



CFA SINGAPORE INSIGHTS

By **Pranay Gupta**

Is blockchain the new Internet for finance?

The scale of change that blockchain will bring is underestimated by us all – individuals and businesses alike

REMEMBER a time when there was no such thing as the Internet? Don't blame yourself if you can't. Such has been the speed and pervasiveness with which the worldwide web has become available to every person, that we seldom realise that it is just over 30 years old. And in that short time, it has revolutionised business, transformed entertainment and changed lives. Blockchain may well be a technology that has the potential to unleash a force of a similar magnitude.

What is blockchain?

Broadly speaking, blockchain is a lattice network of computers, linked not to a central server, but rather to each other. Each computer in this network defines and agrees a shared state of data, each has a full copy of all the data, and follows certain rules of how this data can be accessed or changed. The blockchain maintains complete anonymity and privacy of all users as everything is encrypted using cryptography. In this way, there is no single owner of the network who decides the absolute truth, every transaction of creation or modification is timestamped and tracked, and it ensures no misuse of the data. In fact, there has been no known case of any blockchain ever getting hacked!

Jan Reinmueller, founder and head of KPMG Digital Village, who has written a chapter on blockchain in my new book, *Fintech: The New DNA of Financial Services*, believes that blockchain is where the Internet was at its conception:

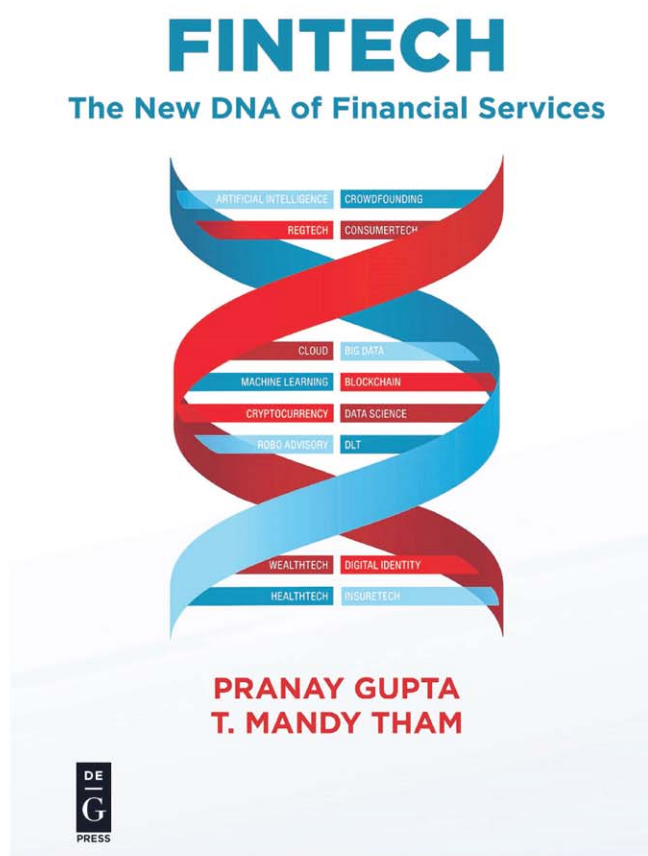
It has a small group of technically skilled supporters who are conceptualising, improving and sustaining the technology, much like the Internet was at its conception:

- It is largely open and maintained by volunteers and non-profit organisations.
- It will cut down the multitude of transactions, by allowing people and organisations to share data, information and knowledge more easily.

Of course, there is more depth and complexity to blockchain than this simple explanation, but this is sufficient to illustrate the enormous avenues for its application.

Application of blockchain in payments and settlement

Imagine a very basic transaction each one of us does in our lives every day, where we purchase an item from a retailer and pay for it using a credit card. While this seems simple, for this transaction to happen seamlessly, we have created a myriad of processes and structures that protects each party. How does the retailer know that the buyer is not bankrupt? How does he know that he will not spend his money somewhere else before the retailer is credited? How does the buyer know that the retailer has the goods? To facilitate these and many other ques-



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tions we have credit card issuers, card networks, merchant acquirers, international payment messaging networks, domestic payment utilities and many more such intermediaries.

What would happen if this structure was permeated with blockchain underneath?

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substantially, and in fact makes it more secure. We won't need all the intermediary businesses in the future when everything is on a blockchain.

While it can be difficult to conceptualise, similar to payments, blockchain can be effectively implemented in many other areas.

Today when you approach a bank to take a mortgage, there is an enormous amount of information required. What is your identity? What is your salary record and credit history? Who owns the property? And a multitude of documents and intermediaries required – land titles, payslips, bank statements, inspection reports, agents, brokers, insurance details etc. Not to mention the complexity of actually performing the transaction to transfer titles as part of the sale. Imagine if all this information was resident on a blockchain, and how simple and seamless the process may become.

This same process can be applied to insurance, investing, stock trading and settlement, global supply chains for manufacturing and countless other industries and applications. Just as PCs became the pervasive tool in every business and industry, blockchain has the potential to do the same.

Ken Timsit of Consensus, a company building the infrastructure and applications for blockchain, gives the example of Project Ubin, a project spearheaded by the MAS where Consensus is involved. As part of this project, 11 banks in Singapore will implement a real time gross settlement system that will allow them to settle large value transactions using blockchain technology. It is only a matter of time before this kind of implementation is done more broadly across the economy.

Peter Drucker in his book *The Age of Discontinuity* (1969) argued that we will transition from a service economy to a knowledge economy. With the advent of blockchain, knowledge will be available to all. Millennials claim that the next evolution is to the passion economy, where they do work on what they like and barter in "likes". In business perhaps, we move to a barbell economy, where either you have skill or you have scale. There is no room for middlemen.

In either scenario, one thing is for sure – the scale of change that blockchain will bring is underestimated by us all – individuals and businesses alike, much like when the Internet came along.

• This article is an extract from a new book co-authored by Pranay Gupta, CFA. Titled "Fintech: the new DNA of Financial Services", the book will be launched officially on Nov 12 at the Singapore Fintech Festival.

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