be applied to bitcoin, a virtual currency wrought from the principles of blockchain. Having money free of the fiat of Central governments raised utopian possibilities especially in a world where democracies complain of being subverted and labour and capital continue to be entangled in the elusive quest for equilibrium. Thereafter, it spawned its own hype-cycle, imitation currencies, association with the sordid and Dark Net. While cryptocurrencies have a bad reputation, Silicon Valley tech giants and investment banks are trying to salvage the underlying promise of blockchain and use it for other collaborations.

Also read

Bitcoin: the birth of an asset

Every block in a blockchain is a record of transactions and the more of the latter, the longer the chain. Just as worthless paper transforms into valuable currency with the signature of the RBI governor, blocks are great because they provide an unalterable document of the history of every transaction. In the context of currency, it stores the place, time, value (rupee, for example) and location of a purchase. There is minimal identifying information and every block is linked to a unique 'digital signature' of the transacting participants. Every block is distinguished from another through a unique code which is a string of numbers. When you use your debit or credit card to make a transaction, VISA or Mastercard employ their technology to verify your bank account, connect with banks and process a transaction.

In blockchain applications, this verifying role is outsourced to several computers on a network — each has the exact same copy of the block. These computers verify the genuineness of transaction by solving mathematical problems that can only be done in brute-force, energy intensive ways that require a lot of computational power, and therefore electricity. This is a key reason why blockchain enthusiasts vouch for the security of blockchain-backed transactions. Depending on where the blockchain technology is deployed, these participating computers or users have to be incentivised for all that energy expenditure.

In the case of bitcoin, the computers are rewarded with bitcoin. This is stored in digital wallets and may be used like money provided there are sellers of real world goods who would accept

bitcoins. Nowdays, they are frequently traded as another speculative, volatile asset.

As of today nothing, but blockchain backers say it solves the problem of 'trust'. Because the major cost of any transaction or exchange of services or goods is the act of verification — VISA charges fees to ensure that your card swipe is connected to your account or a property charges you for the effort of ensuring that you are entering into a genuine transaction — blockchain asks you to trust the energy-intensive nature of mathematical problems and have them masquerade them as 'locks' to secure your money, confidential documents or any kind of information.

The benefits of blockchain

While blockchain has the aura of transparency — anybody supposedly can check the history of a 'block' — it is at its core impervious to common sense. However, just as the inability to grasp in a visceral sense how letters typed on a mobile phone transform and make their way into another phone instantaneously a continent away does not stop people from using WhatsApp, blockchain technology has created enough hype and drama to have drawn the world's wealthiest to invest in it and inveigle it into ordinary lives.

Facebook this year announced Libra, a kind of blockchain-backed digital currency. According to report in a 2017 issue of the *Harvard Business Review* (*HBR*), "Bank of America, JPMorgan, the New York Stock Exchange, Fidelity Investments, and Standard Chartered are testing blockchain technology as a replacement for paper-based and manual transaction processing in such areas as trade finance, foreign exchange, cross-border settlement, and securities settlement"

Ethereum is another blockchain-based startup that looks to decentralise online information. Its ambition is beyond overturning online banking and it claims that if it were to work as envisioned, it will give users control over their data unlike the present where a lot of our privacy is ceded to Google and Amazon's servers. Some plan to apply blockchain to trace the origin of food and where it is grown and yet others to journalism and 'fact-checking' applications. Unlike blockchain's distributed computing philosophy, all these applications ultimately store information on a coalition of repositories.

The *HBR* article cited earlier, by Marco Iansiti and Karim R. Lakhani, likens blockchain to the early days of the Internet, which was made possible by so-called distributed computing. A new mode, called the TCP/IP (transmission control protocol/Internet protocol), which specified how computers could be networked to transmit and receive packets of digital information, turned out to be a platform that laid the base for private networks, email, the web, websites, search engines. TCP/IP minimises central management and makes networks resilient and far-reaching. The protocol was not the crying need of humanity but once in place, upended the telecommunications industry and in the last three decades virtually every aspect of life.

Technology has always proved to be disruptive, creating new opportunities and jobs and destroying old ones. If blockchain's appeal lies in its appeal to destroy intermediaries — banks, courts, lawyers — it is unlikely to be smooth sailing. Moreover, there is already serious theorising by economists that shows how blockchain has its own vulnerabilities and susceptibility to creating new hegemons, power networks, cartels and challenges to global energy consumption.

Support quality journalism - [Subscribe to The Hindu Digital](#)

Please enter a valid email address.

This entertainment portal, which debuted at Cannes, offers international cinema to Indian

audiences with the promise of privacy and piracy-proof security... plus, Anurag Kashyap is on board with the content curation!

Support Quality Journalism

Subscribe to our new online experience with zero ads.

Already a user? Sign In

To know more about Ad free news reading experience and subscription Click Here

or Please whitelist our website on your Adblocker