

Transformation in payments: A technology powered future



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Executive Summary

The ability to move funds has been a core offering of the Financial Institutions business model. Payment services' capabilities have advanced with the technology of the day – with each generation of payments technology improving on the limitations of the previous one.

Consider the existing pain-points inherent in legacy hub-and-spoke payments systems:

- Transfers can take several days to complete
- Multiple validations result in expensive posttransaction and reconciliation activities
- Lack of clarity around transaction fees and exchange spread exists

Blockchain solves these drawbacks by way of a cryptography-enhanced, tamper-proof, append-only decentralised ledger structure. The name itself, "blockchain", refers to sequential records in a ledger that are both immutable and distributed.

- **Immutable:** users can only append data at the end of the ledger, but cannot edit the data once it's been written.
- **Distributed:** copies of the ledger are stored on a network (as many as thousands) of computers around the world.



Since the advent of Bitcoin in 2008, all blockchain payments technologies share the following characteristics that can potentially solve payments' pain-points:

- **Built-in privacy protection:** Blockchain uses public-key cryptography to protect individual transactions and users and Zero-Knowledge Proofs that verify information validity without revealing the information itself.
- Transparency: The blockchain's immutability and distributed nature make it an ideal shared source of truth for both payer and beneficiary—reconciling payments at both ends, eliminating disputes and inconsistencies.
- Decentralised network: Blockchain is an example of a Distributed Ledger Technology (DLT) that allows FIs to track all interbank transactions and reconcile each financial institution's ledgers, without a need to go through legacy centralised payments networks.
- **Smart contracts:** These are self-executing contracts in blockchain which can automate formerly multi-step operations, ranging from processing transaction repairs to ensuring transaction compliance.
- **Higher speed and lower cost:** With smart contract enabled atomic settlements, financial transactions can be processed and finalised near-instantaneously and at a much lower cost.

As consumers make the shift from physical cash to digital and contactless payment instruments, new blockchain-based digital payment use cases have been steadily adopted across the payments services sector:

On-demand cross-border real-time

payments: To address the inefficiencies of the present correspondent banking system, blockchain-based payment networks like Partior rely on a single distributed ledger that connects its participating commercial banks to enable near-instant cross-border payment and settlement capabilities around the clock.

Tokenised digital assets &

cryptocurrencies: Tokenisation refers to the process of converting an underlying asset into a digital "token" that acts as its proxy. Beyond securitising financial assets like cash, equities and debt, tokens allow securitisation and trading of real assets like works of art, commodities, real estate and other artefacts.

Cryptocurrencies like Bitcoin and Ethereum are also tokens: They are parts of permissionless blockchains that incentivise behaviour in an authority-less environment. Until FIs can solve cryptocurrencies' inherent volatility and lack of scalability, their adoption for payments purposes is limited. **Stablecoins & CBDCs:** Stablecoins enjoy all the benefits of cryptocurrencies, plus the stability that comes from having their value pegged to an external reference asset. Central bank digital currencies (CBDCs) take this one step further, being issued and guaranteed by a country's central bank.

GameFi & Metaverse: Blockchain underpins payments in the realm of "GameFi", a new category of games that allow players to earn cryptocurrency and NFT (non-fungible token) rewards through gameplay. The same goes for the Metaverse, a type of computer-generated, networked extended reality. Blockchain enables payments in the Metaverse, potentially allowing the transfer of real-world currency, cryptocurrencies, and even tokenised assets like NFTs into a digital wallet on the Metaverse which you can use to buy, barter or trade.

As corporate decision-makers take advantage of today's ongoing shift to digital payments and assets, FIs must adjust and offer value to clients in this changing ecosystem.

Fls will continue to play a significant role in payments; customers will continue to seek out the security and stability Fls operating in the digital asset space offer. By mastering the new payments infrastructure, Fls will be in a better position to sustain market relevance in the long term and expand into other financial services.



Introduction: Technology-driven transformation of financial services



As long as Financial Institutions (FIs) have existed, the ability to move funds has been a core offering of the FI business model.

The model depends on providing access to payments, and payment services' capabilities have advanced with the technology of the day. The 1970s brought us SWIFT (Society for Worldwide Interbank Financial Telecommunication), which remains today's global standard for transmitting money transfer instructions.¹ The Internet Age took the evolution of payments into overdrive, from web-enabled platforms like PayPal and digital wallets entering the market to compete for the expansive payments market. Branding themselves as "fintechs", these fintechs differentiate themselves by providing the ability to nimbly embed a frictionless yet hyperpersonalised onboarding journey and payment form factor for end customers.

Fast forward to today's blockchain-based payments systems², forward looking Fls and fintechs can both tap into alternative processing and blockchain-based clearing infrastructures whilst at the same time disintermediating Fls. Both capabilities are key in addressing longstanding issues in the concept of money movement in the market. The market for payments is exploding at the same time with burgeoning demand for secure, cost-effective, 24x7 real-time payments. This demand is directly related to the expansion of e-commerce and remittances, and the need for contactless payments (which has only increased exponentially due to the Covid-19 pandemic), including in areas such as public transportation, mass transit and tourist spend. As we trace the historical evolution of payments, it is noted that each generation of payments technology provides a significant leap over the limitations of the previous one. Payment friction associated with hub-and-spoke payments systems' intermediaries and long clearing times, among others, have helped blockchain-based payments rise to the fore as a faster, more costeffective alternative.³



The rise (and rise) of blockchain

It's no exaggeration to say that blockchain has transformed the financial services ecosystem. Its decentralised yet secure infrastructure underpins a wide variety of new asset types, including cryptocurrencies, digital tokens and central bank digital currencies (CBDCs), and opens additional commercial use cases for practitioners within the financial ecosystem.

The last few years have seen a rapid rise in the range and breadth of blockchain-based financial services and digital asset exchanges, along with a proliferation of technology companies offering disruptive embedded payments capabilities. The numbers bear this out: global investment in blockchain and crypto technology drew a record US\$30.2 billion in 2021, compared to 2020's US\$5.5 billion.⁴

Does blockchain represent a threat to Fls' existing business model and their legacy payment systems? Given the history of disruptive technology in the financial industry, Fls may urgently need to consider a more open-minded approach. Paper money and central banks brought economies worldwide to new heights when they were invented; their obvious advantages turned them into the status guo in due time. What if tech-based financial developments like blockchain and payments in the metaverse weren't a threat, but an opportunity just waiting to be picked up by FIs?

These new payments platforms are already being road-tested by early adopters in the payments field: ongoing experiments with these technologies are presently setting the groundwork for the future of payments, and building the basis for a new, blockchain-based status quo.

Blockchain, CBDCs and the Metaverse are part of the future of payments – and Fls that innovate in these new technologies stand to benefit from capturing emerging opportunities to grow their business.

How blockchain catalysed a payments revolution



Consider the norm in cross-border payments:

- Each transfer can take up to several days to complete, not including weekends, holidays, time zone differences and banks' prevailing currency cut-off times.
- Correspondent banks' multiple validations translate to expensive pre- and post-transaction exception handling and reconciliation activities.
- Unclear transaction fee structures and foreign exchange spreads impose unnecessary costs.

"The current hub-and-spoke arrangement in global payments and sequential correspondent bank processing often causes delays, as confirmations from various intermediaries are needed before a settlement is treated as final," explains Lim Soon Chong, Group Head of Global Transaction Services, DBS. "This, in turn, has a knock-on effect and creates inefficiencies in the final settlement of other assets."

Transparency and security in the present method leaves much to be desired. Rare but high-profile cases of fraud using conventional cross-border payments systems⁵ put customer trust in the present payments system at risk, already sorely tested by the system's inefficiency and high costs.

In place of hub-and-spoke payments systems, blockchain represents a payments system based on a cryptography-enhanced, tamperproof, append-only decentralised ledger structure. The concept dates back to the 1990s, but it didn't catch on until 2008, when a white paper published by the pseudonymous "Satoshi Nakamoto" kickstarted the rapid mainstreaming and adoption of blockchain-based payments that continues to this day.⁶ Blockchain refers to sequential records in a ledger that are both **immutable** and **distributed**.

Satoshi built a model, using a permissionless blockchain, that enabled instantaneous payments without needing a central authority to guarantee each transaction. Each transaction is checked against the blockchain to make sure the currency hasn't already been spent – eliminating the "double-spending" problem that necessitated a centralised authority in the first place.⁷

Satoshi's white paper single-handedly invented Bitcoin, the first application of blockchain technology,⁸ which led to the development of cryptocurrencies and other blockchain- based applications.

Immutable: users can only append data at the end of the ledger, but cannot edit the data once it's been written.

Distributed: copies of the ledger are stored on a network (as many as thousands) of computers around the world. Blockchains can also be "permissioned" (limited only to designated participants) or "permissionless" (open to anyone to participate).



All blockchain payments technologies, from Bitcoin onwards, share the following characteristics that can potentially solve the existing pain-points in the present status quo in payments:



Built-in privacy protection

Despite the "open" blockchain, public-key cryptography protects individual transactions and users. This depends on two pairs of keys: public keys used to publicly identify users; and private keys, which are secret and used for authentication and encryption.⁹

Zero-Knowledge Proofs provide an additional security layer, by using mathematical formulas to verify information validity without revealing the information itself.¹⁰ Financial institutions on the blockchain can carry out user verification, for instance, without gaining access to the data itself – reducing the risk of breaches to a minimum.



Transparency

The distributed ledger allows transactions to be processed securely and settled directly on the blockchain. The latter's immutability and distributed nature make it an ideal shared source of truth for both payer and beneficiary; payments are instantly reconciled at both ends, eliminating disputes and inconsistencies.

For example, Walmart Canada's implementation of a blockchain-enabled solution for freight invoice and payment processing led to invoice disputes falling from 70% to less than 2%.¹¹ As more blockchain-enabled solutions supplement or replace today's legacy payment infrastructure, the former will be able to solve problems that the latter could not: inefficiencies, fraud and manipulation of financial audit trails may become a thing of the past.



Decentralised network

Compared to the centralised networks used by traditional banking/payments providers, blockchain is an example of a Distributed Ledger Technology (DLT) where decisions about data are decided by the peers who utilise it.¹²

In a pre-blockchain world, intermediaries provided necessary layers of protection but also brought additional downtime and fees. A McKinsey study found that cross-border payments represented only 20% of global payment flows, but generated 50% of transactional revenues.¹³

By using a blockchain payment system, FIs can keep track of all interbank transactions openly and transparently, using DLT to reconcile each financial institution's ledgers, with no need to go through legacy centralised networks and their intermediaries.



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Smart contracts

Blockchain enables "smart contracts," self-executing contracts which can automate formerly multi-step operations ranging from processing transaction repairs to ensuring transaction compliance.

For instance, a specific smart contract called a hash time-lock contract (HTLC) enables atomic settlements, where digitised currency can be sent for settlement directly between counterparties, within seconds of certain pre-programmed conditions being met. Delivery and payment are required to occur at the exact same moment, otherwise, the HTLC returns the assets to each trader.¹⁴

"By enabling market participants to perform atomic or instantaneous settlement of payments for various types of financial transactions, it also increases financial transaction efficiencies with condition-based value movements automatically within the network," explains Mark Troutman, Group Head of Sales, Global Transaction Services, DBS.



Higher speed and lower cost

Legacy FI infrastructures extract a heavy overhead price, with billions spent on maintaining central databases, not to mention recurring costs like bookkeeping, value transfer systems, commissions and labour.

With smart-contract-enabled atomic settlements, financial transactions can be processed and finalised near-instantaneously and at a much lower cost. "We see the ability for programmable payments to simplify client journeys associated with completing payments transactions," explains Rachel Chew, Group Head of Cash Product Management, Global Transaction Services, DBS. "This simplification of journeys will bring about operational efficiencies and allow clients to divert their focus to other revenue-generating activities."

Over time, the benefits of smart contracts and other blockchain-based payments solutions can add up: distributed ledgers/blockchain can reduce banks' infrastructure costs attributable to cross-border payments, securities trading and regulatory compliance by US\$15-20 billion per year by 2022.¹⁵

In the market today, both blockchain and real-time instant settlement market infrastructures provide the foundation for instant clearing, in both domestic and cross-border payments. To improve clearing and settlement in payments, particularly in cross-border payments wherein there are tens of thousands of corridors, the more scalable ways would be in utilising linkages of market infrastructures and blockchain-enabled networks. However, between the two, blockchain-based clearing networks are ultimately the more flexible and scalable option for wholesale and retail payments.

Blockchain's emerging use cases



The payments services sector has greatly benefitted from the rapidly digitalising financial landscape, as consumers have shifted from physical cash to digital and contactless payment instruments at an unprecedented rate.¹⁶

The payments sector is a favoured field for digital disruptors, due to factors like being less capitalintensive relative to other financial services, and the high value of payments information for crossselling purposes.¹⁷ Unsurprisingly, payments have benefited from an ongoing digital innovation rush, generating a catalogue of new blockchainbased digital payment use cases including (but not limited to) cross-border payments, tokenised assets and the Metaverse. "In the past, the disruption was focused on converting paper processing to digital," explains Sriram Muthukrishnan, Group Head of Product Management, Global Transaction Services, DBS. "Now, more payment providers are looking into investing or providing alternate digital technologies, like blockchain, to substantially improve the payments process."



Speedy money: on-demand cross-border real-time payments

Under the present correspondent banking system, cross-border payments can be complex, increasingly so as the distance between parties grows and the intermediaries multiply. Know-your-customer (KYC) and anti-money-laundering (AML) regulations vary from country to country; each jurisdiction has different cut-off times and time zones.

These barriers impose an undue cost to payments clients, who "often bemoan the lack of multicurrency clearing capabilities in-country, the complex web of multiple correspondent banks, long settlement cycles, cut-off time restrictions, uncertainties in charges by agent banks, hassles with payment failures and a lack of visibility and traceability," as Mark Troutman puts it.

Blockchain-based payment networks solve these issues by offering near-instant crossborder payment and settlement capabilities around the clock. To complement or replace the traditional Hub-and-Spoke payments model, a blockchain-based payments system might rely on a single distributed ledger that connects its participating commercial banks, allowing its participants to transact with each other in different currencies directly. This model is the basis for Partior, a peer-topeer interbank clearing and settlement network established by DBS, Temasek and J.P. Morgan, as an offshoot of the Monetary Authority of Singapore's Project Ubin.¹⁸

"As a blockchain-based, open-industry platform, Partior can effectively address these frictions." explains Lim Soon Chong. "Their solution enables global interoperability with RTP, RTGS and CBDC networks; fewer intermediaries; faster settlement with 24/7 infrastructure availability, certainty and finality with prevalidation and atomic settlement; and end-toend visibility on a permissioned ledger." Participating FIs are connected to Partior's single distributed ledger, allowing real-time settlement of wholesale banking payments in multiple currencies, 24/7. During its first pilot test with participating banks, Partior recorded an end-to-end settlement speed achieved for Singapore and US dollars in under 120 seconds.¹⁹

Unlike Bitcoin, Partior uses a permissioned ledger where only vetted members can validate transactions. Access to the ledger guarantees higher transparency and security for transactions, giving authorised users visibility on everything except private keys.

Member banks can take advantage of Partior's growing selection of real-time services. The company's functionality roadmap will eventually cover multi-currency clearing and settlement; FX Payment vs Payment (PvP); FX Intraday Swaps; and Delivery vs Payment (DvP).

Partior is designed as an open industry platform, allowing banks throughout the world to join the network and complement their existing real-time, non-24/7 local currency payment/RTGS systems through Partior's always-on blockchain-based service.

In due course, the British pound sterling, Euro, Australian dollar, Japanese yen, Chinese renminbi and Hong Kong dollar will join Partior's present currency line-up of Singapore and US dollars.²⁰

DBS believes that interoperability across *multiple technology platforms* and networks is essential to increasing the relevance of the financial industry for both high-value and lowvalue payment contexts. In turn, this will promote the efficiency and availability of clearing and settlements. We thus continue to leverage blockchain technology even as we increase our linkages to instant settlement infrastructures," explains Lim Soon Chong.



Financialisation of everything: tokenised digital assets & cryptocurrencies

The way the world invests in assets may be fundamentally transformed, with the advent of tokenisation. This refers to the process of converting an underlying asset into a digital "token" that acts as its proxy.

Beyond securitising financial assets like cash, equities and debt, tokens allow real assets securitisation and trading – artefacts, works of art, commodities and real estate, even people.²¹

Now that so much can be tokenised and traded, retail investors get greater access to wider investment pools. Digital tokens allow both fractional ownership and proof-of-ownership of assets. Fractionalisation, in particular, can be achieved at a far greater degree compared to conventional securitisation, encouraging investors to purchase smaller denominations in digital token form, opening participation to a broader investor base.²²

A broad variety of token-based financial service applications are cropping up. Texas, USA-based RedSwan CRE is implementing tokenisation in commercial real estate to allow individual investors to purchase fractions of a tokenised property.²³ And in 2021, DBS launched its S\$15 million DBS Digital Bond, the bank's first Security Token Offering (STO) traded in smaller lots of S\$10,000 (traditional wholesale bonds typically require investment and trading amounts in multiples of S\$250,000).²⁴

Cryptocurrencies like Bitcoin and Ethereum are also tokens: parts of permissionless blockchains that incentivise behaviour in an authority-less environment. Bitcoins, for instance, are awarded to "miners" who do the taxing computational labour necessary to maintain the blockchain.²⁵ Once in circulation, cryptocurrencies don't rely on a central issuing or regulating authority; their transactions are recorded on the blockchain. The absence of an external regulating asset (like gold, or a central bank's holdings) can make cryptocurrencies particularly volatile; witness the "crypto winter" in the first half of 2022 that wiped out almost US\$2 trillion in value.²⁶ Before the crypto winter, cryptocurrencies global market capitalisation peaked at US\$2.8 trillion in November 2021, compared to its value of approximately US\$960 billion as of September 2022.²⁷

Moreover, while cryptocurrencies like Bitcoin do a great job of circumventing resistance like government bans and hostile hacker attacks, they're not well-suited for the day-to-day payments transactions most consumers take for granted, like buying groceries or paying for rent.²⁸ The Bitcoin network cannot handle large amounts of transaction data in a short period; Bitcoin processes 4.6 transactions per second on average, compared to Visa's 1,700. This "blockchain scalability problem" restricts many cryptocurrencies' potential for widespread adoption.²⁹

Future payment systems will need to account for cryptocurrencies' scalability and volatility issues before widespread adoption can be implemented. This may mean further development of "layer 2" payment protocols like the Lightning Network (LN), which enables fast crypto micropayments between participating nodes over a peer-to-peer system.³⁰ This is a key challenge to overcome before FIs can provide fungibility and process transactions for these digital assets alongside commercial money.





Fiat Club: stablecoins & central bank digital currencies

Cryptocurrencies' volatility issues have led to a different type of digital asset, sharing cryptocurrencies' instantaneous settlement times, programmable nature and low transaction costs. This comes with the added advantage of having their value pegged to an external reference asset, such as a fiat currency like the US dollar.

These "stablecoins" have been growing in prominence and credibility; Tether and USD Coin (both pegged to the United States dollar) recently passed US\$50 billion³¹ and US\$25 billion³² in market cap, respectively.

Central bank digital currencies (CBDCs) take this one step further, being digital payment instruments issued by a country's central bank. The central bank itself guarantees the CBDC, which can then be used for a variety of purposes in the national interest – providing easier access to money for unbanked and underbanked populations, thus promoting financial inclusion³³; introducing competition and resilience in the domestic payments market, and increasing efficiency in payments and lowering transaction costs.³⁴ Today, the majority of the world's major economies are now exploring CBDCs. "Over the last few years, proof-of-concept work for payments with central bank digital currencies have also taken off with over 85% of central banks globally looking at blockchain-based solutions like MAS' Project Ubin³⁵, Project Jasper in Canada and BIS' Project Dunbar," explains Rachel Chew.





As stablecoins and CBDCs gain wider adoption, future payment systems should guarantee stablecoins and CBDCs' interoperability with commercial money. These digital assets will likely complement commercial money and other assets in the ecosystem – for instance, a stablecoin can be a digital safe haven during market distress. A U.S. Federal Reserve study found that counter-cyclical demand for stablecoins in the secondary market helped ameliorate risks of redemption runs during broader market downturns.³⁶

In this new paradigm, FIs will need to reconsider their customary role as commercial money distributors. Both stablecoins and CBDCs can be distributed directly to end users; for instance, CBDC payments can be initiated directly from one customer's wallet to another wallet.

In China's digital yuan (e-CNY), the central bank issues the digital currency wallet directly and enforces interoperability between financial institutions. Depending on the acceptance network of a given CBDC, it may also circumvent the traditional system of crossborder payments.³⁷ In a CBDC-based financial ecosystem, FIs can transform beyond their traditional intermediary roles to provide a different kind of service to their clients. Their unique perspective, experience, and compliance can help them build CBDC-oriented business models. They can take on a customer-facing role, not just helping in the distribution of CBDCs but also using the digital currency's capabilities as the basis for new, proprietary financial products and services.³⁸



Money in a new world: GameFi & Metaverse

Today's technology has advanced to the point where we don't only get powerful new payment systems, but immersive new virtual realities to use them in, too.

GameFi has upended the gaming industry, creating a whole new category of games that offer tangible economic incentives to players. These play-to-earn (P2E) blockchain games allow players to earn cryptocurrency and NFT (nonfungible token) rewards by completing tasks, competing with other players, and levelling up throughout the game.

While points and rewards are not new in gaming, GameFi allows players to transfer their gaming items beyond the game to NFT marketplaces and crypto exchanges, converting game points into actual crypto and NFT holdings.³⁹

The P2E game Axie Infinity was the first to deploy the GameFi model with moderate success. It puts a spin on the "Pokemon" monster-fighting concept by allowing players to collect and breed "Axies", which are linked to NFTs that confer ownership.⁴⁰ Players can trade Axies for real money on the Axie Infinity marketplace. Data from Cryptoslam.io shows that Axie Infinity made over US\$4.08 billion in all-time sales, covering 2.29 million NFT owners and 17.03 million transactions to date.⁴¹

The Metaverse extends both the playable arena and the opportunities for payments and exchange. As a concept, the Metaverse is rather ill-defined: it's not about any specific technology or platform but refers to a broad shift in how users interact with technology.⁴²



For payments purposes, we can define the Metaverse as "the realm of computergenerated, networked extended reality – [embracing] all aspects of augmented reality, mixed reality and virtual reality (AR, MR and VR)."⁴³

In the Metaverse, human users can interact with each other and with automated entities, with the immersivity depending on available devices and bandwidth. Smartphones can facilitate AR apps that combine real and virtual to perform specific tasks, like shopping.⁴⁴ Laptops and virtual-reality headsets can generate more immersive domains for gaming and fantasy purposes, or mirror worlds duplicating real-life environments.⁴⁵

Gartner predicts that by 2026, 25% of people will spend at least an hour a day in the Metaverse for work, shopping, education, social and/or entertainment. By that time, 30% of organisations will also have Metaverse-specific products and services ready for use.⁴⁶

As with GameFi, blockchain enables payments in the Metaverse, allowing currencies to cross the real and virtual barriers. It offers the possibility of transferring real-world currency, cryptocurrencies, and even tokenised assets like NFTs into a digital wallet on the Metaverse which you can use to buy, barter or trade.⁴⁷

These transactions represent opportunities that tomorrow's payments systems can exploit – future users should take for granted that their currency can be easily transferable to both GameFI and Metaverse ecosystems so that they can purchase both online and real-life items in their immersive realities. FIs can help users navigate the risks inherent in Metaverse and GameFi payments. For instance, they can use their resources to determine legal property rights for assets in the Metaverse, where traditional legal concepts such as owning and selling assets are far more complicated than in the physical universe.⁴⁸

Over time, FIs can help develop Metaversespecific services, such as embedded payments services for wallet owners; customer engagement like GameFi-based loyalty rewards; and investing services for Metaverse-based projects.

These services may need to work across different virtual worlds – for example, making a digital wallet whose credit is as good in Decentraland as it is in Horizon Worlds. At present, most iterations of the Metaverse use proprietary currencies and wallets. Interoperability will need either an open Metaverse operating system or a third-party marketplace that bridges the gap between worlds, neither of which seem forthcoming at the moment.⁴⁹



Conclusion

As corporate decision-makers reimagine their business models to take advantage of today's ongoing shift to digital payments and assets, FIs must adjust and offer value to their clients in this changing ecosystem.

To be sure, FIs will continue to play a significant role in payments. Digital asset investors still seek the perceived safety and risk mitigation that FIs can provide. According to a recent Visa Survey, 85% of crypto owners say they would be interested in buying cryptocurrency from their bank, and 39% of crypto owners plan to switch to a bank that offers crypto products within the next 12 months.⁵⁰ This shows that customers will continue to seek out the security and stability FIs operating in the digital asset space offer. Stability in any financial space is a meaningful value proposition.

These new digital assets have brought unseen levels of fragmentation and diversity to the realm of global payments. Rather than viewing this as a threat, FIs may benefit from looking into the emerging opportunities offered by new payments technologies to expand and add to the value they offer to their clients.

"At DBS, we embrace the threat to the existing business model, and see blockchain and distributed ledger technology as a technological advance and tool that provides a great opportunity for us to re-examine parts of our business models that can be further revolutionised," Mark Troutman tells us.

"There is more demand from corporates to facilitate payments in crypto currencies, in addition to traditional fiat currencies," explains Sriram Muthukrishnan. "Financial intermediaries and payment providers will need to be nimbler to offer an integrated suite of blockchain-based and traditional products to enable this."



As they master the new payments infrastructure, FIs will be in a better position to sustain market relevance in the long term and expand into other financial services. Examples include offering foreign exchange and providing personal financing management and financial planning, capturing income streams from new business models.

This is not a task to be taken on alone. Industry partnership is key to addressing the evolving needs of the financial ecosystem; collaboration is necessary for innovations to take root. FIs can connect with like-minded partners that complement their existing products with expertise in building and implementing blockchain-enabled payment systems.

"It is important to remember that we should not be seeking to offer blockchain-based solutions to address problems that can just as easily be solved by existing technologies and solutions," explains Rachel Chew. "At DBS, we demonstrate this by working with clients to understand the use cases and build solutions that can be developed, scaled and monetised to solve real problems associated with frictions in performing financial transactions."

As an early adopter of blockchain technology, DBS has extensive experience in creating value from blockchain-based payments; its strong team, sophisticated systems and knowledge base can effectively catalyse its financial industry partners' adoption of future payments systems.

"Through our journey in implementing the different blockchain solutions, we have developed new business and governance models and lines of business, built custody and market infrastructures for digital assets, and brought to launch a payments proposition powered by blockchain," Sriram Muthukrishnan explains.

DBS is excited to engage with the financial community to discover newly-available opportunities in payments, and advance together.





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