

A WHITEPAPER ON

Blockchain and the future of Banking- 9 Possibilities you shouldn't miss out

[Executive summary](#) | [Possibilities](#) | [Conclusion](#) | [About Suyati](#)

EXECUTIVE SUMMARY

Blockchain is fast becoming one of the most invested technology trend in the banking and finance industry. The key reason behind the popularity is without a doubt, the transparency and immutability it brings to the table for transaction processing. The financial sector is struggling with rising cyber threats and Blockchain is being perceived as the answer to empower the sector with vital security cover.

Keeping this in mind, we take a look at the top 9 possibilities blockchain could bring to the Banking and Financial industry in 2018.

- o Banking-as-a-Service & Banking-as-a-Platform
- o Blockchain of Things and the Internet of Money
- o Internet of Money
- o Smart Contracts
- o Data Storage and Records Management
- o Digital Identity Management
- o Payments Settlement and Verification
- o SMART Auditing of Assets and Transactions
- o Compliance Reporting to Regulators

For organizations in the BFSI sector, these are opportunities you should definitely keep an eye out for and start investing because your competitors could already be half way ahead of you.

WHITEPAPER

Ever since Bitcoin – the first digital crypto-currency made its mark, people have been divided as to whether it holds the potential to transform the world of money and banking or whether it is merely a blip in complex and connected financial market. While Bitcoin has been stealing the limelight in the intellectual circles, another technology, in fact the underlying technology on which Bitcoin runs, has been making a name for itself among as a potential disruptor. We are talking about Blockchain.

On the face of it, blockchain is quite unassuming. It is, in the simplest of terms, a public distributed ledger for creating, maintaining and validating records and information. Think of it as a large Shared Excel Spreadsheet and you get an idea as to what the blockchain is. The functioning of blockchain is entirely dependent on a community of so-called miners who validate each transaction by donating their computing power to solve mathematical puzzles. Once each entry has been validated it gets added to an already existing block of transactions, thereby becoming a block-chain. The miners get rewarded in Bitcoin for each puzzle they solve and each member gets an updated copy of the ledger. This makes its extremely hard to tamper with as the ledger is decentralized and there is no central authority. As you can see, such a system of documenting records has numerous use cases in manifold industries and companies have already begun creating their own private as well as public blockchains. What we are going to delve into is how the increasing use of blockchain will impact the functioning and existence of the banking and financial services sector.



Possibility #1: BANKING-AS-A-SERVICE & BANKING-AS-A-PLATFORM

With the implementation of the Revised Payments Service Directive (PSD2), banks operating in EU countries have been compelled to open up their customer and transaction data sets through open APIs. With this shift, we are expecting to see numerous fintech startups provide over-the-top-services using a bank's database. These services will be more simplified, personalized and user-friendly. Banks too will have to re-invent themselves and tap into emerging startups to provide attractive services such as micro-loans, flexible re-payment options, etc. But for this to truly achieve its potential, banks will need to have a common source and format for storing data as well as an effective security system regulating who gets access to what data.

Banks can explore creating their own public blockchains which will lead to a phenomenon called Open Banking Platforms. Banks will be competing with banks and other financial

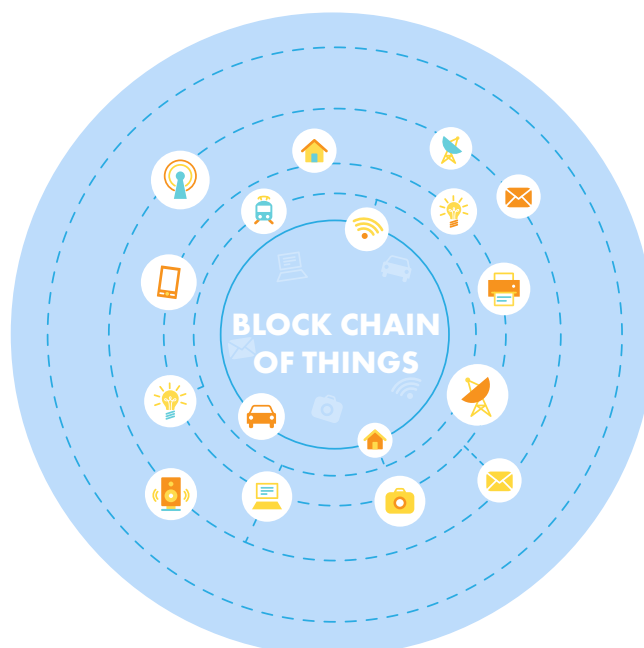


services providers (including nimbler fintech startups) to bid for the customer's business on the basis of insights mined from customer data. Customers can also have options where they can regulate what data others get to see (refer Digital Identity Management), similar to providing permissions for your android applications.

Possibility #2: BLOCKCHAIN OF THINGS AND THE INTERNET OF MONEY

With the Industrial Internet growing day by day, machines are becoming smarter and are able to execute complex processes. Blockchain will form a natural fit with the Industrial Internet and IoT in two ways.

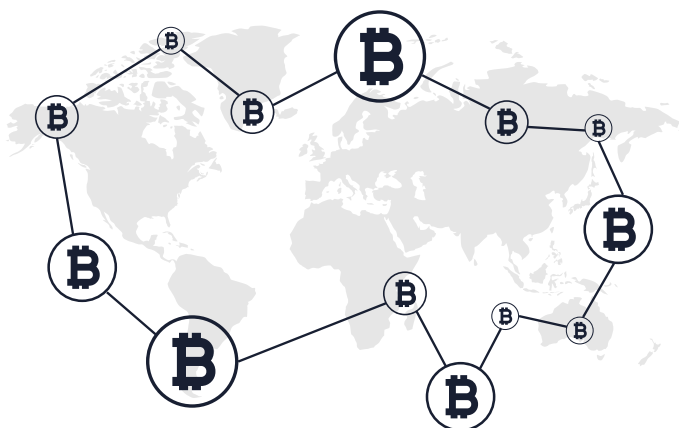
One of the biggest impediments of IoT is its inability to communicate with other machines freely as required to due non-standardized communication channels. Adopting Blockchain as a common platform for storing information generated by machines will allow IoT greater scope and flexibility. Enter the



Possibility #3: INTERNET OF MONEY

The **Internet of Money is nothing but the crypto-currencies** that are doing the rounds in various forms. Of particular note is the crypto-currency called Ether which runs on the Ethereum blockchain platform. Together, they can offer companies to not only connect their IoT devices onto the blockchain platform, but also automate payments (in Ether currency), when certain conditions of criteria are met (refer Smart Contracts). This would be a threat to Banking companies unless they can come up with a blockchain platform of their own with such a similar provision.

For instance, if a company is looking to take lighting-as-a-service, **as in the case of the Washington DC Metro system**, the smart and adaptive lighting devices can be charged based



on their usage. Hypothetically, if these devices are connected to the blockchain platform, the usage data can be sent directly to the banking system and the according payment can be released automatically as per the set conditions.

Possibility #4: SMART CONTRACTS

For blockchain to succeed as a decentralized system for storing records and transactions, it will have to leverage the **power of Smart Contracts**. Smart Contracts are nothing but a set of code that can be configured to execute actions based on pre-set conditions using technologies such as the IoT and the blockchain.

Take for example the case of a manufacturer who wants to import a commodity such as iron ore. Once the manufacturer pays the initial deposit on the consignment which would go to an escrow account, the contract can execute the shipment through the use of IoT based cartons. The progress of the shipment can be tracked throughout and the full payment can be released once the shipment reaches the port

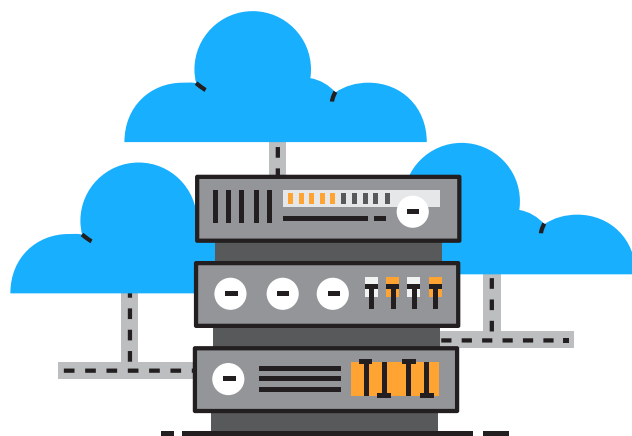


through the Smart Contract. This is not so much as science fiction as a practical guide for the future. **Commonwealth Bank, Wells Fargo and Brighann Cotton have already begun using a similar method for facilitating Cotton Trade across borders.**

Possibility #5: DATA STORAGE AND RECORDS MANAGEMENT

The fundamental nature of blockchain is in itself a data storage and record management platform. Currently, with more things going digital, the amount of data stored online has been burgeoning and companies are looking for cheaper and more efficient ways to store their data. What blockchain does is to make it a lot easier to store data as the system is decentralized and distributed across to every person who should own the data set. With that being the case, any update made to one set of the data would be replicated across each copy in near real-time, eradicating the chance for duplication and redundancies.

Blockchain seeks to bring significant gains for banks as it will simplify their records management process w.r.t. credit facility



extended, repayments and customer data across borders. Banks can also use their platform for providing a digital repository for their customers (see below) and earn a new source of revenue from renting out excess space.

Possibility #6: DIGITAL IDENTITY MANAGEMENT

One of the major challenges every online company faces is cyber-security threats which try to steal user data. Especially vulnerable to such threats are banking and financial service companies who hold sensitive customer data which can cause chaos if hacked and leaked. Blockchain as platform has been known to be immune to Distributed Denial of Service (DDoS) attacks as the servers are not centralized. Such an added security will help banks better safeguard their customer data

VALID is a company that is currently specializing in providing Identity Management Services to customers. Banks can also extend



Identity Management services to their client to store their personal data at one location (Self-sovereign IDs), and give the customers the power to manage their identity. We envision a future where customers can sell their data to those who require it.

Possibility #7:

PAYMENTS SETTLEMENT AND VERIFICATION

One of the key challenges holding industry back is the delay in settling payments – both local and cross-border payments. Cross-border payments hold a special challenge as they go through numerous middlemen and intermediaries who bring significant delays and costs. Blockchain being a platform without borders and being a decentralized system brings both the advantages of near real-time settlement at exceedingly low costs. The added benefit is the fact that each transaction is independently verified by anonymous players anywhere in the globe only adds to its security and veracity.

The same system can be applied in financial markets in the matter of trade settlement. Currently, it can take anywhere from three days to one week to complete trade settlements. The same system when brought on to the blockchain



can make it near real-time. Bringing trade-settlements on to the blockchain can also add to strengthening the system by detecting suspicious or fraudulent transactions. Currently, **Nasdaq runs its own settlement platform called Linq** which is based on the blockchain system.

Possibility #8:

SMART AUDITING OF ASSETS AND TRANSACTIONS

With the increase in IoT devices, it has become easier to track the existence, origin and journey of a product. Take the example of coffee or tea, we could trace it back to the original plant from which the leaves were extracted, the location, time and quality. Any such asset can be tracked using smart sensors. Where blockchain steps in, is to provide a verified audit trail – due to the fact that a transaction once recorded cannot be deleted. Companies such as **VeChain** and **Verady** already help companies with adopt the blockchain and provide auditing and assurance services. Since banks serve as financiers for most companies, including maintaining customer accounts and making vendor payments, they



too can provide such auditing and assurance services based on blockchain platforms. Banking companies too can use blockchain to verify their financial and physical assets, including collaterals from borrowers. This will help banks with their compliance as well as reducing chances for errors and frauds.

Possibility #9: COMPLIANCE REPORTING TO REGULATORS

A unique facet about blockchain is in its immutability. Once a transaction has been added, it cannot be deleted. Thereby, it offers an audit trail of a transaction's history and will be an asset for regulators. Having a shared distributed ledger can help both the regulators and financial institutions as it is complete, secure, permanent, and traceable. It also avoids duplication of records and standardizes formats.

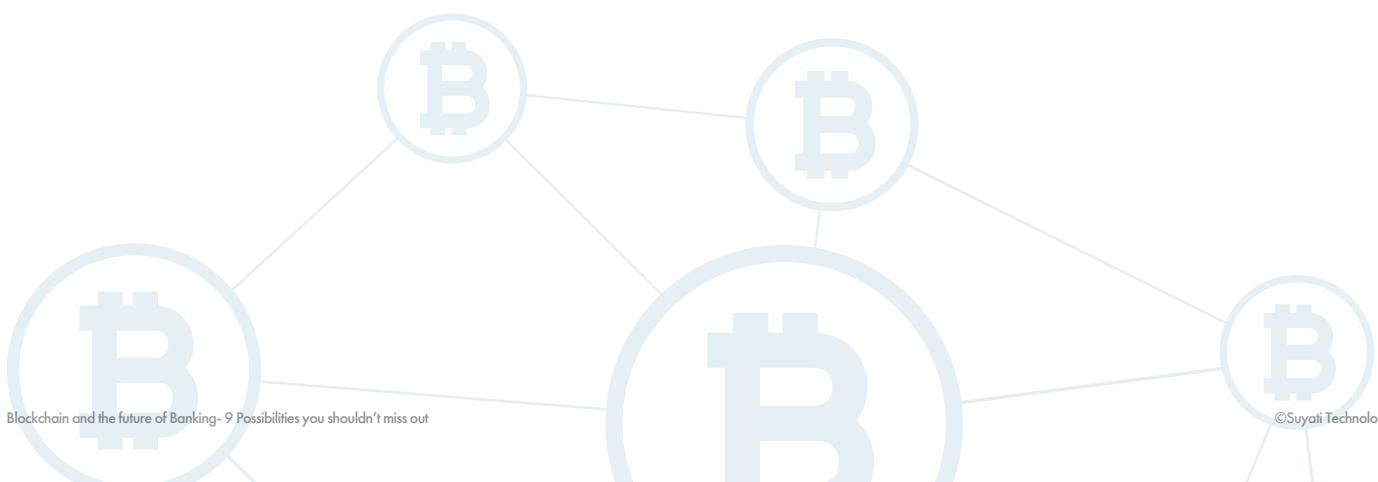
Blockchains have the ability to create secure environments where data can be stored with ease and reliability. This means an activity like KYC compliance captured and stored in the blockchain once, can be used to validate the



customer KYC in multiple places. Moreover, this removes the problems of duplications and redundancies, while increasing speed and efficiency.

CONCLUSION

Overall, blockchain is at its most nascent phase of development, yet holding manifold possibilities and opportunities. However, it is not without its problems. One of the biggest issues that would need to be addressed is a common set of standards as well as how it will all be regulated. Another issue is one that relates to energy – running a blockchain requires significant usage of computing power. There is a debate as to whether energy costs will outrun the benefits of blockchain. Nevertheless, these are exciting times and banks would do well to start investing in the technology. Already, **R3, a consortium of banks and technology companies** seeking to explore the possibilities of blockchain have attracted big names.





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Our three-phase approach to implementing digital transformation for you ensures that you win stakeholder support, secure early wins through competitive advantage, and transform your business for future growth. And our tailor-made platform, Mekanate, helps you discover your business DNA from your passive and active data, and use it to initiate, integrate and accelerate your DT implementation.

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