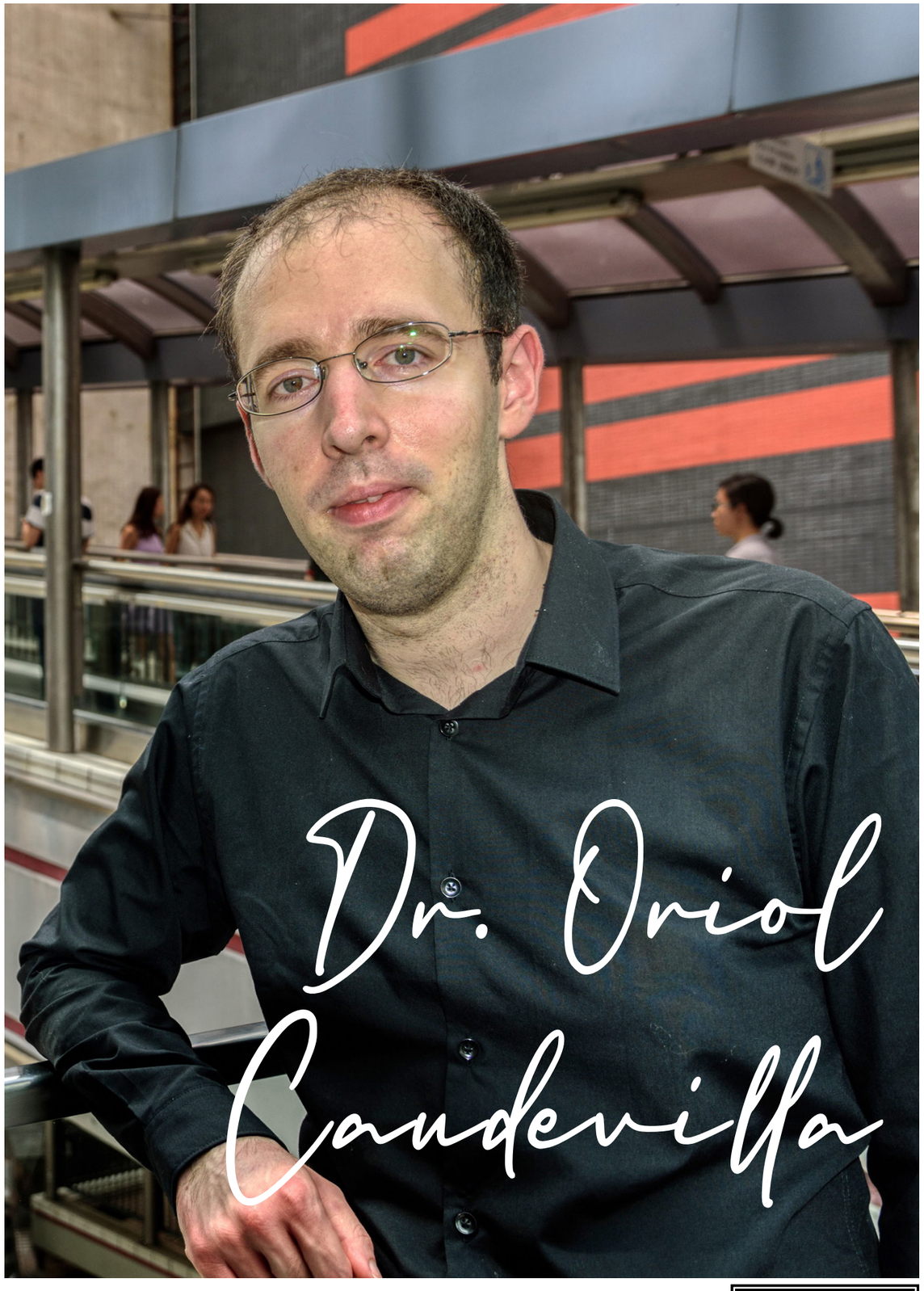
Blockchain
a technology that is changing the world for the better



Blockchain is undoubtedly changing the world. As explained by Don and Alex Tapscott in their book "Blockchain Revolution": "The first generation of the digital revolution brought us the Internet of information. The second genera¬tion—powered by blockchain technology—is bringing us the Internet of value: a new, distributed platform that can help us reshape the world of business and transform the old order of human affairs for the better".

In this sense, blockchain is the technology likely to have the greatest impact on the future of the world economy. Just as an example, China Central Television (CCTV) defined blockchain´s economic value in 2018 as "10 times more valuable than the internet".

Considered for long a new technology, blockchain is developing fast, and is quickly becoming a key player in many industries, like the financial one.

If there was no doubt of the importance of blockchain technology a few years ago, the ongoing COVID-19 pandemic, which has certainly confronted the whole world with an unprecedented challenge, has turbocharged a financial technology (Fintech) revolution worldwide in general, and also a Blockchain

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revolution in particular. COVID-19 is changing consumer behavior, quite likely forever, and all the industries need to adapt, including the banking and financial services industry. Digital transformation has quickly become the top priority for those countries not wanting to be left behind.

Unfalsifiable and impossible to change once a record has been added, blockchain is a distributed database stored on multiple computers as a massive number of

identical copies. More specifically, blockchain is part of the Distributed Ledger Technologies (DLT), being a digital register, whose entries are grouped in blocks, concatenated in chronological order, and whose integrity is guaranteed using encryption. Although its size is destined to grow over time, it is immutable because its content is no longer modifiable unless invalidating the entire data structure. To ensure consistency between the various copies, the addition of a new block is globally regulated by a shared protocol. Once the addition of the new block is validated, each node updates its local copy.

Even though blockchain is best known for underpinning the operation of crypto currencies such as Bitcoin, this technology can be used in countless other areas, such as smart contracts, financial services, supply chain management, insurance, IoT, video games...

In this article, I am going to focus on a few of its many applications: crypto currencies, Central Bank Digital Currencies (CBDCs), Trade Finance and Healthcare.

1. Cryptocurrencies

There is no doubt that crypto currencies are the most famous application of blockchain technology. Many people tend to confuse cryptos with blockchain, using both concepts as synonyms, when the reality is that cryptos are just one of the many areas where blockchain technology is applied.

2020 has been one of the best years ever for crypto currencies. We have seen not only a surge in the price of most crypto currencies, among them Bitcoin, but we have also seen institutional investors become more interested in investing in cryptos. We have also witnessed companies like PayPal launching a new service enabling users to buy, hold and sell cryptos, as well as traditional banks like DBS launching a digital currency exchange that will allow investors to trade in cryptocurrencies and firms to raise funds through asset tokenization.

In this sense, Bitcoin surpassed the 30,000 USD mark for the first time on January 2nd and had advanced more than 300% in 2020, as Reuters reported. According to PwC's global crypto leader Henri Arslanian, the rally was partly driven by the entry of more institutional investors into the market. In this respect, Bitcoin has been around for a little over a decade, but it only began to rise in popularity among mainstream institutional investors last year.

Raj Bagadi, Founder and CEO of ScallopX, considers that "there is a high chance the Bitcoin market cap could hit $1Trillion by end of 2021 or early 2022 which could potentially drive the value of Bitcoin to $54000. 2021 is expected to usher in a new chapter for Cryptocurrencies. The Cryptocurrency market is expected to attract a lot of interest from investors and institutions. This will directly lead to a rise in the use of blockchain in everyday transactions thus removing the barriers that exist between traditional fiat and Cryptocurrencies".

The main problem regarding crypto currencies is regulatory. Regulators across the globe struggle to keep up with the maddening pace of balancing state of the art technology with the use of traditional regulatory schemes. While some countries like Singapore are very permissive with cryptos, others have banned it.

2. Central Bank Digital Currencies (CBDCs).

A Central Bank Digital Currency (CBDC) is a new form of Central Bank money accessible to the general public, accepted as a means of payment, legal tender, safe store of value by all citizens, businesses and government agencies.

Theoretically, a CBDC should enable cheap, secure and real-time transfer of value, be accessible without a bank account and be built on an open infrastructure to foster competition and innovation.

In other words, a CBDC is a digital form of central bank money that could be used by households and businesses to make payments, hence we are starting to speak about the digital yuan, the future digital euro, and so on.

Unlike decentralized cryptocurrency projects like Bitcoin, a CBDC would be centralized and regulated by a country's monetary authority, being several the possible motivations behind CBDCs: to replace physical bank notes, monetary policy purposes -to reduce the lower bound on interest rates-, as a tool to improve financial stability, to achieve financial inclusion, as a tool to prevent financial crime, for geopolitics purposes -especially when used for cross-border transactions-... CBDCs are not actually cryptocurrencies, since cryptos are established by private entities and supported by numerous distributed nodes that are incentivized through block rewards to maintain the network. CBDCs are normally supported by one central network, driven to serve only the public policy of the sovereign State that issues them.

Even though, according to a report published by the Bank of International Settlements (BIS) in early 2020, 80% of Central Banks in the world are currently working on CBDCs (some are just at an initial research stage, though), but Asia seems to be the place where CBDCs arouse more interest. In this sense, the major economy leading the CBDC race in Asia (and in the whole world) is China.

It must be noted that CBDCs in general do not need blockchain necessarily, but it might be compatible and useful to use this technology.

Blockchain could be useful for wholesale CBDC. In contrast to retail CBDC, wholesale CBDC is limited to commercial banks, clearing institutions or other entities that have traditionally had access to central bank reserve.

When it comes to China´s digital yuan, it will be operating through a two-tier structure, in which the People's Bank of China (PBOC) issues the digital currency to commercial banks and institutions without the employment of blockchain technology, but the financial institutions could give out the digital yuan to the public through blockchain.

3. Trade finance.

Trade finance refers to financial transactions -domestic and international- where financial institutions provide credit to guarantee an exchange of goods. Applying blockchain technology to trade finance will help to reduce many inefficiencies, since traditional trade finance processes (e.g., Letter of Credit) are still a resource-intensive operation due to the physical exchange of documents, for this industry has not seen many changes these last centuries despite the world´s quick evolution.

Regarding the benefits of using blockchain in trade finance, we can cite the fact that it will speed up transaction settlement times, it will increase transparency between all parties, it will reduce costs and it will unlock capital (capital that would be temporarily not available, waiting

to be transferred between parties involved in the transaction), while providing payment certainty to sellers, as well as mitigating risks and increasing financing revenues for banks

In this sense, the International Chamber of Commerce (ICC) released in July 2020 a report that shares findings from its 11th annual Global Survey on Trade Finance. It is based on exclusive information from nearly 350 respondents in more than 80 countries, including contributions from an international array of experts from the Asian Development Bank (ADB), AUSTRAC, Boston Consulting Group (BCG), Coriolis Technologies, HSBC, Kountable, SWIFT and TXF.

According to the report, the survey's results show that only 22% of respondents indicated that their banks were integrating DLT- based solutions in their actual trade finance operations, implying that DLT might still be only applied to pilot transactions and proofs of concept (PoCs).

4. Healthcare.

Prioritizing and managing our health has become increasingly important. Furthermore, the COVID-19 pandemic has changed and is changing the world in many ways. There is no doubt though that Asia has been much more efficient in dealing with the virus than the West, because of many different reasons.

Many Asian countries, on top of adopting traditional virus containment measures, have proven that the use of artificial intelligence and data science are effective (for example, in China and the Republic of Korea), demonstrating once again that Asia is leading in the Artificial Intelligence race. Measures like geolocation or geographical location of a person, for example, were widely disregarded in the West until a few weeks ago.

The pandemic is making people realize how important healthcare is, since this one will be eventually over, but other pandemics may arise in the coming years, hence the need to make healthcare systems all over the world as efficient and strong as possible.

According to a White Paper by Deloitte US, blockchain technology has the potential to transform healthcare, placing the patient at the center of the healthcare ecosystem and increasing the security, privacy, and interoperability of health data. This technology could provide a new model for health information exchanges (HIE) by making electronic medical records more efficient, disintermediated, and secure.

To sum up, blockchain can securely ease the transfer of patient records among health systems both nationally and across borders, and boost the coordination of member health management, lower transaction costs and risks, and even support medical tourism

Conclusions.

As I mentioned before, blockchain is undoubtedly changing the world for the better, having become the technology likely to have the greatest impact on the future of the world economy.

Its applications go much beyond crypto currencies. Blockchain can be helpful in areas as diverse and relevant as trade finance, healthcare, insurance...

There is no doubt that crypto currencies are the most famous application of blockchain technology. Many people tend to confuse cryptos with blockchain, using both concepts as synonyms, when the reality is that cryptos are just one of the many areas where blockchain technology is applied.

Blockchain can also be applied to Central Bank Digital Currencies (CBDCs), which CBDCs in general do not need blockchain necessarily, but it might be compatible and useful for them to use this technology.

Regarding trade finance, applying blockchain technology to trade finance will help to reduce many inefficiencies, since traditional trade finance processes (e.g., Letter of Credit) are still a resource-intensive operation due to the physical exchange of documents, for this industry has not seen many changes these last centuries despite the world´s quick evolution.

As to healthcare, blockchain technology has the potential to transform healthcare, placing the patient at the center of the healthcare ecosystem and increasing the security, privacy, and interoperability of health data.

To sum up, blockchain is the present and the future, hence most companies and Governments should start or keep embracing this technology.

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