BANKING BLUEPRINT FOR THE CRYPTO WORLD

(Adoption of crypto assets by the banks)

Project Report submitted in partial fulfillment for the award of the degree of 'Bachelor of Business Administration'

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3 Project Supervisor was referred to for preparing the report.

4. Specifications regarding thesis format have been closely followed.

5. The contents of the thesis have been organized based on the guidelines.

6. The report has been prepared without resorting to plagiarism.

7. All sources used have been cited appropriately.

8. The report has not been submitted elsewhere for a degree.

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ABSTRACT:

Although the world of cryptocurrencies is rapidly developing and gaining popularity, traditional institutions are cautious to employ these digital assets, feeling that the inherent dangers outweigh the potential advantages. However, regulatory bodies like as the Office of the Comptroller of the Currency (OCC) are striving to shift banks' perceptions about digital currencies, thinking that these assets may propel financial institutions into a new era of innovation and efficiency.

The OCC has recently published several letters detailing how traditional financial institutions can use digital currencies to transact (or develop services). These efforts are in line with the OCC's hope that additional regulatory guidance will help banks feel more comfortable with these digital assets.

In early January, National banks and federal savings associations can now perform payment operations using public blockchains and stable currencies, according to the OCC. This enables banks to execute payments significantly more quickly and without the use of a third-party intermediary. This letter basically categorises blockchain networks as SWIFT, ACH, and Fedwire, opening the path for their incorporation into the larger financial environment.

Banks may be afraid of cryptocurrencies because they feel trading them raises risk and necessitates time-consuming and expensive due diligence. Digital currencies, on the other hand, may help financial organizations and their consumers in a variety of ways.

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LIST OF SYMBOLS, ABBREVIATION, AND NOMENCLATURE:

DeFi - decentralized finance

DLT - Distributed Ledger Technology

NFTs - Non-fungible tokens

OCC - The Office of the Comptroller of the Currency

CBDCs - central bank digital currencies

SPDIs - special purpose deposit institutions

AML - anti-money laundering

KYC - knowing the customer

ACAMS - Association of Certified Anti-money Laundering Professionals

FIPs - Federal Information Process Standard

BSA - Bank Secrecy Act

KYT - know your transaction

SRC - structured regulatory compliance

KYD - Know your data

ICOs - initial coin offerings

Introduction

Cryptocurrency is a digital means of exchange that is produced and kept on the blockchain, using encryption techniques used to manage the creation of monetary units and verify payment transfers. The most famous example is Bitcoin.

o It has no intrinsic worth because it can't be exchanged for another commodity like gold.

o It doesn't have a physical form and only exists in cyberspace.

o There is no central bank controlling its supply, and the network is fully decentralized.

The Bitcoin Origin Story

In late 2008, around the hour of the monetary emergency, a notable post showed up on a mostly secret web gathering entitled Bitcoin: A shared electronic money framework. It was composed by a strange individual called Satoshi Nakamoto, a pen name to mask the creator's actual personality.

Satoshi believed that banks and legislators wielded much too much power in their daily operations. Satoshi conceived a different kind of money called Bitcoin that might alter things: a cryptographic money that was not controlled or governed by national banks or state-run administrations, that you could transfer anywhere on the earth for free, and that was controlled by no one or organization.

At first no person paid interest to Satoshi’s wild ideas – however slowly increasingly humans commenced shopping for and the usage of Bitcoin. Many believed it changed into the destiny of money, and the more severe the massive banks behaved the greater famous it became. Bitcoin has developed to a network of over 10,000 "nodes" or people that utilize the Proof of Work technology to validate transactions and mine bitcoin since it became formed and launched in 2009.

This democracy prevailed till the improvement of precise mining computer systems referred to as ASICs which overtook different much fewer effective machines, and groups started to benefit from accumulating miners and mining technology. It remains feasible for a person to participate withinside the Bitcoin process, however it's far highly-priced to installation and the go back on funding fluctuates with the fantastically risky cost of bitcoin itself.

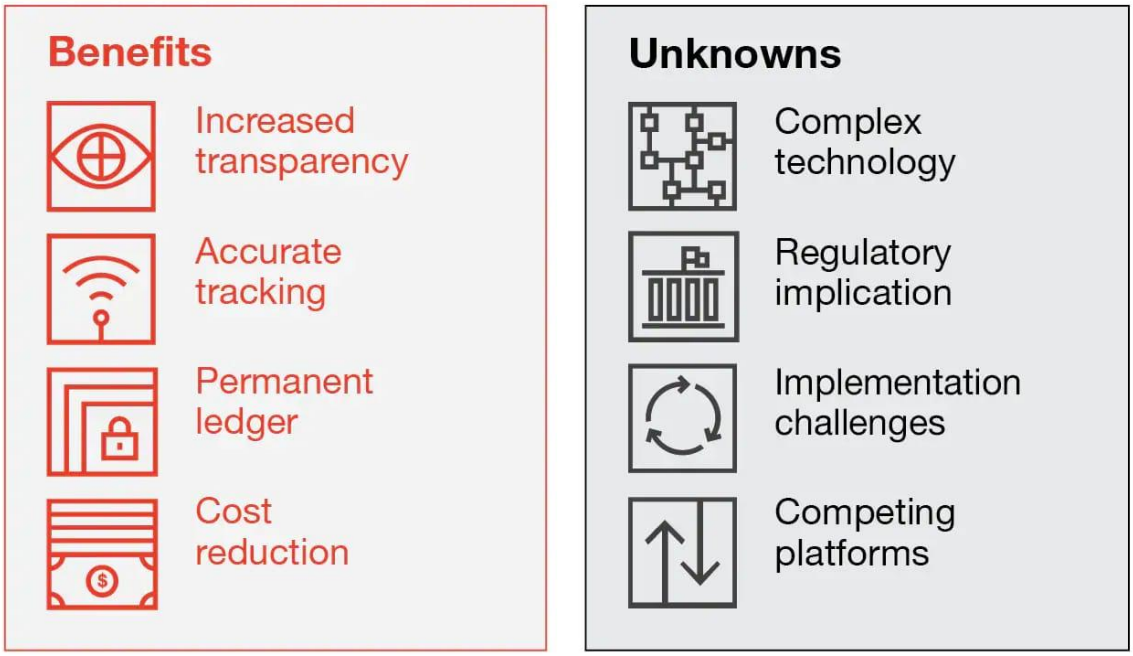
Major mining pools are now controlled or operated by large businesses, and power is once again being concentrated. This progression has severely weakened Satoshi's original vision for blockchain, in which people's "strength" was supposed to be dispersed evenly, but is now concentrated in the hands of a half-dozen mining conglomerates.

How is blockchain used in cryptocurrency?

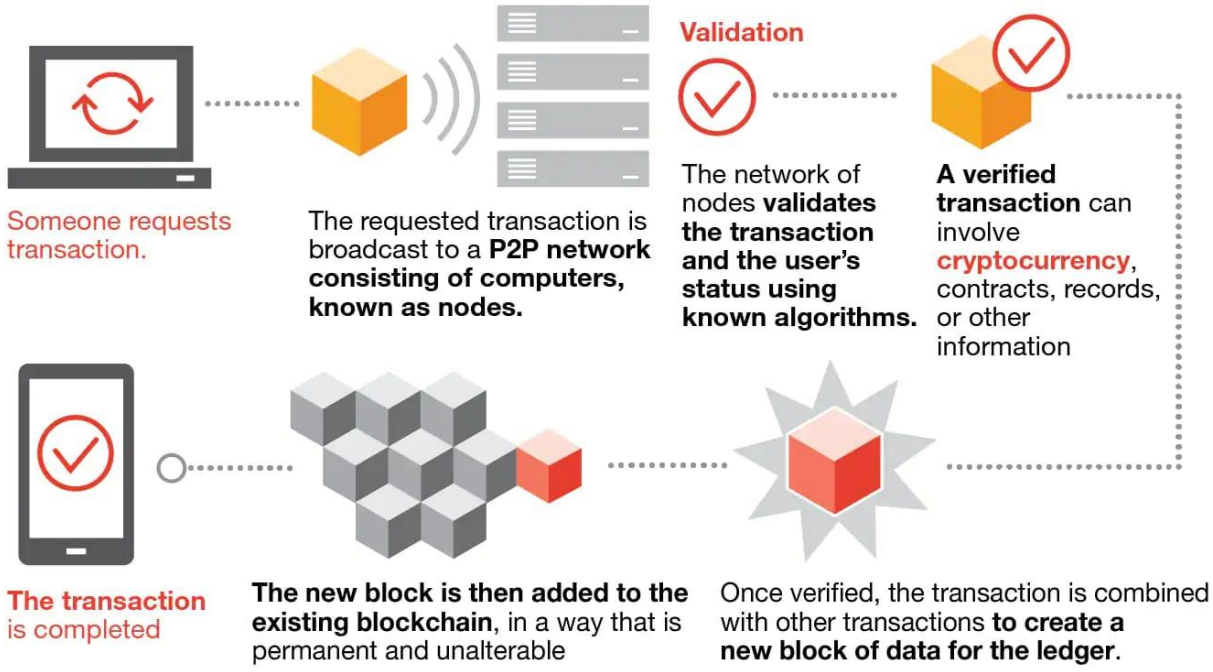
The technology that allows cryptocurrencies to exist is called blockchain (among other things). The most well-known cryptocurrency, Bitcoin, is based on the blockchain technology that was created. Cryptocurrency, like the US dollar, is a means of exchange that is digital and relies on cryptographic techniques to manage money production and verify transactions.

A blockchain is a peer-to-peer network that acts as **a decentralized** ledger for all transactions. Participants can confirm transactions using this technology without requiring the services of a central clearing body. Fund transfers, trade settlement, voting, and a variety of other difficulties are possible uses.

Blockchain's benefits and unknows:



How blockchain works



The goal of blockchain is to enable the recording and distribution of digital data without allowing it to be changed. The blockchain serves as the foundation for an immutable ledger or record of transactions that cannot be altered, erased, or destroyed in this fashion. As a result, blockchain is sometimes referred to as Distributed Ledger Technology (DLT) (DLT).

Prior to the first widely used application, Bitcoin in 2009, the notion of blockchain was initially suggested as a research project in 1991. The advent of numerous cryptocurrencies and decentralized finance (DeFi) apps has skyrocketed the usage of blockchain since then. Smart contracts and non-fungible tokens (NFTs).

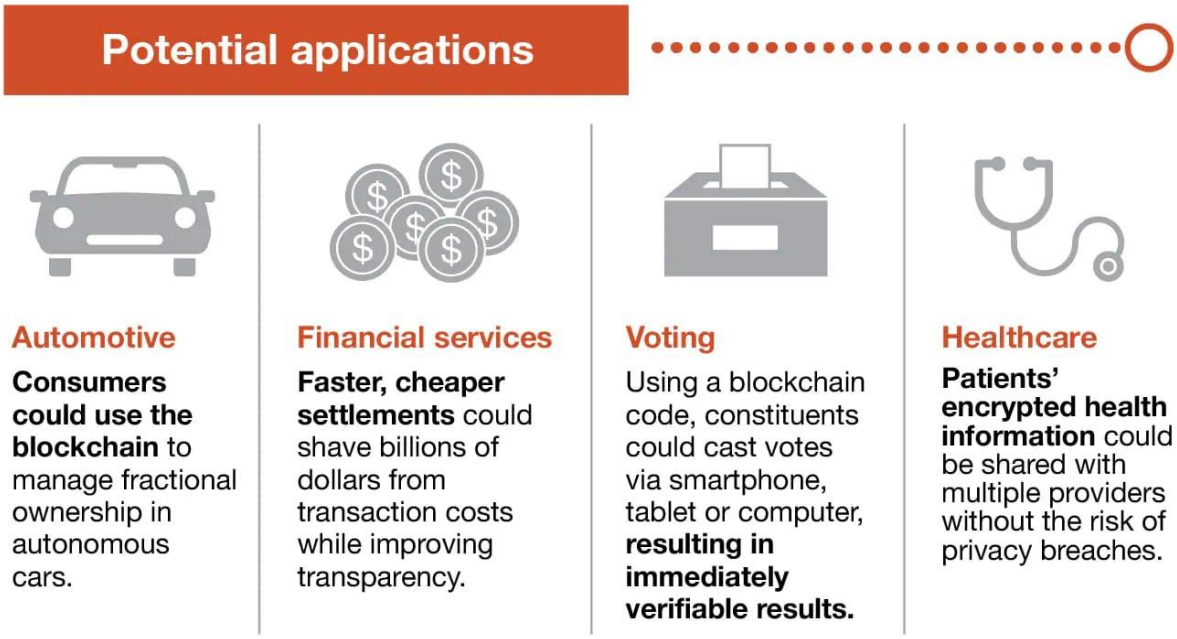
Blockchain Decentralization

Imagine that a organization owns a server farm with 10,000 computer systems used to hold a database keeping all of its client's account statistics. This organization owns a warehouse constructing that consists of all of those computer systems below one roof and has complete manipulate of every of those computer systems and all the statistics contained inside them. This, however, offers a single factor of failure. What takes place if the power at that region is going out? What if its Internet connection is severed? What if it burns to the ground? What if a terrible actor erases the entirety with a unmarried keystroke? In any case, the information is misplaced or corrupted.

A blockchain allows the information contained in a data collection to be disseminated among a number of organization centersass located around the globe. This maintains the consistency of the information stored by ensuring that if someone attempts to edit a record at one occurrence of the data set, different hubs will not be adjusted, preventing an agitator from doing so. If one client modifies Bitcoin's exchange record, any remaining hubs will cross-reference one another, thereby pinpointing the hub with the incorrect data. This structure aids in the creation of a well-thought-out and simple request for events.

Along these lines, the data and history, (for example, of exchanges of a digital currency) are irreversible. Such a record could be a rundown of exchanges, (for example, with a cryptographic money), yet it additionally is workable for a blockchain to hold an assortment of other data like legitimate agreements, state IDs, or an organization's item stock.

Blockchain’s potential applications



Blockchain vs. Banks

Blockchains have been proclaimed just like a troublesome power to the money area, and particularly with the elements of installments and banking. Be that as it may, banks and decentralized blockchains are boundlessly unique.

To perceive how a bank varies from blockchain, we should contrast the financial framework with Bitcoin's execution of blockchain.

FEATURE	BANKS	BITCOIN
SECURITY	A bank account's information is only as safe as the bank's server that houses client account information, assuming the customer uses strong internet security precautions such utilizing secure passwords and two-factor authentication.	Bitcoin's network becomes more secure as it grows in size. It is totally up to the Bitcoin owner to determine the amount of security they have with their own Bitcoin. As a result, it is advised that greater amounts of Bitcoin or any quantity meant to be retained for a lengthy period of time be stored in cold storage.
APPROVED TRANSACTIONS	For a number of reasons, banks maintain the right to refuse transactions. Banks also maintain the right to put account freezes in place. Purchases made in strange areas or for unusual things may be refused by your bank.	The Bitcoin network itself has no influence on how Bitcoin is utilized in any way. Users can use Bitcoin anyway they choose, but they must follow the rules of their nation or area.
HOURS OPEN	On weekdays, traditional brick-and-mortar banks are open from 9:00 a.m. to 5:00 p.m. Some banks are open on weekends, but only for a short amount of time. On banking holidays, all banks are closed.	No set hours; open 24/7, 365 days a year.

ACCOUNT SEIZURES	Governments can easily trace people's bank accounts and take the assets contained inside them thanks to KYC requirements.	Governments would have a difficult time tracking down and seizing Bitcoin if it is used anonymously.
TRANSACTION SPEED	•Checks: 24-72 hours to clear •ACH: 24-48 hours •Wire: Within 24 hours unless international *Bank transfers are not normally completed on weekends or holidays.	Depending on network congestion, bitcoin transactions might take anywhere from 15 minutes to over an hour..
TRANSACTION FEES	Payments by card: This charge varies per card and is not paid directly by the user. Stores pay fees to payment processors, which are typically levied per transaction. This tax has the potential to raise the cost of products and services. •Checks: Depending on your bank, checks might cost anywhere from $1 to $30. •ACH: When transferring to external accounts, ACH transactions can cost up to $3. •Wire: Domestic wire transfers can be as expensive as $25. International wire transfers can be as expensive as $45.	Bitcoin transaction costs are controlled by both miners and users. This cost can be anything from $0 to $50, but consumers have the option of deciding how much they are prepared to spend. This establishes an open market where if a user's charge is set too low, the transaction may not be completed.

PRIVACY	The client's bank account information is saved on the bank's private servers. The privacy of a bank account is just as safe as the bank's servers and how effectively the individual user encrypts their personal information. If the bank's systems are hacked, the individual's account will be hacked as well.	Bitcoin users may keep their transactions as secret as they like. Although every Bitcoin may be traced, it is hard to determine who owns Bitcoin if it was acquired anonymously. When Bitcoin is acquired through a KYC exchange, the Bitcoin is linked to the account holder of the KYC exchange.
KNOW YOUR CUSTOMER RULES	"Know Your Customer" (KYC) processes are required for bank accounts and other financial products. This implies that banks are obligated by law to keep track of a customer's identification before creating an account.	Without identity, anyone or anything may join the Bitcoin network. In principle, even an artificial intelligence-enabled entity may take part.
EASE OF TRANSFERS	The minimal criteria for digital transfers are government-issued identity, a bank account, and a mobile phone.	The most basic needs are an internet connection and a mobile phone.

Pros and Cons of Blockchain

For the entirety of its intricacy, blockchain's true capacity as a decentralized type of record keeping is nearly unbounded. From more noteworthy client protection and elevated security to bring down handling charges and less mistakes, blockchain innovation might just see applications past those illustrated previously. However, there are likewise a few inconveniences.

Pros:

By eliminating human verification, accuracy has improved.

Elimination of third-party verification results in cost savings.

It is more difficult to alter with decentralization.

Secure, confidential, and fast transactions are the norm.

Technology that is visible

Citizens in nations with insecure or weak governments have a banking option and a mechanism to protect their personal information.

Cons:

Bitcoin mining comes with a hefty technological price tag.

Transactions per second are limited.

Use in nefarious operations, such as the dark web, in the past

The legal framework differs by jurisdiction and is still a work in progress.

Limitations on storage

It is time for banks to engage with crypto assets customers

The acceptance of crypto assets is spreading from the financial fringes to the world's largest and most prestigious trading hubs. Banks cannot afford to lose out on this opportunity.

Although the crypto asset market is still modest in comparison to traditional asset classes, now is the time to cash in on the trend. In today's unstable economic climate, the institutionalization of crypto assets, as discussed by several companies in their research, continues to accelerate. The following are the main reasons for widespread acceptance of these technologies:

(1) increased regulatory clarity;

(2) growing interest among investors;

(3) increasing acceptance of stablecoins and central bank digital currencies (CBDCs);

(4) a robust ecosystem of commerce centered around cryptoassets (see Three promising areas of crypto innovation).

Regulatory clarity paves the way for mass adoption.

With US authorities providing greater clarification, a growing number of large banks are entering the crypto industry by creating goods, services, solutions, and operations aimed at attracting crypto asset consumers. Simultaneously, crypto firms are creating digital banking under state and federal banking licensees, emulating traditional banking by providing their own basic services. The confluence of two formerly different market groups is shown in these two patterns.

The Office of the Comptroller of the Currency (OCC) recently provided greater regulatory certainty to national banks and federal savings associations, affecting hundreds of millions of Americans who trade billions of dollars a day in digital currencies. In July 2020, OCC issued an explanatory letter stating that banks in the national system have the right to provide cryptocurrency custody services to their customers.

In September 2020, the OCC announced that banks could hold a reserve for customers issuing stablecoins, i.e., cryptocurrencies backed by fiat currencies such as the U.S. dollar. Finally, OCC announced on January 4, 2021 Work continued by issuing a dated explanatory letter. A statement that **national banks** and **federal savings institutions** can participate in the Independent Node Validation Network (INVN) and conduct payment transactions using stablecoins.

The evolution of OCC has paved the way for many crypto companies. **Anchorage, BitPay, Paxos** and **BitGo** to have applied for national bank charters under the OCC regulatory framework, and on January 13, 2021, Anchorage became the first national crypto bank to be approved5. The momentum of these applications in late 2020 and early 2021 will be a key indicator that cryptocurrency companies will continue to offer a wider range of products and services to the national customer base.

At the state level, Wyoming made history in the fall of 2020 by **offering** the first public special purpose deposit institutions (SPDIs) to digital asset firms Kraken Financial and Avanti Bank & Trust.

The crypto advantage: -

While crypto assets have had mixed reviews in the press and are founded on a shady economy, proponents claim the currency has the capacity to address some of the most difficult challenges in the financial ecosystem while also introducing new levels of transparency, trust, and scale.

Accessibility: Crypto-assets help create a more open financial system, provide an alternative to traditional asset classes, and democratize financial access for more customers across the world. peer-to-peer exchange network.

Efficiency: Crypto assets eliminate middlemen, fees. and other barriers to large transactions, creating a faster and cheaper global payment network. Open data on the blockchain enables an automated infrastructure and an always-open market.

Transparency: As a native digital asset, crypto assets provide greater transparency throughout the life of the asset. A public blockchain ledger allows accounts and transactions to be independently verified and audited, providing real-time insight and greater certainty for custody and payments.

Growing investor and institutional interest

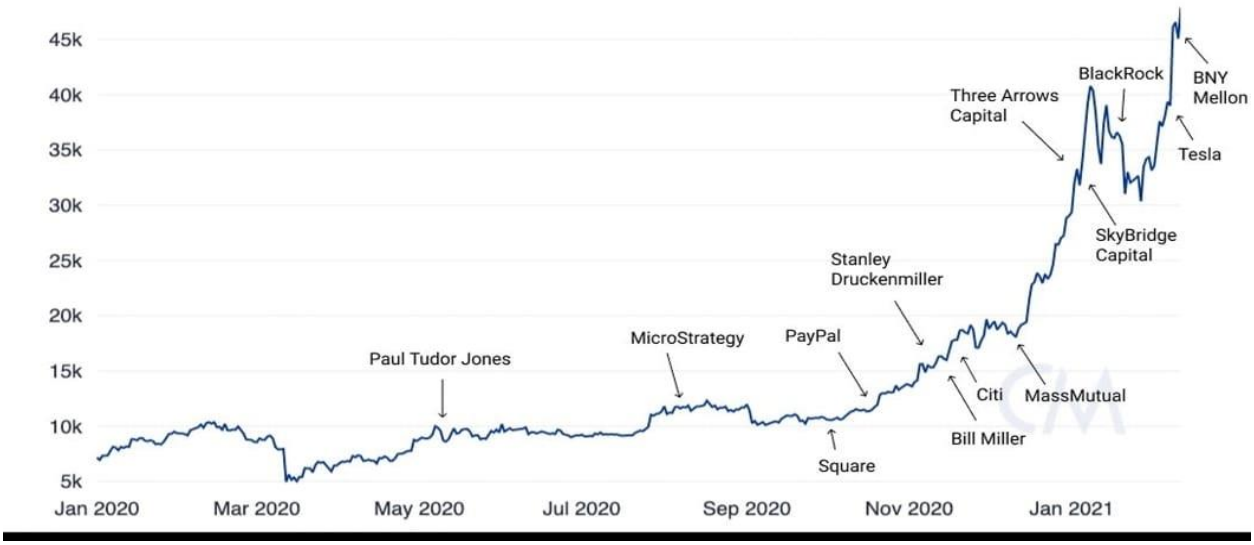
An increasing number of institutional investors are interested in cryptocurrencies, including well-known investment management leaders in the field. For example, BlackRock CEO Larry Fink has expressed his support for bitcoin, claiming that it has the potential to become a worldwide asset. Billionaire investors Paul Tudor Jones, Bill Miller, and Stanley Druckenmiller have already stated that they hold and advocate bitcoin. These recent investments might be viewed as an institutional milestone for bitcoin, since they serve to confirm key characteristics of the cryptocurrency among mainstream investors.

Furthermore, institutional activity expanded dramatically in the second half of 2020, as a growing number of publicly traded corporations switched their currency assets to bitcoin.

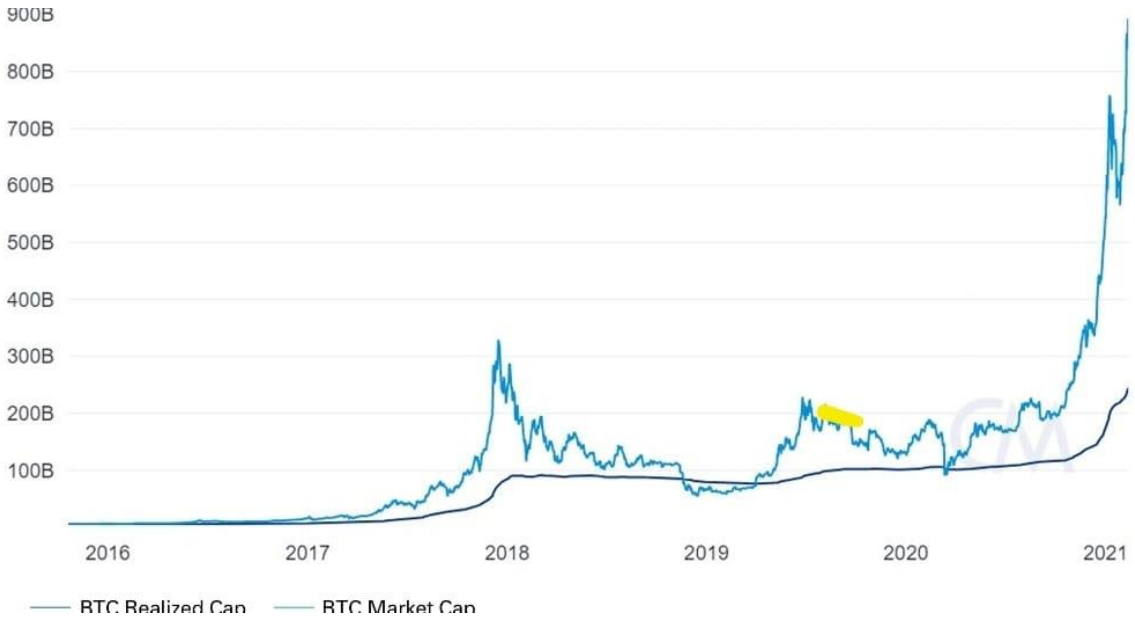
The engagement of financial institutions has also increased. J.P. Morgan and Goldman Sachs. Major payment providers, such as PayPal, are beginning to enable clients to buy, retain, and spend some digital currencies on their networks.

The Bitcoin price chart over time is further evidence that more institutions are using crypto assets, especially in the United States. Price movement after November 2020 is highly correlated with US market times compared to 2017 when the market was much more retail oriented.

- **BTC Price vs. Institutional Interest (fig.01)**



➢ BTC Market Cap and Realized Cap (fig. 02)



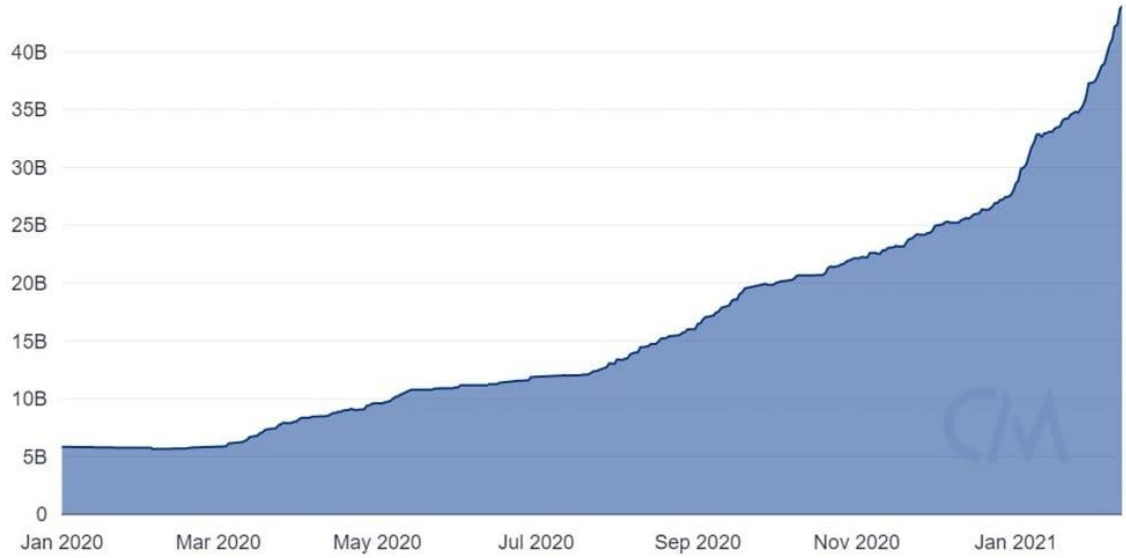
Increasing acceptance of stablecoins and central bank digital currencies (CBDCs)

Interest and use of stablecoins and central bank digital currencies (CBDCs), often viewed as gateways to traditional financial institutions' crypto asset markets, is growing exponentially, another sign of great opportunities for banks.

Stablecoins are traditional assets with a stable value, most commonly digital assets pegged to a currency such as the US dollar. They are protected by collateral (assets and funds) held in traditional banks. Since its inception, stablecoins have been widely used to limit traders' exposure to cryptocurrency price volatility, which was previously a major friction factor in the market.

Since March 2020, the adoption of stablecoins has been parabolic. With more than $40 billion in stablecoins issuance, the adjusted transfer costs for various stablecoins have skyrocketed as more and more customers are using them for payments, money transfers and transactions.

- **Total Stablecoin Supply (fig.03)**



Central Bank Digital Currencies (CBDCs) are tokenized digital versions of national or regional fiat currencies. CBDCs are officially created, issued and regulated by central banks and federal regulators.

Several countries have been investigating CBDC proposals since 2017, and some are testing the technology. Now, interest is lightning-fast, driven by both geopolitical and political factors. At the beginning of 2020, only 2030 governments worldwide were serious about developing CBDCs. Today, more than 70 countries in emerging and developed economies are participating in CBDC research projects or pilot programs that hope to help currencies boost economic power and expand financial inclusion.

As more countries consider the launch of CBDCS, banks are preparing to enter the crypto asset market. The banking industry is already moving towards supporting crypto asset customers in payments and lending, but that change is gaining momentum. In particular, national acceptance by the US Federal Reserve and the European Central Bank could change the game for broader acceptance. If banks can prepare their infrastructure, CBDCS could eventually emerge as a plethora of profitable blockchain-based banking technology solutions for storage, remittance, wire transfer, and more.

Why Banks are Cautious of Cryptocurrencies

According to a study conducted by the Association of Certified Anti-money Laundering Professionals (ACAMS) and the Royal Institute of United Services in the UK, nearly 63% of bank respondents see cryptocurrency as a risk rather than an opportunity.

Decentralized Nature

Crypto assets are created as an alternative to traditional banking infrastructure that does not require intermediaries and is not tied to the functions of a central government, bank or institution. Instead of relying on a centralized intermediary for these transactions, trust is given to the code of the blockchain and the decentralized nature of the blockchain.

Central bank-run cryptocurrencies make their assets less attractive in the first place, so some banks do not believe they can successfully enter this space. The decentralized nature of the currency is believed to undermine the credibility of central banks, leading some to believe that central banks will no longer be needed or will be unable to control the money supply.

AML/KYC Concerns

Cryptocurrencies allow peer-to-peer transactions without regulated intermediaries, allowing users to transfer funds quickly and easily without paying transaction fees. Rather than identifying a transaction with a separate bank account through a financial institution, the transaction simply needs to be linked with a transaction ID on the blockchain.

This type of alias makes many banks concerned about the lack of anti-money laundering (AML) measures and knowing the customer (KYC) rules for trading digital currencies. Banks are often under the impression that crypto transactions cannot be tracked for AML and KYC reasons, which can lead to illicit activity and online fraud.

Volatility

The price of cryptocurrencies (especially Bitcoin) has generally fluctuated over short lifetimes. There are several reasons, including market size, liquidity, and number of market participants. Banks view this as a risk because prices have not historically been stable and believe that the currency may not become a stable investment vehicle over time.

Three promising areas of crypto innovation

Cryptocurrency products and services have shown tremendous growth potential in the banking sector. There are many opportunities for traditional banks, fintech's and digital native banks to easily and securely provide solutions for storing, moving and using crypto assets.

Banks that successfully serve crypto assets and investors will be competitive in the future. Three banking sectors: **first-class brokerage services; generating income through loans**, **borrowing and interest rates**; And **the payout stands out for the potential profit.**

First-class brokerage services

The storage management of the assets and underlying cryptographic keys used by cryptographic asset holders to complete transactions is an important feature of cryptoeconomics. This will allow banks to interact with the crypto ecosystem and add related operations and services, including cash management, securities lending, leveraged transaction execution, and other back-and-forth support.

Resolving custody issues is a logical first step for banks looking to engage with cryptocurrency customers. Like all participants in the crypto market, a growing number of institutional clients are looking for ways to securely store and use crypto assets. Traditional banks are in a strong position to meet their needs. They protect a wealth of currencies such as dollars and yen, investments such as stocks and stocks, esoteric derivatives such as options and nondeliverable futures, and even physical assets such as gold and art. I have a lot of experience.

The back-office infrastructure and processes for the storage of digital assets deviate from the typical bank storage model and pose new risks that need to be evaluated and managed.

Current cryptographic storage models take many forms. Recently licensed Wyoming SPDIs such as Avanti Financial and Kraken are authorized banks that have complete control over the custody services of institutions that own and trade crypto assets. Cryptocurrency exchanges such as Coinbase, Kraken, Gemini and Binance offer digital wallets that enable private investors to hold, protect and trade crypto assets. Third-party custody providers such as BitGo and self-custody models such as Ledger and Casa are technology solutions for storing and protecting crypto assets.

Cryptocurrency custodian business opportunities are vast and evolving. But that's just the tip of the iceberg. Custody is the basis of a prestigious service package that covers everything from lending to lending for execution.

The difference between prime brokers in crypto markets and traditional financial markets is that investors integrate transaction clearing, settlement, order routing, exchanges, lending, leverage, cash management, portfolio management, financial reporting, tax reporting and more. This is a way to enable you to manage your transactions through other services. The competition for prime brokerage accelerated in 2020, with significant acquisitions by existing players and the launch of related products and services. Institutional investors currently entering the market are benefiting from a wide range of trading options and a safer and more flexible post-transaction settlement process.

“There is competition to provide services like prime brokers in crypto space. Banks may have advantages. In fact, prime services could be the first entry into the crypto ecosystem for many banks. There is. The ownership of crypto assets is still dominated by private investors, but Inst clients such as the wealthy are participating in Greater Numbers. They already have a relationship to store and protect crypto assets. We are looking for a bank to be in, and we also bundle white services to facilitate trading and other large investor activities.

For example, BitGo, a digital asset financial services company that provides custody and other world-class services to crypto investors, shows how banks can develop world-class service models for crypto customers. BitGo has developed a system that allows crypto asset owners to sell their assets and settle transactions internally without having to move them from their storage wallet. This is

representative of a risk mitigation approach that allows crypto asset owners to enter the market without exposing their assets to settlement risk on the chain.

Yield generation: Crypto borrowing, lending, and staking

The growth of crypto prime brokerage shows a strong interest in the organization. However, the demand cycle for crypto borrowing and lending has increased dramatically across the spectrum of crypto market participants. This demand cycle is reflected in the dramatic growth in user recruitment of centralized lending platform organizations such as BlockFi20 and Celsius and the explosive growth of decentralized finance (DeFi) by early 2021 and "locks" to DeFil. The total value of the assets created is over $ 25 billion.

In both centralized and decentralized crypto lending and lending models, crypto users can generate income by depositing crypto assets. Profitability has proven to be an important level of value-added service for participants with long-term investment positions. Centralized organizations developing lending and lending solutions are poised for significant growth as institutional adoption continues and more individual investors seek revenue opportunities.

DeFi's growth has been driven by technological advances that enable more efficient decentralized governance. To date, the best-known DeFi applications focus on decentralized peer-to-peer exchanges and crypto asset lending. In this context, pioneers including Uniswap, MakerDAO and Compound experienced dramatic growth and user adoption in 2020. The dynamics of DeFi regulation remain uncertain, but the transformative potential of this new sector is only just beginning to materialize.

In parallel with generating income through borrowing and lending, the growth of the Proof of Stake (POS) network has created new opportunities for generating income through “staking”. Staking is the process by which users of a PoS network “stake” their assets to participate in consensus and eventually earn revenue from block rewards issued by that blockchain. Pos yield generation is another value-added service provided by exchanges and custodians to customers. As with DeFi,

there are many key regulatory and tax-related staking questions that still need to be answered to clarify adoption by regulated financial services firms.

Staking is a process by which users on Pos networks "stake" their assets to participate in consensus, ultimately generating yield through block rewards issued by a given blockchain.

Payments

B2B and B2C digital payments are developing rapidly worldwide. The model emphasized cross-border payments to improve the cost and payment efficiency of stablecoins. Mobile payment apps like Square Cash App and PayPal Venmo have surged in popularity, especially after COVID-19 social distancing limits the use of physical cash to some extent.

The increasing integration of crypto assets into existing fintech payment platforms has spawned new methods of adopting cryptocurrencies and new payment methods that use cryptocurrencies for network transactions. It is a new low-friction mechanism to transfer value beyond traditional payment systems using public blockchains for cross-border payments and settlements, especially with stablecoins.

Banks and payment systems are rapidly entering the growing field of digital payments. In November 2020, PayPal launched a service that allows customers to buy, sell and store crypto assets, including Bitcoin, Bitcoin Cash, Litecoin, and Ethereum. PayPal's move was followed by another major payment provider that added a Stablecoin infrastructure company to the network.

Wider implementation in banking is the subsequent step, and it seems it's going to quickly be underway. Amex, Mastercard, PayPal, and Bank of America are a number of the monetary companies which have filed loads of patents related to the usage of blockchain generation for fast price rails, inner payments, and different sorts of payments.

Banking blueprint for the crypto world

To meet the needs of crypto asset owners, banking needs to evolve, especially at the institutional level.

We have identified seven key elements that a bank's operating infrastructure should be structured in to provide innovative and competitive crypto services. We believe in opportunity and business development. Models in the key areas where crypto activity currently impacts operations will help banks capture the most promising digital services business opportunities in the expanding crypto market.

1. Seamless customer experience

Successful companies have retail and commercial interfaces that can be interrupted to interact with oppression products, services and traditional assets. The environment is similar to the website and mobile application banking customers used today. Digital Composition All-in-one Crypto Customers can access and quickly access, pay bills, purchase goods, and use assets to use assets for loans and borrowing.

Focusing on customer experience is a major driver for the growth of institutional cold. Managing system assets with a small amount of experience in the password space can attract historical interest in the treatment of White glove used in customer experience and traditional stadiums.

2. Modernized custody models

Custody is an important feature that protects customers' crypto assets from theft or loss and makes them available for use.

The management and control of crypto assets is significantly different from traditional financial assets due to the completeness of transactions settled on public blockchains. This difference presents unique risks related to how organizations manage their processes and technologies to secure the cryptographic keys that control customer assets.

Given this unique governance model, the existing structures, processes and technologies of bank depositories must evolve for the sake of the crypto ecosystem. The back-office system for the storage, protection and accounting of digital assets is built on a new technology foundation and is specifically designed for crypto assets embedded in public blockchains. In this context, banks must make important “build or buy” decisions to unlock crypto-asset products and services.

3. Reporting and auditing capabilities

Trust is essential to attract and retain cryptocurrency banking customers, especially institutional ones. To compete in this growing market, banks must demonstrate that their crypto asset services are transparent, fair and consistent with best practices.

Trust in the financial services industry has traditionally been managed through extensive reporting and disclosure requirements for assets, customers, transactions, and more, and is frequently reviewed, reviewed and reviewed by regulators and auditing firms.

Standard setters are trying to apply existing approaches to certifications, trust and certifications such as tests / reports / SOC reports and federal information security guidelines for Crypto Business models. Because this structure can be compliant, the bank that provides Crypto Assets products and services can be verified that there is correct control to identify, control, monitor, and mitigate risks.

Crypto Auditing procedures for banks that provide customers require a unique approach to verifying the presence of ownership, control, and assets. Transparency and auditing are available through Hyundai Auto Test Approach to consider audit and accounting risks.

4. Integrating public blockchain data with internal data

The public blockchain contains a detailed record of every transaction confirmed on the network. This data is compressed as the blockchain scales, creating challenges related to the normalization and use of blockchain transaction data.

Organizations must overcome the challenge of creating a unified view of their customers and their transactions, both online and offline, to achieve business, compliance and risk management goals. These problems are exacerbated by the

fact that the data elements of public blockchains are fundamentally different from the data used and generated by existing systems.

“Whether building from scratch or purchasing crypto storage products, implementing a new storage infrastructure suitable for digital assets is one of the biggest investments a bank will make to get started in the crypto space. . Other products and services the bank sells to cryptocurrency investors will be built around solutions for trading, clearing, settlement, and more. They have to do the right thing to earn their customers' trust and return their investment by providing first-class service.”

5. Next-level cyber security

Cyber Security Stake is primarily the transaction of the public blockchain. Cryptoassets, which make accidentally changing hands, do not have the original asset owner because there is no central authority of authorities that do not have the authorities that are not responsible for confirmation, cleaning, resolution and resolution and handling and handling.

Widely used in the Financial Services Industry, the Cyber Security Control structure adopted is the NIST 800-53, which is a normal standard level supplemented by more discrete standards such as US Federal Information Process Standard (FIPS) 140-2, and federal for encryption management Guarantee authentication key. Competing in this space

banks must provide advanced safety and manage the original encryption risk. Safety Next Generation requires monitors and cyber protection and information companies.

6. Industry-standard risk management and controls

Crypto assets represent a fundamentally new risk that must be analyzed, understood and managed. Although there are inherent risks, blockchain infrastructure also provides new opportunities to deploy risk management and control automation that was not previously possible using existing technological infrastructure.

When entering the cryptocurrency space, banks must work together along three lines of defense to create a risk management practice and control environment that integrates with existing industry frameworks and regulatory requirements. Banks must also identify and rationalize the key differences and gaps in these structures that exist due to the nature of crypto assets. For example, encryption key control as defined in industry standards such as NIST 800-57 does not address the use of encryption keys to directly manage and secure cash flows.

Optimizing and simplifying the control environment can help companies meet the rapidly changing expectations of global regulators and agencies entering the space. This is becoming increasingly important as organizations like **Coinbase** and **Bakkt** go public.

However, it continues to emerge, evolve, and evolve as the standard is adopted. Cryptocurrency is expanding. Banks must keep abreast of new advances in risk management and crypto asset control with a focus on technological and operational agility to meet new industry fundamentals and expectations.

7. Robust regulatory compliance

Banks launching crypto products and services are required to comply with specific regulatory requirements, which will help develop robust risk-based compliance programs that go beyond compliance with traditional assets.

Important crypto regulations, including the Anti-Money Laundering Act (AML), the Know Your Customer (KYC) Bank Secrecy Act (BSA), and FATF travel rules that require businesses to share, will carry over from the traditional financial industry. Customer information when transferring funds between companies. One of the main areas of compliance for banks is financial crime, a major problem in traditional financial markets. The digitized and less regulated nature of the cryptocurrency market has raised the risk of financial crime.

Incumbent banks typically have mature AML, KYC and BSA compliance programs, but they need to improve their technology and processes to address the new challenges associated with crypto assets.

For example, monitoring transactions requires a combination of traditional methods and information from blockchain analytics providers and considerations related to crypto assets.

There is no consensus global regulatory framework for crypto assets, and there are differences and overlaps in the nature and application of the rules across jurisdictions. This complexity creates significant compliance challenges for banks and requires careful monitoring of regulatory developments around the world.

"**Security** gives institutional investors a level of comfort to interact with the cryptocurrency market. This is the most important. Banks need best-in-class hot and cold storage for crypto asset wallets to protect investors and attract customers."

Considerations for bank infrastructure transformation

If crypto markets keep to conform on the tempo and scale presently underway, latest conventional banking infrastructure may also have a restricted shelf life. Growing participation withinside the crypto financial system is making new crypto abilities vital foundations for the financial institution of the future.

How can banks get started engineering a business transformation of such magnitude and position themselves for success in the emerging digital economy?

Here we outline key actions to help banks accelerate their strategic roadmaps and develop core business and technology capabilities to serve crypto market customers.

Determine where to play.

A vital early stage in every corporate transformation initiative is to align goods and services with market opportunities. To determine present and future consumer demand for cryptoassets products, a bank can start by following growth patterns. Then they should analyze how the bank's wider customer focus aligns with the demands of target customers, as well as the impact of planned goods and services on revenue per customer, client acquisition, and customer attrition. It's also crucial to list the bank's current product and service offerings. Custody skills will undoubtedly be at the heart of a bank's overall cryptoasset strategy, but which other income streams to pursue will be determined by each bank's specific strengths in prime brokerage, lending, payments, and other related services.

Build or buy technology (or both).

The technology that underpins cryptoasset products is complicated and new, with blockchain at its heart. Whether to develop blockchain systems in-house or buy technology from crypto native firms will be determined by a number of criteria. The most crucial factor is talent: Is the bank's in-house personnel capable of designing and deploying cryptoasset products, or are they only capable of operating the technology?

It will also important where the bank operates geographically: Because authorities in some countries are cautious of homegrown solutions, banks in those areas may need to go above and beyond to demonstrate that they have a defensible infrastructure that puts regulators at ease. It's a toss-up whether to construct or purchase in the end: Understanding the degree of consumer demand in the market and how rivals are positioning themselves to satisfy it will be critical. A bank may frequently come to market faster if it purchases current technological capabilities rather than developing new ones from scratch.

Track and adjust to the regulatory climate.

The cryptoasset ecosystem's regulatory mechanisms are extremely complicated and constantly evolving. A bank establishing a cryptoasset service will need to keep an eye on regulatory developments in both the nations where it already operates and those where it may want to expand in the future. To understand the practices of various governments, look at the G20 nations and rising economies. What rules does crypto market participants? What patterns can be inferred from major financial authorities, treasuries, and central banks' pronouncements and updates? The bank's regulatory compliance plan should be flexible enough to deal with a number of scenarios that might arise in the next year, three years, or five years all over the world.

Stress scalability.

We've shown throughout this study that the cryptoasset business is growing at a breakneck pace in terms of market size and product diversity. Massive change is coming to the financial industry, and rising wealth will be available for the taking if the current pace continues. Banks have previously experienced technological upheaval. The most forward-thinking companies will use lessons acquired over the last three decades to prepare for the next wave, ensuring that their infrastructure can handle all forms of digital assets, even some that do not yet exist.

Industry Trends

Following are a few recent examples of digital currency use in the industry:

- Two cryptocurrency exchanges (Coinbase and Gemini) have joined JP Morgan as banking customers.

- Fidelity Digital Assets is launching a cryptocurrency mutual fund.

- PayPal's network now accepts bitcoin transactions.

Crypto Banks started offering loan on cryptocurrencies

People who have digital currency in their investment portfolios can now get credit lines from some "crypto banks."

Cryptocurrency owners, such as those who possess Bitcoin, Ethereum, or Ripple, can use crypto banks to borrow up to 50%-60% of the value of their assets.

These loans do not have a set repayment period and can be paid back at any moment.

Interest at 12-15% per annum is lower than 12-24% charged by the banks on personal loans, along with a processing fee in the range of 2-3%.

Which banks:

EasyFi Network, Vauld, and Cashaa, among other crypto-focused organisations, have begun lending operations in India.

"The loan is quick since it's collateralized, and we don't evaluate the borrower's creditworthiness," says Darshan Bathija, CEO of Vauld, which has arranged over $25 million in crypto loans in recent months.

But why would anyone take loan?

If a crypto-owner requires liquidity but does not wish to sell his assets, he may simply pledge them and obtain a loan.

So, if you hold bitcoin, which is now worth at Rs 45 lakh, you may use it to secure a loan of up to Rs 30 lakh from a crypto bank.

How it works?

The loan is disbursed into your crypto account using 'stablecoins' like USDT the value of which is pegged to US dollar.
The borrower can then sell the stablecoins on a crypto exchange to get fiat money (rupee, in this case) in his normal bank account.

But why this sudden rise in interest?

The decision by the Centre not to restrict cryptocurrencies has given numerous businesses like as exchanges, crypto banks, rating agencies, and protocol makers the confidence to develop their operations in India.

Cashaa has partnered with United, a multistate cooperative organisation established in Jaipur, to launch Unicas, a brick-and-mortar crypto bank.

More about crypto banks:

Customers may easily transact in cryptocurrencies, earn 9-10 percent interest on their crypto savings, and obtain cash loans through the bank.

Rajasthan, Gujarat, and New Delhi are all served by its branches.

Crypto deposits are also available through players such as Cashaa and Vauld, which function similarly to a traditional bank savings account.

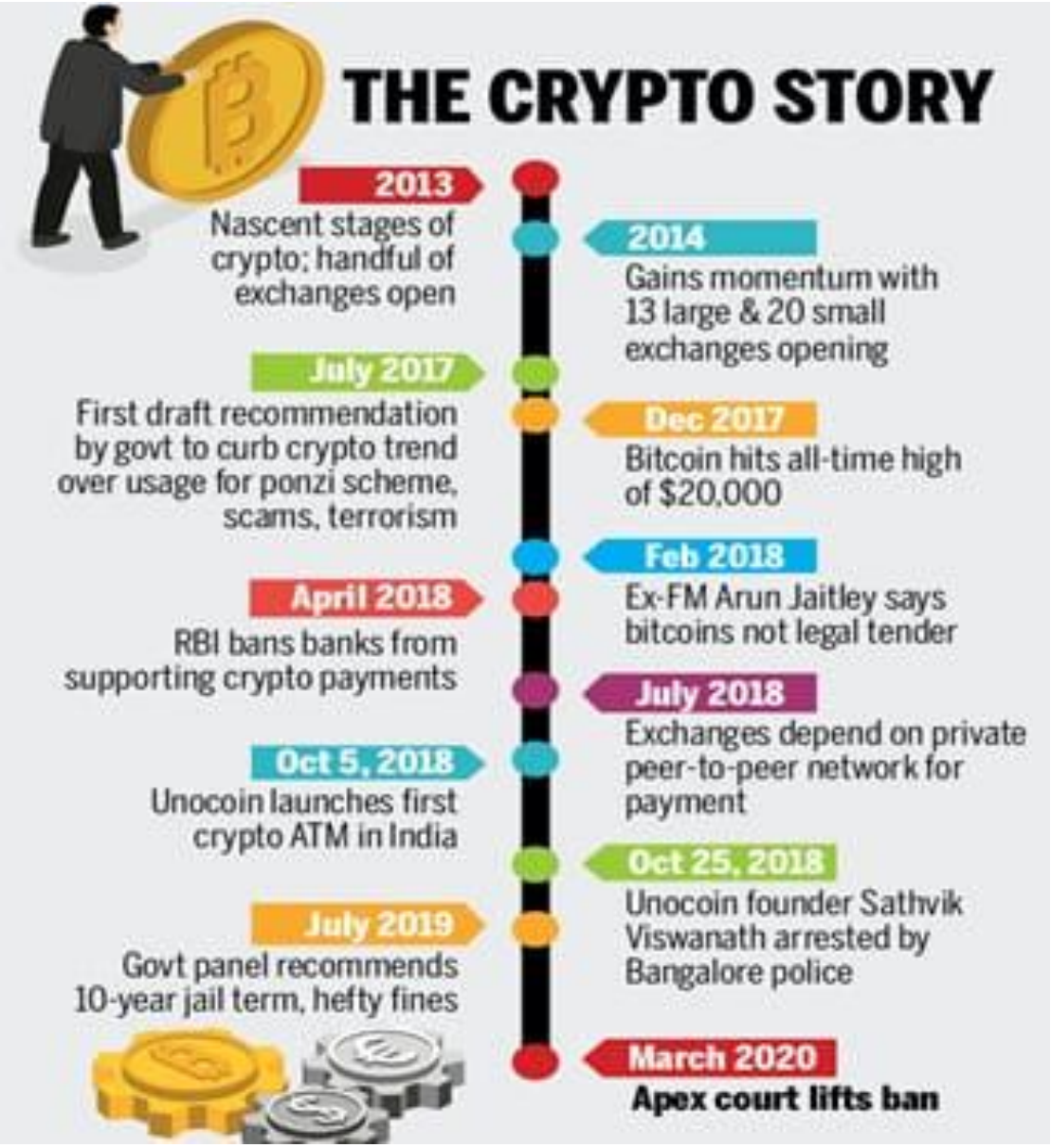
The owner of a cryptocurrency deposit account might earn up to 4% interest.

This quarter, EasyFi Network, for example, plans to start "payday loans" in India.

Anshul Dhir, cofounder of EasyFi Network, states, "This product will be for working professionals and salaried workers."

Timelines:

FIG.04



Central banks are launching cryptocurrencies

The Cryptocurrency and Regulation of Official Digital Currency Bill 2021, is likely to ban digital currencies - except the one being mooted by the Reserve Bank of India (RBI).

• Reports indicate that the bill is expected to provide an exit window (3 to 6 months) to the existing crypto holders of private entities.

• Indians are believed to hold around US $ 1.5 billion (around €10,000 crore) in cryptocurrencies.

1694 - The Bank of England became the first Central Bank to regularly issue banknotes - as an alternative to coins, as a means of payment.

21st Century - The primary task of Central Banks across the world is- maintaining price stability (inflation and forex rates).

➤Today nearly 90% Central Banks are exploring the idea of launching digital/crypto currencies - a form of money that you cannot see.

➤60% Central Banks are already experimenting with it.

The idea of digital money is not new - we already use debit/credit cards or payment apps for transactions.

What makes Central Bank digital currencies different?

Over the last few years, the rise in popularity of cryptocurrencies (like Bitcoin).

➤Volatile in value.

➤Unlike traditional money, cryptocurrencies are not issued by a Central Bank.

Generated via a decentralized (no single government/authority/company/person) network of computers - most commonly by using the blockchain technology.

• Since there is a theoretical limit on the number of Bitcoins that can ever be mined, cryptocurrency will become increasingly valuable (like gold).

2019- **Faceboo**k announced that it would develop its own digital currency - Libra.

Now, it has been rebranded as Diem.

At this point, Central Banks started to realize that they were under some threat.

➤Question in Central Bank circles - if we cannot beat them, do we join them?

The need for Central Bank Digital Currencies (CBDC)

Currently, the major accepted means of transaction -

1. Regular bank deposits

2. Cash

3. Cryptocurrencies issued by the private sector (like Diem and Bitcoin)

- all have a few features, that make them useful.

Benefits of CBDCS

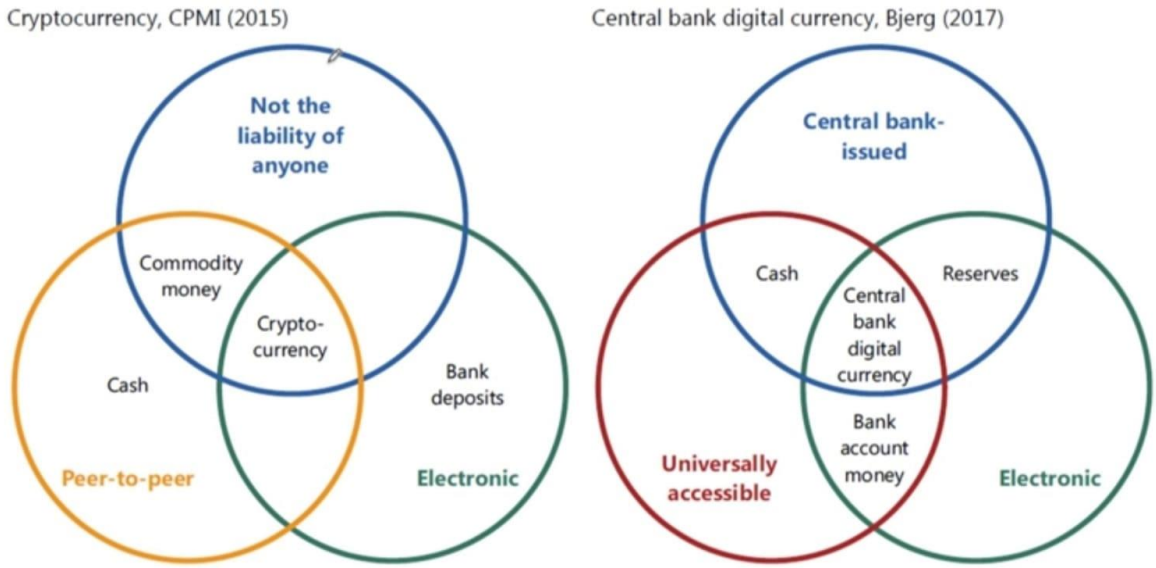
• Just like cash, everyone can have access to CBDCs.

Therefore, more people can have access to electronic payments - making it easier for governments to deliver monetary benefits to citizens (even those without bank accounts).

• Will allow for immediate settlements and no processing delays, thereby making payments faster.

• Regular retail payments using credit/debit cards have an extra charge - CBDC will make retail digital payments cheaper.

FIG.05



The benefits

Challenges

• Critics are questioning whether issuing CBDCs will interfere with the effectiveness of monetary policy.

Theoretically, if central banks wanted, they could pass negative interest rates on CBDCs

➤After any financial crisis, there is a possibility of people withdrawing their money from commercial banks and storing it as CBDCs instead.

Trouble - if CBDCs replace bank deposits in a large amount (banks will then have shortage of funds).

MITIGATING RISK

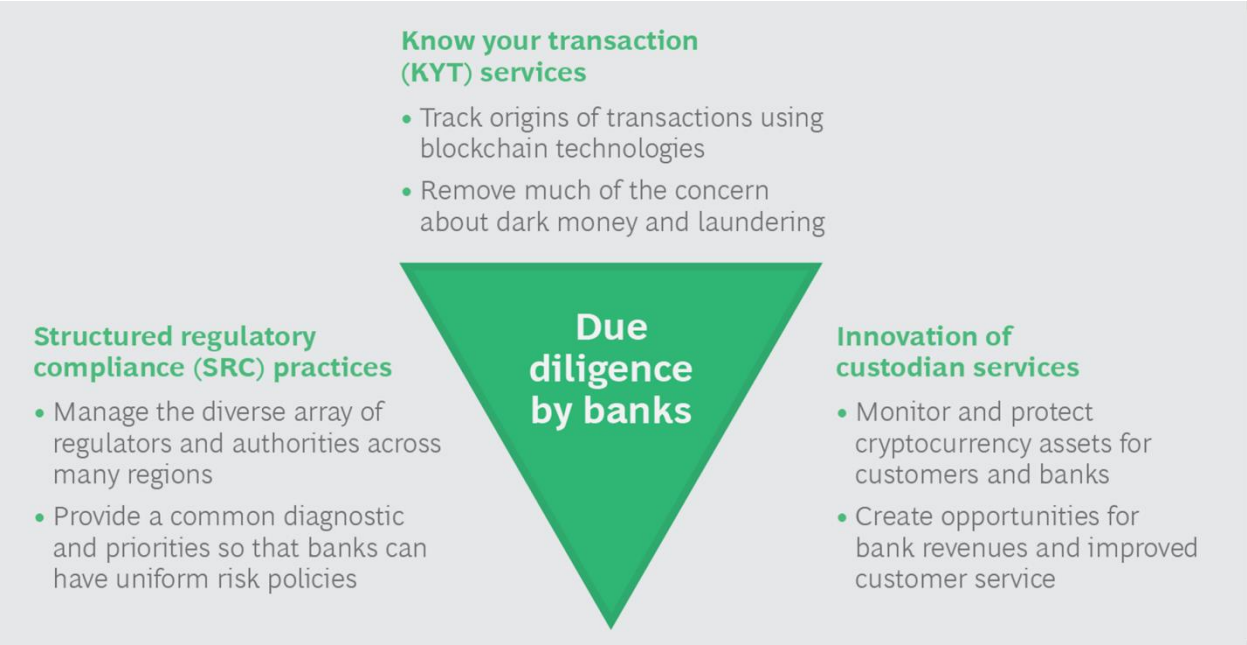
Banks must safeguard themselves and their clients from the hazards that new technology might bring when delivering goods in this fast-growing area.

Crypto-related assets "cannot dependably perform the standard functions of money and are dangerous to rely on as a medium of exchange or store of value," according to the Basel Committee on Banking Supervision in March 2019. It stated that thorough investigation on each cryptocurrency supplied to clients, an internal governance and risk management system, disclosure of all associated actions in financial statements, and proper discussion with regulatory supervisors are all critical measures for any offering.

All of these measures are vital, but due diligence is especially crucial. In the past, several cryptocurrency offerings have been linked to "black money" operations, such as unlawful commerce and criminal activities like as ransom and extortion payments. Terrorist groups have used cryptocurrencies to fund themselves in a few incidents that have been made public. Tax evasion is also a worry, and categorization is tricky in certain jurisdictions since regulators haven't decided whether cryptocurrencies should be treated as assets, currencies, securities, or commodities consistently.

Banks can use three sorts of solutions to do this form of due diligence: **know your transaction (KYT), structured regulatory compliance (SRC), and custodian services**. Although they may be outsourced, banks may profit from bringing them in-house and integrating them into their own crypto service chain. These three strategies, when used together, can help to create trust and answer most problems. Each bank does not always have to deal with them individually. In the end, the financial services sector will most likely develop processes and systems that include these precautions into every legitimate cryptocurrency offering.

Solution for cryptocurrency due diligence (fig.06)

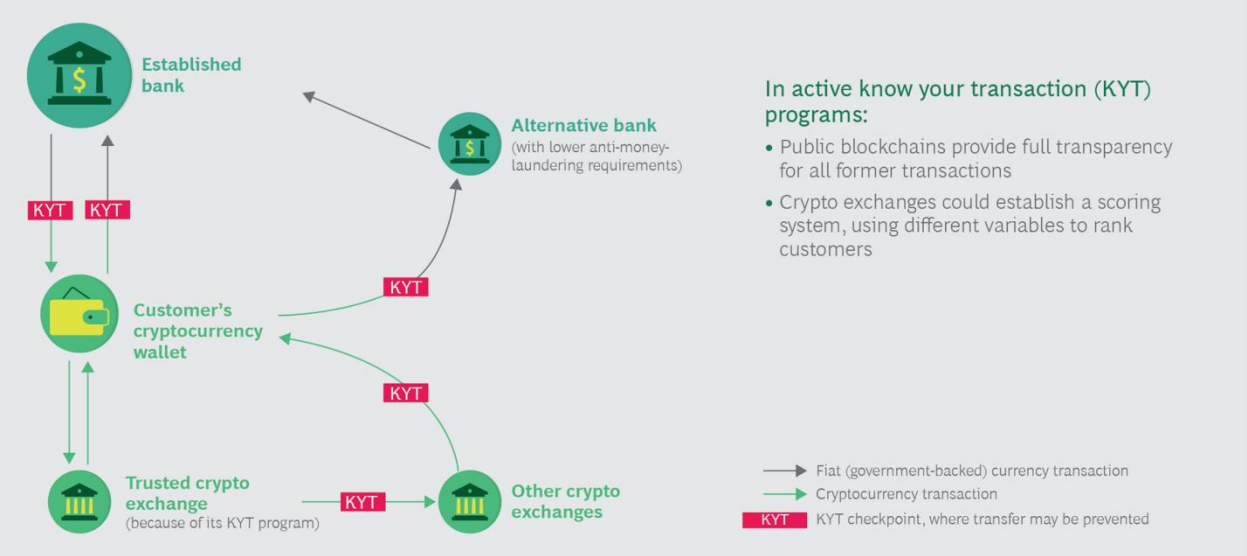


KYT: Beyond Customer Verification

Because of the usual manner that banks create credibility, verification has always been a problem for cryptocurrencies. When they enroll a new client, they rely on know your customer (KYC) verification, which authorities have mandated for at least a year for many major exchanges. Government identity, evidence of employment, dependable collateral, and credit references may all be required. However, because KYC focuses solely on the customer and not the transaction, it may miss some instances of counterfeiting and money laundering. KYC isn't used by all smaller exchanges, and it's usually used for retail consumers. The job of tracing every transaction back to its source is sometimes too onerous and costly for banks, especially when dealing with large amounts of money. As a result, money laundering and counterfeiting are frequently undiscovered.

However, blockchain technology allows for KYT, which may be used to trace practically all transactions back to their origins. (For further information, see Exhibit 5.) The digital ledger keeps track of all currency trades and payments in a distributed record that can't be tampered with. Furthermore, the KYT process can contain analytics that detect patterns of behaviour linked to criminal activities in the past and raise red flags when such patterns recur.

KYT checkpoints for establishing trust in transaction (**fig.07**)



To be sure, the technology will not solve all verification issues or address the hazards connected with cryptocurrencies, but it "may open up new means of overseeing these risks," according to BIS economist Raphael Auer. Auer proposed a notion termed "embedded supervision" in a 2019 BIS working paper, in which digital ledgers are continuously monitored for breaches. To put it another way, rather than integrating new crypto services into well-established regulatory compliance methods, tools are put in place to track and expose issues as they arise.

KYT is not a replacement for KYC; rather, they are complementary. Exchanges and banks can combine them to create a score system that ranks potential clients based on (for example) the reputation of transaction partners, as well as the time and geographic location of certain transactions. KYT might help banks achieve their anti-money laundering and financial-crime compliance requirements while also enhancing client confidence. Strong KYT programmes may also encourage banks to conduct transactions that their own regulations would otherwise prohibit. Customers would be more likely to stay with the bank rather than switching to a rival as a result of this.

Furthermore, banks frequently need to do a more thorough examination of the sources of transaction records, a procedure known as "know your data" (KYD).

KYT, KYC, and KYD can be utilized in a variety of ways when combined:

- To validate transactions on exchanges or broker platforms that do not immediately submit each transaction to the blockchain network.
- To track transactions that originate from non-blockchain providers (for example, with fiat currencies)
- To keep track of transactions where a portion of the sale takes place offline, such as a face-to-face handoff.
- To verify data from experimental cryptocurrencies when certain transactions are not immediately tracked due to design flaws.

Banks must improve their internal capabilities in order for the KYT strategy to function. On strictly technological level, connection and analytics are required; it is necessary to collect and evaluate a large quantity of transaction data on a regular basis. Then, in real time, a variety of managerial abilities are required. These include the ability to recognize and counter attempts to disguise transaction origins, link accounts to their sectors and countries, manage and update lists of questionable actors in this new context, build and maintain relationships with regulators, and seamlessly integrate technology into an existing compliance system without jeopardizing it.

Innovation of Custodian Services

Cryptocurrencies are frequently the victim of fraud or cyber-attacks. Custodian services, including as the storage, maintenance, and security of bitcoin assets, are becoming increasingly important to banks. For vendors that provide value-added services, entering the crypto custody industry might be a successful company. Banks are in a unique position to offer this service: a digital version of the traditional safe deposit box that takes use of the high levels of cyber security that are already in place to secure financial holdings and data.

The US Treasury's Office of the Comptroller of the Currency issued an interpretative letter in July 2020, stating that national banks and federal savings organizations' have the right to begin delivering these services as a modernized version of conventional banking operations. Custodian services are now being offered by several fintech firms.

FinTech are attempting to address the vacuum and thereby attract institutional investors, according to Mike Belshe, CEO of BitGo, a cybercurrency security services provider. Customers may use the US fintech Gemini to get custodial services, such as insurance against fraud and theft. However, owing of the relatively high risk and regulatory compliance difficulties, most institutional investors do not adopt fintech-based wallet services at present time.

Although a few traditional financial institutions, such as Bank of America and Nomura, have indicated aspirations to enter this market, no bank has yet acquired a dominating position. Banks that provide bitcoin services may be able to build a viable business model around them. No other company in this industry, for example, can match banks' reputations, track records, and regulatory-oriented expertise and contacts. According to some estimations, these features are worth up to 1% of the value of the assets they store each year.

Cryptocurrencies and distributed ledger technologies will almost certainly enter the mainstream in the next years. Financial services innovation is only getting started. As a result, new payment, investing, and savings methods will emerge. And, should conditions change, the three options of KYT, SRC, and custodial services are enough for the foreseeable future.

Structured Regulatory Compliance

Cryptocurrencies and associated blockchain technology are governed by a number of government agencies throughout the world, each of which has enacted its own set of rules and regulations. Countries hold a diverse range of viewpoints. Some are very stringent, outlawing or severely restricting both cryptocurrency exchanges and initial coin offerings (ICOs). Others are mostly uninvolved. Other regulators have yet to say whether or not they will take any action.

New policy frameworks are still being developed. The European Commission, for example, has suggested a draught regulatory framework to govern crypto assets and associated market infrastructure, albeit it is uncertain whether and when this framework would be implemented. Separately, Liechtenstein's recent approach is regarded as a thorough and reliable blueprint.

One of the most significant hurdles to the growth of cryptocurrencies is regulatory inconsistency. Business executives are well aware that if rules change, their investments may lose value. The legal definition of these services is one of the most crucial unanswered questions. Will they be recognized as assets or as monetary exchange vehicles? As a security or a commodity? Is it better to treat financial instruments as a single category or as two or more categories, each with its own set of rules? These judgments will have a significant influence on how businesses and investor’s view investing in crypto assets in the future.

Banks must build their own consistent criteria because there is no clear global regulatory structure. They should start by drawing a regulatory heat map and doing a gap analysis. In each location, this combined effort should address the most important rules, forecast future changes, and identify regulatory gaps (the difference between current requirements and possible modifications).

Second, banks should conduct a risk management assessment of their own operations. They should identify and prioritize cryptocurrency efforts throughout this exercise. Then they should make a list of the primary sources of skill and technology required to achieve these goals. It is necessary to design an implementation strategy that lays out the procedures necessary to comply with existing and future requirements. Another stringent Programme should be built to archive significant milestones in order to recover the work.

Finally, banks should explore building risk management software for their own transactions—as well as selling it to third parties, such as exchanges, to help fund their expenses. All of these processes can assist institutions in preparing for their bitcoin ventures while minimizing material risks and considering existing and future restrictions.

The true source of concern is not risk, but rather missed opportunity. Will banks be able to provide their consumers with the investment vehicles and transaction services that they demand? Will these new technologies be able to be integrated into their current operations? There is no common strategy for this, but the financial institutions that create and implement a feasible strategy will lead the sector.

Conclusion

Many financial institutions are cautious to embrace digital assets since there is a lack of direction and regulation surrounding them. Institutions are also cautious to enter the cryptocurrency market owing to security and stability worries; however, instead of fearing the technology's risks, banks can look forward to its potential benefits.

"Like comparable technical improvements in the past, there was the potential for illicit behaviour," acting Comptroller of the Currency Brian Brooks said in a statement. " There's plenty of space for economic growth as well. " As a result, we don't want to forego such benefits due to the likelihood of criminal behaviour. We want to help banks innovate by providing compliance standards."

Crypto should be viewed as a partner rather than a competitor by financial institutions. Banks may play a significant role in the cryptocurrency industry, offering much-needed trust and security in an otherwise chaotic atmosphere. Adoption of cryptocurrencies and blockchain technology in general might speed up processes and catapult banks into the next era of efficiency and innovation.

REFERENCES:

1. Chainalysis. 2020. “2020 Geography of Cryptocurrency Report.” https://go.chainalysis.com/2020-geography-of-crypto-report.html.

2. Chainalysis. 2021a. “2021 Global Crypto Adoption Index.” Blog. https://blog.chainalysis.com/reports/2021-global-crypto -adoption-index.

3. Crypto Firms Paxos, BitPay Apply for National Bank Charters (Banking Dive, Dec. 14, 2020)

4. Goldman Sachs to Enter Crypto Market 'Soon' With Custody Play: Source (Coindesk, Jan. 15, 2021)

5. PayPal Launches New Service Enabling Users to Buy, Hold and Sell Cryptocurrency (PayPal Newsroom, Oct. 21, 2020)

6. The Rise of Central Bank Digital Currencies (Atlantic Council, Sept. 8, 2020)

7. BlockFi Raises $50M Series C Led by Morgan Creek Digital (BlockFi, Aug. 20, 2020)

8. Crypto Exchange Bakkt to Go Public Via a $2.1 Billion Deal with Blank-Check Firm (CNBC.com, Jan. 11, 2021)

9. Defi Pulse (Jan. 2021) 23 PayPal Launches New Service Enabling Users to Buy, Hold and Sell Cryptocurrency (PayPal Newsroom, Oct. 21, 2020)

10.Kraken Wins Bank Charter Approval (blog.kracken.com, Sept. 16, 2020) 8 Avanti Financial Joins Kraken as a Wyoming-Approved Crypto Bank (Coindesk.com, Oct. 28, 2020)

11. Custody: Crypto Assets' Unique Challenge and Opportunity (CoinDesk, July 2019)

12. Institutionalization of cryptoassets IKPMG LLP 2018)

13. Investor Bulletin: Custody of Your Investment Assets (SEC.gov, March 1, 2013)

14. State Street: 38% of clients will put more money into digital assets in 2020 (Coindesk, Dec. 6, 2019)