Blockchain coming to the fore

UAE banks are hopping on the blockchain bandwagon as it begins to transform the way the banking industry operates. Paritosh Gambhir expands on its many advantages as well as its potential risks.

Digital ledgers and peer-to-peer networks are fast becoming the "new normal" among future-facing companies, reshaping how the world transacts. Banks can consider which processes may be ripe for blockchain transformation—for instance, Know Your Customer (KYC), derivatives or securities trading, payments, and customer experience.

Blockchain is a shared digital record of transactions or information of value, between two or more parties. Traditionally, online validation requires multiple systems that can be coordinated by multiple parties. Blockchain potentially enables a more integrated solution. It is a decentralized, distributed ledger. This potentially means that transactions are shared, replicated and authenticated in real time on computers located at every node, thus promising verifiability independent of a single source. Transactions are stored in batches inside "blocks" that become part of a contiguous "chain," with each block time-stamped and continuously verified by the blocks that precede and follow it. This makes the ledger permanent and virtually tamper proof.

Many organizations across the UAE have embraced blockchain. For instance, Emirates NBD's 'Cheque Chain' has integrated blockchain into issued cheques to strengthen their authenticity and minimize potential fraud. Cheque Chain utilizes a unique quick response code which is printed on every leaf of newly issued cheque books. The code registers each cheque on the bank's platform. After the cheque is received and cleared, bank staff can validate the cheque's authenticity and access its source at all times, thereby helping to reduce the risk of forgery.[5]

Ahead of the curve

Meanwhile, the Dubai Land Department, in partnership with UAE-based Mashreq Bank, has released a blockchain-based mortgage platform, which can serve as a repository for mortgage records. It is also designed to enable confirmation that mortgages comply with registration policies. Dubai is also aiming to be the first city to offer blockchain-based payment solutions to its residents.

Emcredit, a state-backed subsidiary of the Department of Economic Development, is working on releasing 'emCash', a digital currency.[7] After all, the intention of the pseudonymous creator of Bitcoin was to work "on a new electronic cash system that's fully peer-to-peer, with no trusted third party", and to create a network that prevents double spending.[8]

The World Economic Forum (WEF) recently published a white paper analyzing learnings from more than 60 governmental and non-governmental entities across the UAE that are actively exploring or implementing blockchain. It estimated that "by adopting blockchain technology, the UAE government expects to save AED 11 billion (USD 3 billion) in transactions and documents processed routinely, 398 million printed documents annually and 77 million work hours annually."[9]

A cornucopia of benefits for banks

Research indicates that investment banks worldwide could save up to USD 10 billion by using blockchain to enhance the efficiency of clearing and settlement. Similarly, trade finance could be revolutionized by the technology. To date, it still tends to rely on paper-based methods like letters of credit and bills of lading, which require physical stamping. Digitizing this is a distant prospect but has the potential to be game changing.

Blockchain utilizes self-executing protocols that automatically link all support parties to the transaction, thereby saving time and process costs. Banks may reap the advantages of a consortium, including operational efficiencies, reduction of intermediary costs, and a culture of transparency, without the traditional potential risk of inaccurate information transfer. Each counterparty may obtain data directly from the source rather than via another involved party, minimizing the probability of error.

Eight banks in the UAE are collaborating with Etisalat Digital to develop a new blockchain-based trade finance solution, 'UAE Trade Connect'.[10] Banks that have signed up include First Abu Dhabi Bank (FAB), RAKBANK, Emirates NBD, Commercial Bank of Dubai, National Bank of Fujairah, Mashreq Bank, Abu Dhabi Islamic Bank (ADIB), and Commercial Bank International. The platform will aim to help banks address the risks of double financing and fraud, validating trade transactions and checking whether they have already been financed through another bank.

There are also applications in trade finance. For example, it is possible for consumers on a blockchain to include their bank as a node and give consent to provide account details to suppliers of their choosing, potentially providing real time settlement and freeing up collateral. Doing so can help side-step lengthy transaction times and credit processes.

More benefits

Faithful, accurate verification of customers and counterparties underpins the credibility of every banking system. A shared digital utility to record customers' identities and keep them updated could be invaluable to the industry. Blockchain may be the answer due to its cryptographic protection and ability to share a constantly updated record with multiple stakeholders.[11]

Dubai International Financial Centre (DIFC), Mashreq, and Norbloc, the leading Know Your Customer (KYC) and client onboarding fintech regionally headquartered in DIFC, are jointly launching the region's first production-ready blockchain KYC data-sharing consortium in the first quarter of 2020, in line with the UAE Blockchain Strategy 2021. It is expected to facilitate faster, more secure onboarding and exchange of supporting documentation via advanced distributed technologies.[12]

Some challenges

Banks should first identify the problem they are trying to solve, rather than incorporating technology without a purpose. There are concerns around the application of enterprise blockchains, including challenges of governance around a consortium, and decision-making capabilities.

1. Overall governance, risk management and compliance support are essential to any blockchain implementation. Given that there are different users — sometimes even competitors — involved in the blockchain, companies need to be very clear on specific roles and responsibilities related to the blockchain
2. Companies cannot underestimate security requirements or make assumptions regarding blockchain defense mechanisms. It is advisable to identify and verify checks on security and network monitoring processes to reduce risks associated with smart contracts or other attacks
3. With blockchain's immutability, data on a blockchain potentially cannot be deleted. In a use case where customer information is included in a blockchain transaction, blockchain participants may find themselves in breach of privacy regulations (e.g. General Data Protection Regulation (GDPR) Article 17) if they cannot comply with a request of a customer enacting their 'right to be forgotten'
4. Banks need to understand the risks that come with blockchain and determine what internal controls are required in order to ensure that every link along the chain is performing as expected. Following the Committee of Sponsoring Organizations of the Treadway Commission (COSO) framework may help in the critical stages, as can working with blockchain consultants who have already travelled the implementation path
5. Organizations should ask themselves how they are building a stable, scalable blockchain. What sort of consensus mechanism (the process of the various blockchain participants validating a transaction) will be built into the blockchain (proof of work, proof of stake, proof of authority)? Considerations include how much data can be processed, protocols around on and off chain management, and whether it is built to be sustainable and meet future needs.

As organizations adopt the technology, the costly compliance, reporting, and internal control requirements that are typically associated with it will likely decrease. This is especially true if the intent is to integrate blockchain into an existing financial or risk system or another legacy process. Knowing and understanding the technology and the risks, and establishing organization-wide controls are considered essential first steps to unlocking its vast potential.

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When is blockchain needed?
Applying blockchain to a situation only makes sense if the following are true...

01
Multiple parties sharing and replicating data?
Inter-organizational; inter-organization; or public

02
Multiple parties updating data?
Multiple participants recording and propagating data concurrently

03
'Semi-trust' between parties?
– Conflicting interests; or
– Parties don't trust each other; or
– Siloed data undesirable

04
Rules governing participants are uniform?
Usually participants have equal permissions. Although, private blockchains can give different rights to different users

05
Rules do not changed often?
Once issued, smart contracts can't be edited. Changes to blockchain platforms is controversial and consensus to change is difficult. Although it is dependent to the platform

06
Objectivity and immutable logging of information
An indelible and unbiased 'truth' of historic events