



HONG KONG MONETARY AUTHORITY
香港金融管理局



PROJECT ENSEMBLE

Project Ensemble Business Use Case Report



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Foreword

Tokenisation, through the use of new technologies such as distributed ledger technology ("DLT"), has the potential to transform finance. Tokenisation is not merely a technological leap, but a pivotal enhancement to financial market infrastructure ("FMI"), where bonds settle in seconds, trade finance is facilitated by real time data, and cross border investments can flow seamlessly. It can improve efficiency, reduce costs, increase transparency, and broaden investor access to markets and asset classes that were previously inaccessible.

Central banks, through their pivotal roles in relation to monetary systems and payments infrastructure, are well positioned to lay the foundations for the tokenisation ecosystem. The Hong Kong Monetary Authority ("HKMA") embarked on Project Ensemble in 2024 to support and advance the development of the tokenisation ecosystem of Hong Kong. Alongside the SFC, the HKMA has been working together with the financial and technology industries to develop the interoperability standards underpinning Hong Kong's tokenisation ecosystem, within which money and assets can move seamlessly.

Project Ensemble seeks to foster the development of Hong Kong's tokenisation ecosystem and facilitate seamless interbank settlement powered by tokenised deposits and assets, leveraging Hong Kong's central bank money. In August 2024, the HKMA launched the Project Ensemble Sandbox ("Sandbox") to enable industry pioneers to test comprehensive end-to-end use cases for settling digital asset transactions using experimental tokenised deposits.

This report details the experiences gained from piloting these use cases, which, together with the development of interoperability standards, will lay the foundation for future collaborations among stakeholders to commercialise and scale the adoption of tokenisation.

Hong Kong has made remarkable progress in advancing its tokenisation ecosystem. The experiences gained from the Sandbox reinforce our confidence that the next generation FMI is capable of supporting a highly efficient ecosystem providing 24/7 access with real-time or atomic settlement across different digital and real assets. To build on this momentum, a highly collaborative approach will continue to be adopted. As captured in our theme "Tokenising Together, Today and Tomorrow", the HKMA will continue to foster a vibrant tokenisation ecosystem to deepen the integration of tokenised assets and digital money, maintaining Hong Kong at the forefront of digital finance.

Howard Lee

Deputy Chief Executive

Hong Kong Monetary Authority

Foreword

Tokenisation, enabled by DLT, represents an evolution in the modernisation of FMI. By enhancing how securities are recorded, transferred, and settled, tokenisation can strengthen market efficiency, transparency, and resilience. In this context, tokenisation is best understood not as the creation of new financial products, but as an infrastructure enhancement that strengthens the functioning of existing financial markets.

As Hong Kong's securities regulator, the SFC has been closely engaged with the HKMA and industry participants in examining the regulatory issues and safeguards relating to tokenised securities. This work builds on the SFC's regulatory guidance, issued in 2023, for intermediaries engaging in tokenised securities-related activities and on tokenisation of SFC-authorised investment products, anchored in the principle of "same business, same risks, same rules".

The Project Ensemble use cases underscore the importance of supporting market infrastructure in delivering the efficiency benefits of tokenisation and achieving scale. For instance, the experiences documented in this report indicate that meaningful improvements in issuance, trading, and settlement processes of tokenised securities depend critically on the availability of tokenised money, orderly and transparent secondary market arrangements, and their integration with the existing operational workflow. These observations have informed the SFC's ongoing work, including the exploratory work on secondary market trading of tokenised products.

Project Ensemble demonstrates the value of close regulatory collaboration in advancing infrastructure modernisation. Through participation in the Sandbox and sustained dialogue with industry, the SFC has gained practical insights into how tokenised securities can operate within a regulated environment alongside evolving settlement arrangements. Looking ahead, the SFC will continue to engage constructively with the HKMA and industry participants to support the responsible development of FMI as tokenisation progresses.

Dr Eric Yip
Executive Director
Intermediaries
Securities and Futures Commission

Introduction

The financial industry's burgeoning interest in tokenisation stems from a convergence of technological feasibility and compelling commercial projections. This view is supported by forecasts which anticipate significant growth in the medium term. McKinsey & Company projects that the total market capitalisation of tokenised financial assets could reach approximately US\$ 2 trillion by 2030¹. Another report issued by the Boston Consulting Group in partnership with Ripple estimates that the tokenised real-world assets ("RWAs") market could expand thirty-fold, reaching US\$ 19 trillion by 2033². These projections highlight the potential rising importance of tokenisation in the financial market, calling for involvement from all relevant stakeholders to work together to modernise the existing FMI.

Interest in tokenisation has accelerated markedly in recent years. Evolving technology, supportive regulation, and successful early pilots have collectively enabled firms to shift gear from experimentation to commercialisation. Leading international financial institutions have deployed functional tokenisation platforms that not only serve their own clients, but more importantly, attract broader industry partners to use their platforms, thereby creating network effects. Leveraging these platforms, financial services providers are now offering innovative products such as tokenised bonds and tokenised funds.

While progress and innovations made in "asset" tokenisation has been remarkable, this needs to be combined with the tokenisation of "money" to create an inclusive ecosystem, enabling individuals, corporates, and financial institutions to access and trade assets, whenever they want and wherever they are. In March 2024, the HKMA announced the commencement of Project Ensemble to foster the development of the tokenisation ecosystem in Hong Kong. Project Ensemble seeks to explore innovative FMI to facilitate seamless interbank settlement of tokenised money using tokenised central bank money, e-HKD, with an initial focus on tokenised deposits, a digital representation of commercial bank deposits issued by commercial banks and made available to the general public. It forms a key part of the HKMA's broader portfolio of initiatives to facilitate the development of the tokenisation market. With the e-HKD as the foundation, tokenised deposits can power transactions involving tokenised assets, unlocking new opportunities for optimisation and innovation in the tokenisation era.

Since its launch, Project Ensemble has been grounded in two foundational pillars: (1) a spirit of collaboration and co-creation domestically and internationally; and (2) the Sandbox.



McKinsey & Company projects that the total market capitalisation of tokenised financial assets could reach

approximately US\$ **2** trillion by 2030¹.

The tokenised real-world assets ("RWAs") market could expand thirty-fold, reaching

US\$ **19** trillion by 2033².

1. <https://www.mckinsey.com/industries/financial-services/our-insights/from-ripples-to-waves-the-transformational-power-of-tokenizing-assets>
2. <https://ripple.com/lp/bcg-tokenization-report/>



Collaboration and co-creation

Project Ensemble encompasses collaborations across the public and private sectors. In particular, the Project Ensemble Architecture Community ("Architecture Community") was established in May 2024³, with the SFC as a key partner and member alongside the HKMA. The Architecture Community brings together local and international banks, key players in the digital asset industry, technology companies, and academia and international organisations⁴. The Architecture Community aims to establish industry-wide standards to support interoperability among the e-HKD, tokenised money, and tokenised assets, while also assisting in the design and implementation of the Sandbox to facilitate further research and testing of tokenisation use cases.

On the international front, during 2024, the HKMA announced bilateral collaborations with three other central banks, namely the Banque de France ("BDF"), the Banco Central do Brasil ("BCB"), and the Bank of Thailand ("BOT") to jointly explore cross-border tokenisation use cases, and the opportunities and interoperability between FMIs across jurisdictions.

The diverse array of participants and partnerships showcases the vibrancy of Hong Kong's tokenisation ecosystem, which is well-positioned to provide the necessary services to successfully tokenise financial services.



The Sandbox

In August 2024, the HKMA launched the Sandbox to facilitate the full life cycle of a tokenised asset transaction. The Sandbox enables industry participants to explore and experiment with tokenisation use cases involving digital assets, tokenised deposits, and e-HKD in a controlled environment. Through the experiments in the Sandbox, the HKMA aims to leverage the design protocols of the use cases as important inputs in setting common industry benchmarks in tokenisation, while also fostering innovative use cases that address real-world challenges through tokenisation.

This report summarises the use cases that were experimented in the Sandbox, the key learnings and takeaways arising therefrom, and to set out the way forward for Project Ensemble to further embrace and shape a robust and forward-looking tokenisation ecosystem for Hong Kong.

3. <https://www.hkma.gov.hk/eng/news-and-media/press-releases/2024/05/20240507-4/>
4. <https://www.hkma.gov.hk/eng/news-and-media/press-releases/2023/10/20231020-5/>

The Sandbox and use case experiments

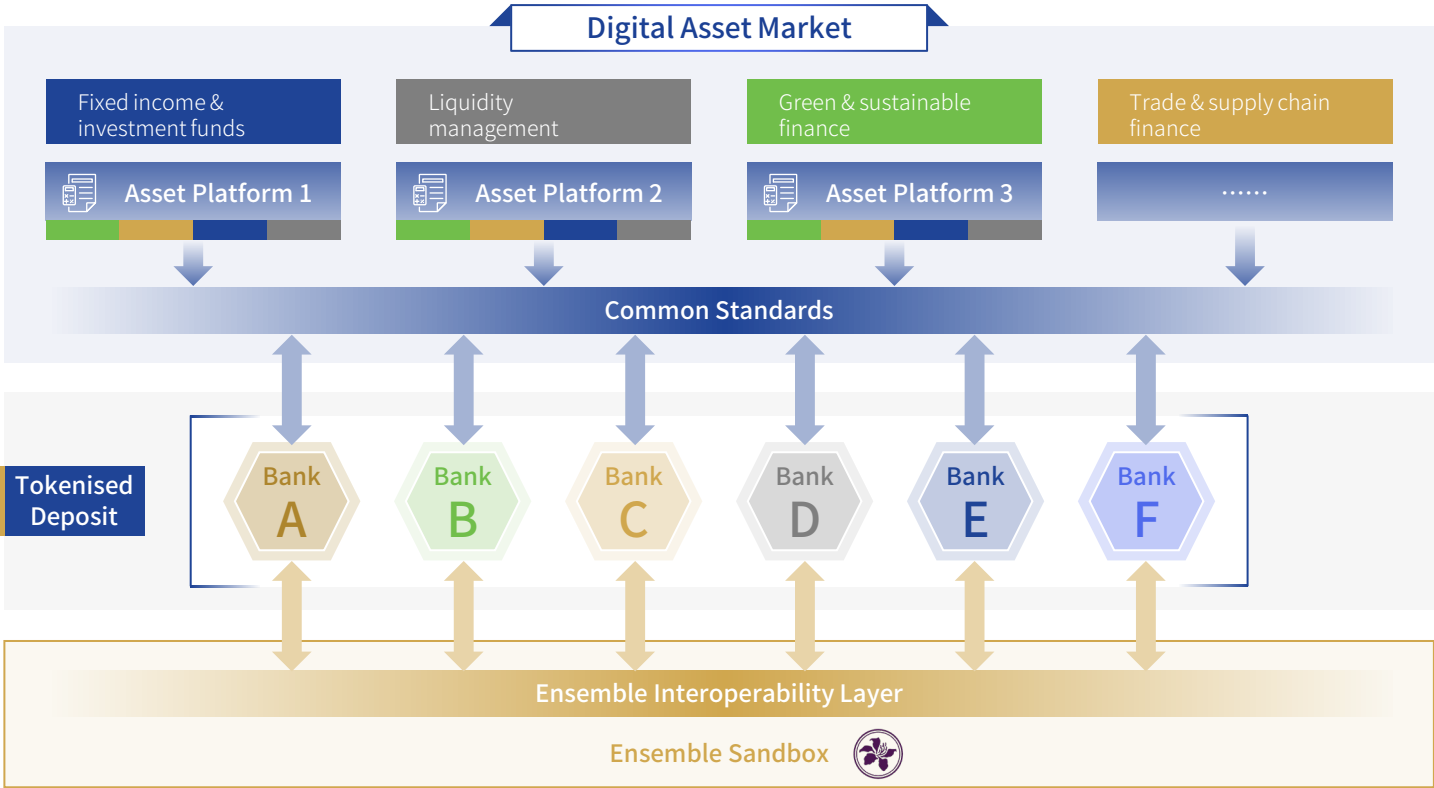
Focus and design of the Sandbox

Innovation, market competition, and most importantly customer usage will ultimately determine which forms of digital money will gain traction across different use cases. While a central bank digital currency ("CBDC") has its unique features and therefore specific use cases, tokenised deposits and regulated stablecoins have their respective features which in turn may be attractive to different end-users (see Box 1 below for a comparison of the various forms of digital money).

Box 1: Different forms of digital money			
 Emerging Forms of Money	 Issuers	 Backing	 Features
CBDCs	Central banking institutions	Central bank's statutory authority	• Direct liability of the issuing central bank and is denominated in the domestic unit of account; and
Tokenised deposits	Commercial banks	Issuing bank's balance sheet fulfilling the appropriate liquidity coverage ratio	• Backed on a one-to-one basis by corresponding off-chain commercial bank money; and • Typically account-based.
Regulated Stablecoins	Licensed institutions	Fully backed by a segregated pool of high-quality and highly liquid reserve assets	• Purports to maintain a stable value with reference to: (i) a single asset (e.g. fiat currency) or (ii) a pool or basket of assets; and • Token-based.

The key objective of the Sandbox is to experiment with use cases to evaluate how they can facilitate interbank settlement of experimental tokenised deposits issued by commercial banks. Through experimenting with a broad range of use cases, participants can experience atomic interbank settlement for tokenised deposit and settlement for tokenised assets on a delivery versus payment ("DvP") basis.

The above is achieved through two key design features of the Sandbox, namely connectivity to the HKD settlement system and an orchestration mechanism that renders interoperability between settlement instructions across different tokenised platforms.



Selection of use cases

Digital tokens, especially when combined with programmability, are highly adaptable and scalable for most interbank settlement of tokenised deposit and DvP settlement processes. These features enable the industry to improve in **speed** and **space**.



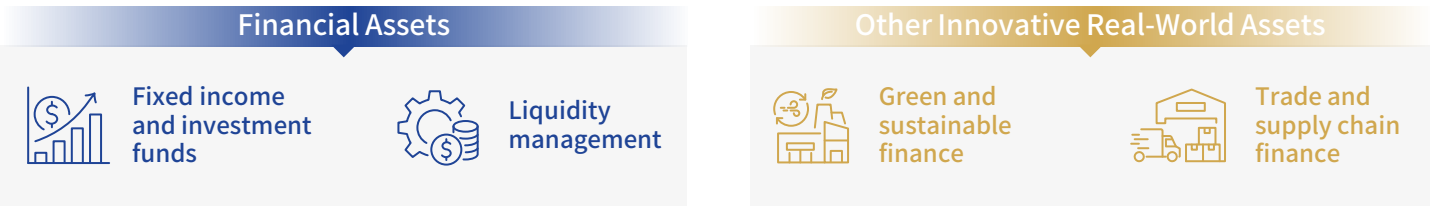
Speed

While modern day settlement systems⁵ have for many years allowed transfer of money on a real-time basis, significant delays remain inevitable for interbank settlement of tokenised deposit and DvP settlements due to the need for counterparties to process, agree, and confirm the transaction and settlement details. Tokenisation is uniquely positioned to address this challenge. As such, the majority of the use cases focus on the efficiency gains associated with faster and more streamlined DvP settlement as compared to conventional financial assets, i.e. **fixed income instruments and investment funds**⁶ and under different scenarios (e.g. primary issuance and secondary market trading of tokenised money market funds ("TMMF")). Another theme that rides on speed improvement is the use of tokenised deposits to enhance the efficiency of **repurchase agreements** ("repo") and **treasury management**.



Space

Unlike speed, which means completing the same tasks faster, space refers to enabling new approaches previously not feasible and thereby opening up new opportunities. There are two themes in the use cases that focus on expanding the space in **green and sustainable finance** and **trade and supply chain financing** respectively.



5. Real Time Gross Settlement ("RTGS") launched in 1996 enables settlement of money on a real-time basis. FPS was launched in 2018 to further enable real-time settlement of money on a 24/7 basis.

6. Listed securities are currently not included in the scope of Project Ensemble as they are subject to listing rules with very specific settlement mechanisms which cannot be enhanced without fundamental and structural changes.

Summary of experimented use cases

Theme	Category	Use Case Participant Groups
 Fixed Income and Investment Funds	Bond	The Hongkong and Shanghai Banking Corporation Limited Hang Seng Bank Limited
		Standard Chartered Bank (HK) Limited
	Fund	Bank of China (Hong Kong) Limited BOCHK Asset Management Limited BOCI-Prudential Trustee Limited
		BlackRock Asset Management North Asia Limited Hang Seng Bank Limited The Hongkong and Shanghai Banking Corporation Limited
		HashKey Group Bosera Asset Management (International) Co., Limited China Construction Bank (Asia) Corporation Limited Cinda International Asset Management Limited Fubon Bank (Hong Kong) Limited Joint Electronic Teller Services Limited
		China Asset Management (Hong Kong) Limited Fosun Wealth International Holdings Limited Hang Seng Bank Limited OSL Digital Securities Limited The Hongkong and Shanghai Banking Corporation Limited Solomon JFZ (Asia) Holdings Limited
		Franklin Templeton OSL Digital Securities Limited The Hongkong and Shanghai Banking Corporation Limited
	Repo	The Hongkong and Shanghai Banking Corporation Limited
	Treasury Management	Ant International The Hongkong and Shanghai Banking Corporation Limited Standard Chartered Bank (HK) Limited
 Liquidity Management		

Theme	Category	Use Case Participant Groups
 Green and Sustainable Finance	Electric vehicle ("EV") charging Station	Ant Digital Technologies Longshine Group The Hongkong and Shanghai Banking Corporation Limited Hang Seng Bank Limited
		Evident Limited China Resources Longdation Company Limited The Hongkong and Shanghai Banking Corporation Limited Hang Seng Bank Limited
		Evident Limited Linked Charge Cyberport The Hongkong and Shanghai Banking Corporation Limited Hang Seng Bank Limited
 Trade and Supply Chain Finance	Carbon Credits	Hong Kong Exchanges and Clearing Limited Innoblock Northern Trust The Hong Kong and China Gas Company Limited
	Supply Chain Finance	ARTA Global Markets Limited Emali Limited
	Trade Payment and Finance	Ant Digital Technologies Global Shipping Business Network Limited The Hongkong and Shanghai Banking Corporation Limited Hang Seng Bank Limited
		Standard Chartered Bank (HK) Limited

In summary, the Sandbox experiment has provided great value in enabling the Sandbox participants to visualise the vast opportunities that tokenisation presents, while enabling the identification of key challenges and roadblocks to realising this potential to the fullest extent. The next section sets out details of the challenges and roadblocks, as well as the steps that have been taken and can be taken to address these challenges. Before examining the specific use cases, this section sets out further context by highlighting the following feedback from the Sandbox participants:

01

Cross-platform orchestration model is technically viable

All use cases invariably confirm the technical viability of riding on the Ensemble Interoperability Layer to enable cross-institution or cross-platform interbank settlement of tokenised deposit and DvP settlement. Specifically, by confirming the availability of both cash (i.e. tokenised deposits) and assets (e.g. tokenised funds) and then orchestrating their simultaneous exchange, DvP settlement can be completed in seconds.

02

Cross-platform transactions with DvP settlement can substantially lower processing costs

The use case results suggest that cross-platform transactions that ride on highly automated end-to-end processes with DvP settlement can significantly reduce processing costs through the elimination of manual processes including trade capture, confirmation, and reconciliation. While the estimated magnitude of such cost-savings varies across different use cases and is subject to initial set-up costs and several assumptions, in particular the volume of tokenised transactions in the long run, most if not all use case experiments have ranked this factor as one of the key strategic advantages of tokenisation.

03

Shortened transaction cycles improve both investors' experience and financial institutions' liquidity management

Apart from lower transaction costs, the time required from the initiation of a trade to the final interbank settlement of tokenised deposit or DvP settlement can be shortened significantly. This not only enhances investor experience but, more importantly, enables highly efficient utilisation of surplus funds – a critical need for large international corporations. For financial institutions, their own liquidity management can be greatly enhanced, as will be illustrated through the repo use case.

04

Tokenisation enables automated transaction flows with DvP settlement across a broad range of use cases

Through testing various use cases, participants have gained confidence that the composability of tokenisation allows tailored end-to-end automated processes for different tokenised products. A case in point is tokenised repo, which comprise not only one but two legs of DvP settlement in a single transaction, i.e. the initial sale and the subsequent buyback of securities. This showcased the significant potential of using tokenised assets as collateral. Another interesting example is electronic bills of lading ("eBL"), as the ability to separate "document ownership" and "title ownership" can enable more streamlined processes. A further innovative application that can be adopted widely is the use of smart contracts to automatically link the performance of an underlying asset (e.g. revenue from charging stations) to the return of a tokenised investment in that underlying asset (e.g. interest income).

05

Tokenisation unlocks great business opportunities

Participants across all four themes recognise the significant business potential presented by tokenisation. A common benefit identified across the four themes is the opportunity arising from facilitating access to assets that are currently only accessible by institutional investors or with a high minimum investment amount (e.g. tokenised RWAs). While participants generally do not see this feature driving major opportunities in the short term, some regard it as an important feature in the longer term. It should be noted that depending on the specific facts and circumstances, the offering of tokenised interests in real world or digital assets may fall within the offer of investments regime under the securities laws⁷.

7. For example, tokenisation of fractionalised interests in real world or digital assets such as artwork may still amount to a collective investment scheme or structured products under securities laws. See also, Circular on intermediaries engaging in tokenised securities-related activities issued in November 2023 (<https://apps.sfc.hk/edistributionWeb/gateway/EN/circular/doc?refNo=23EC52>)

Deep dive of the use cases

A. Speed: use of tokenised deposits to improve efficiency of fixed income and investment funds

Interests in the theme "fixed income and investment funds" were particularly strong among the Sandbox participants, especially in the space of tokenised investment funds. With the policy support from the SFC, various fund managers have already launched or are planning to launch tokenised products such as TMMF. Nevertheless, they are mostly using fiat money for the cash leg and the settlement is not on a DvP basis. Moreover, the subscription and redemption processes involve multiple steps – order placement, order routing, order execution, and order confirmation. These processes include fund managers, fund distributors, transfer agents, fund administrators, trustees, and banks. While each participant has their respective mandate, all must record, confirm, and / or reconcile investors' subscription and redemption orders, resulting in substantial manual processes, operating costs, and a longer transaction cycle⁸.

Box 2: The SFC's efforts in regulating tokenised securities-related activities and tokenisation of SFC-authorized investment products

In view of the growing interest from financial institutions to tokenise traditional financial instruments, the SFC issued two circulars on 2 November 2023 and one circular on 20 April 2026 to provide guidance to intermediaries and product providers on the regulatory expectations related to tokenised securities-related activities and investment products. In particular:



- The first circular articulates the new risks arising from tokenisation and provides the key considerations for engaging in tokenised securities-related activities, covering activities related to the issuance of tokenised securities, dealing in, advising on or managing portfolios investing in tokenised securities⁹.



- The second circular sets out the requirements under which the SFC would consider allowing tokenisation of investment products authorised by the SFC for offering to the public in Hong Kong, covering product providers' responsibilities, staff competence, proper record keeping, cybersecurity risk mitigation measures, business contingency plan and disclosure¹⁰.



- The SFC has rolled out its regulatory guidance on secondary trading of tokenised SFC-authorized investment products in April 2026. This circular aims to address the liquidity and investor protection issues of secondary trading of tokenised open-ended funds, particularly trading beyond regular business hours. The measures cover safeguards relating to fair pricing, orderly trading, liquidity provision and disclosure. The initial batch of products is expected to focus on tokenised money market funds¹¹.

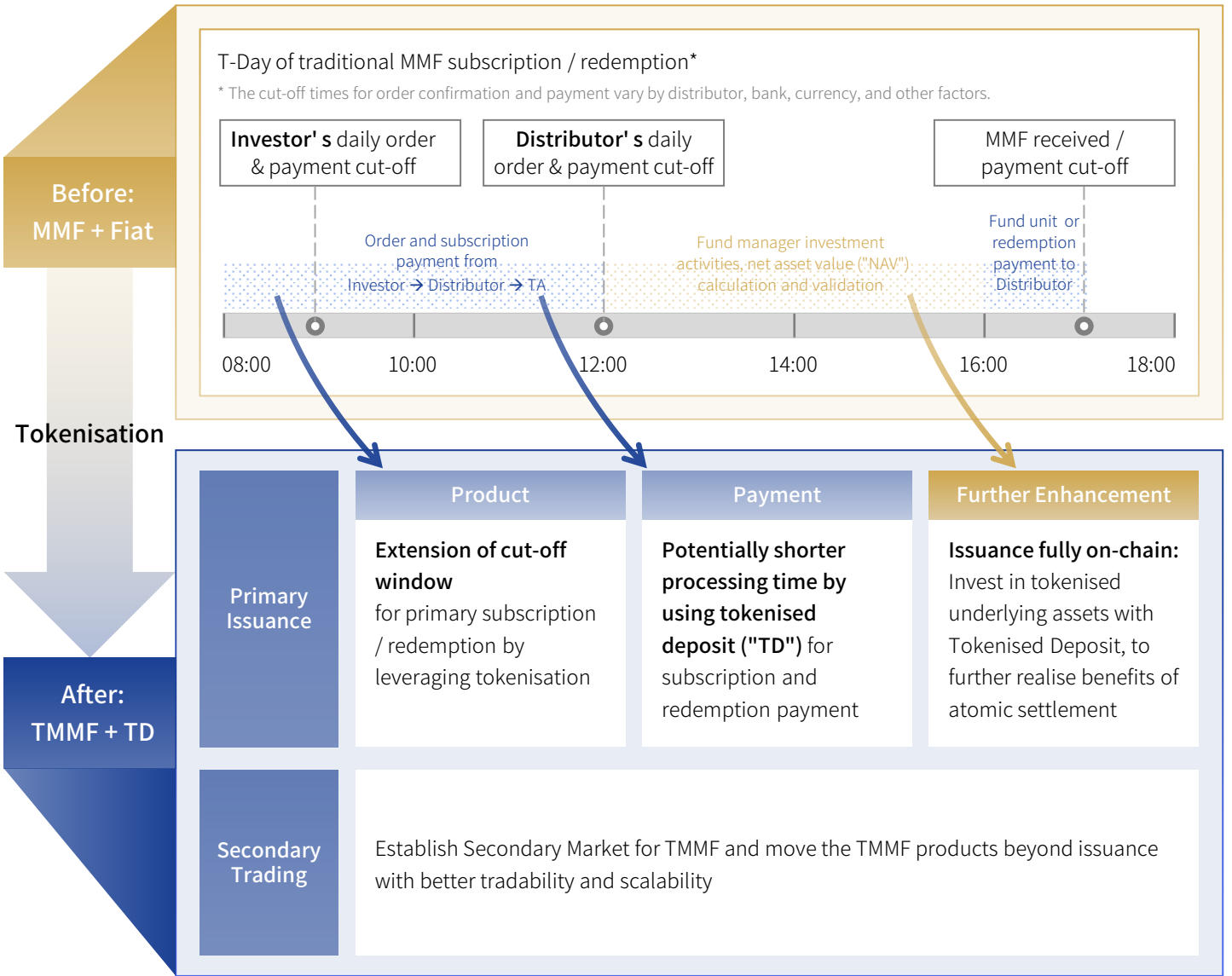
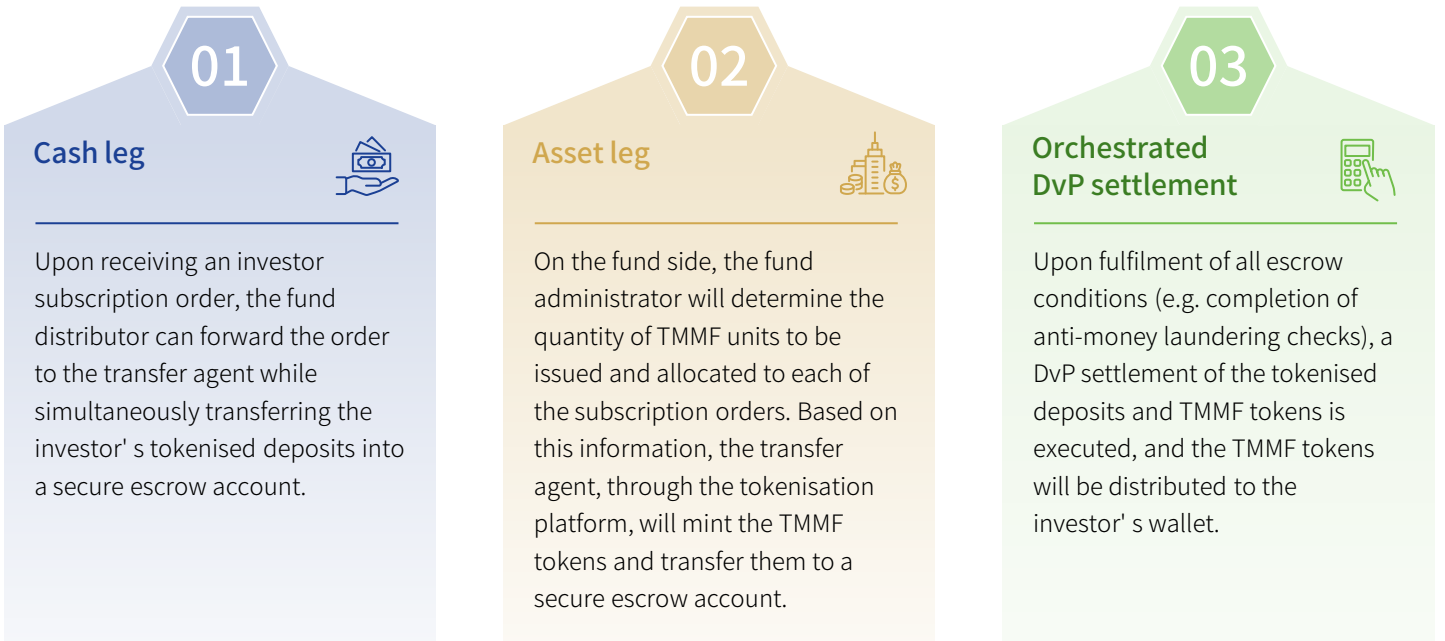
8. The time required between the placement of a subscription and the confirmation of final settlement may vary among different fund houses and banks. In some cases, the recording of transactions is not always timely, consequently investors may only see the subscribed funds recorded in their investment account several days after the value date.

9. <https://apps.sfc.hk/edistributionWeb/api/circular/list-content?refNo=23EC52&lang=EN>

10. <https://apps.sfc.hk/edistributionWeb/api/circular/list-content/circular/doc?lang=EN&refNo=23EC53>

11. <https://apps.sfc.hk/edistributionWeb/gateway/EN/circular/doc?refNo=26EC23>

With tokenisation, smart contracts could optimise the processes and facilitate real-time and on-chain updates of order status. This could largely eliminate the need for manual coordination across parties. For instance, three key steps are typically involved:



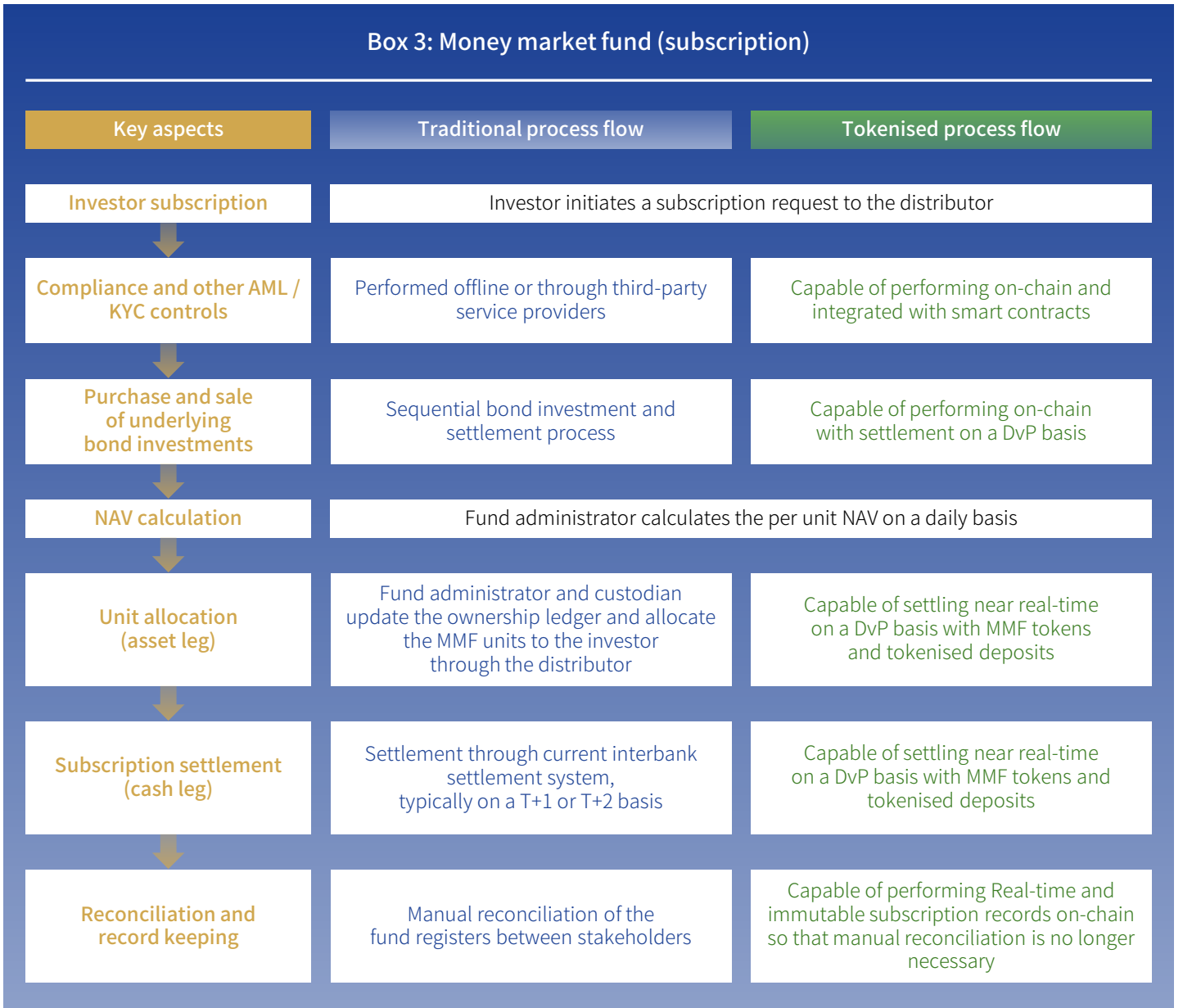
(i) Fund

The subscription and redemption processes in the primary market have been experimented in the:

- Use case by BOCHK, BOCHK AMC and BOCI-PT;
- Use case by ChinaAMC(HK), HSBC, Hang Seng, Fosun Wealth Holdings, OSL, and Solomon; and
- Use case by Franklin Templeton, HSBC, and OSL.



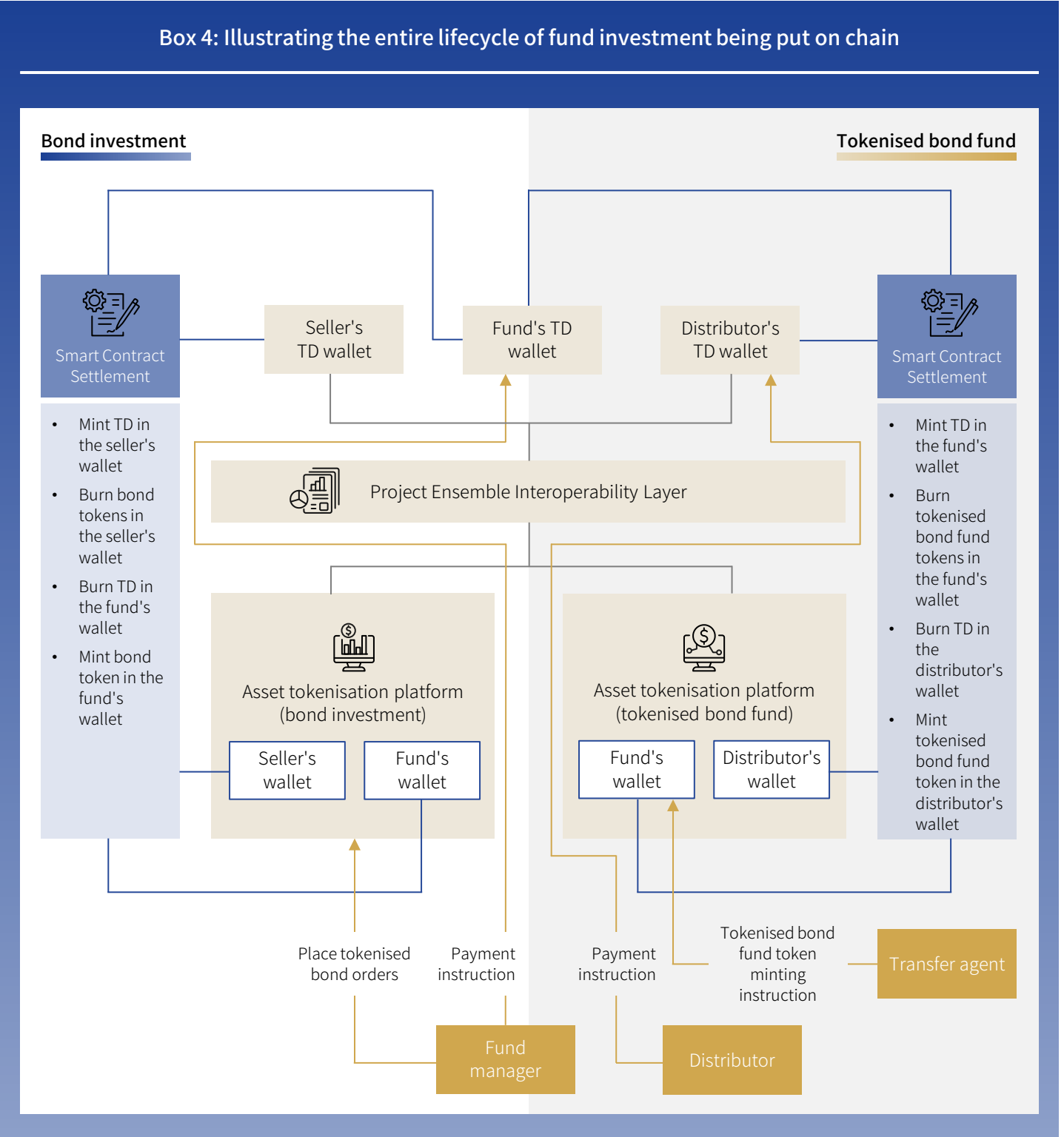
The **use case by ChinaAMC(HK), HSBC, Hang Seng, Fosun Wealth Holdings, OSL, and Solomon**, experimented with the streamlined processes of issuance, distribution, and redemption of a TMMF using tokenised deposits to address frictions in the traditional fund management processes that incur operational costs and lengthen settlement cycles. In the **use case by Franklin Templeton, HSBC, and OSL**, it experimented similar subscription and redemption processes that highlighted the potential to shorten the settlement cycle from T+1 to T+0, alongside other benefits associated with TMMF. The **use case by BOCHK, BOCHK AMC and BOCI-PT** experimented TMMF-related processes of the subscription and redemption of the primary market to include corporate customer trading.



In addition, building on the basic tokenisation model described above, different use cases have experimented with the adoption of tokenised deposits in various scenarios:

■ Extension of tokenisation to investment funds' underlying assets

The **use case by BlackRock, HSBC, and Hang Seng** explored a scenario in which a tokenised bond fund invests in tokenised bonds using tokenised deposits to facilitate real-time DvP settlement not only in the stage of fund subscription / redemption, but also in the subsequent stage of purchases / sales of the fund's underlying assets. The experiment results suggest that, by extending the use of tokenised deposits to enable real-time DvP settlement downstream, the entire lifecycle of fund investment can be put on chain to further enhance efficiency.



■ Secondary market

Most unlisted investment funds are limited to transacting once daily through primary market transactions¹². This requires the confirmation of a fund's NAV for determining the exact number of fund units to be subscribed or the exact dollar amount to be received from fund redemption. As a result, while tokenisation renders real-time DvP settlement possible, the aspiration of extending the transaction frequency and window (eventually to 24/7 basis) would require the fund's official NAV to be determined multiple times a day. This involves a substantial remodelling of existing fund operations and will need credible valuation inputs regarding the fund's underlying assets outside normal business hours.

The **use case by HashKey, Bosera, Cinda, CCBA, Fubon, and JETCO** further explored the use of tokenised deposits as the payment tokens for different types of primary and secondary market transactions of tokenised assets. These included: (i) subscription and redemption of the tokenised asset in the primary market; (ii) over-the-counter DvP trading; and (iii) DvP transactions for tokenised assets through central limit order book on trading platform.

Through exploring these use cases, participants identified practical benefits to settling TMMF using tokenised deposits, such as shortening settlement times and reduction of manual processes via DvP settlements, which enhances the attractiveness of using TMMF as a treasury management product.

Box 5: Benefits to be gained from tokenised funds under Project Ensemble	
Key benefit	Description
Significantly shorter transaction cycle, enabling better liquidity management	The adoption of DvP settlement using smart contracts can significantly shorten the transaction cycle so investors can benefit from more efficient use of surplus funds.
Reduce credit risks	The use of tokenised deposits, empowered by the Ensemble Interoperability Layer, has rendered DvP settlement feasible, reducing the transaction chain, wait time and consequently credit risk.
Transparency of transactions	Blockchain-based infrastructure offers clear audit trails for financial transactions; this enables distributors and investors to access and evaluate real-time information related to asset ownerships and their transaction histories.
Cost reduction	◆ Maintenance of legacy information technology systems Traditional fund management relies on multiple separate legacy fund systems which require significant maintenance costs. Transitioning to blockchain-based infrastructure can achieve longer-term operational cost savings related to system updates.
	◆ Validation of internal and external records Traditional fund processes require manual reconciliations across multiple financial intermediaries. For example, the subscription and redemption processes for money market funds ("MMF") involve significant manual effort, such as performing manual validations among the fund managers, transfer agents, custodians and fund administrators in relation to subscription and redemption requests, circulating confirmations of settlements, and maintaining the MMF share registers. These manual efforts and associated costs could be eliminated or streamlined through tokenisation.

12. Daily subscriptions and redemptions based on the daily confirmation of a fund's NAV is a typical arrangement for open-ended funds, whereby new fund units are created to meet fund subscription orders and redeemed fund units are cancelled.

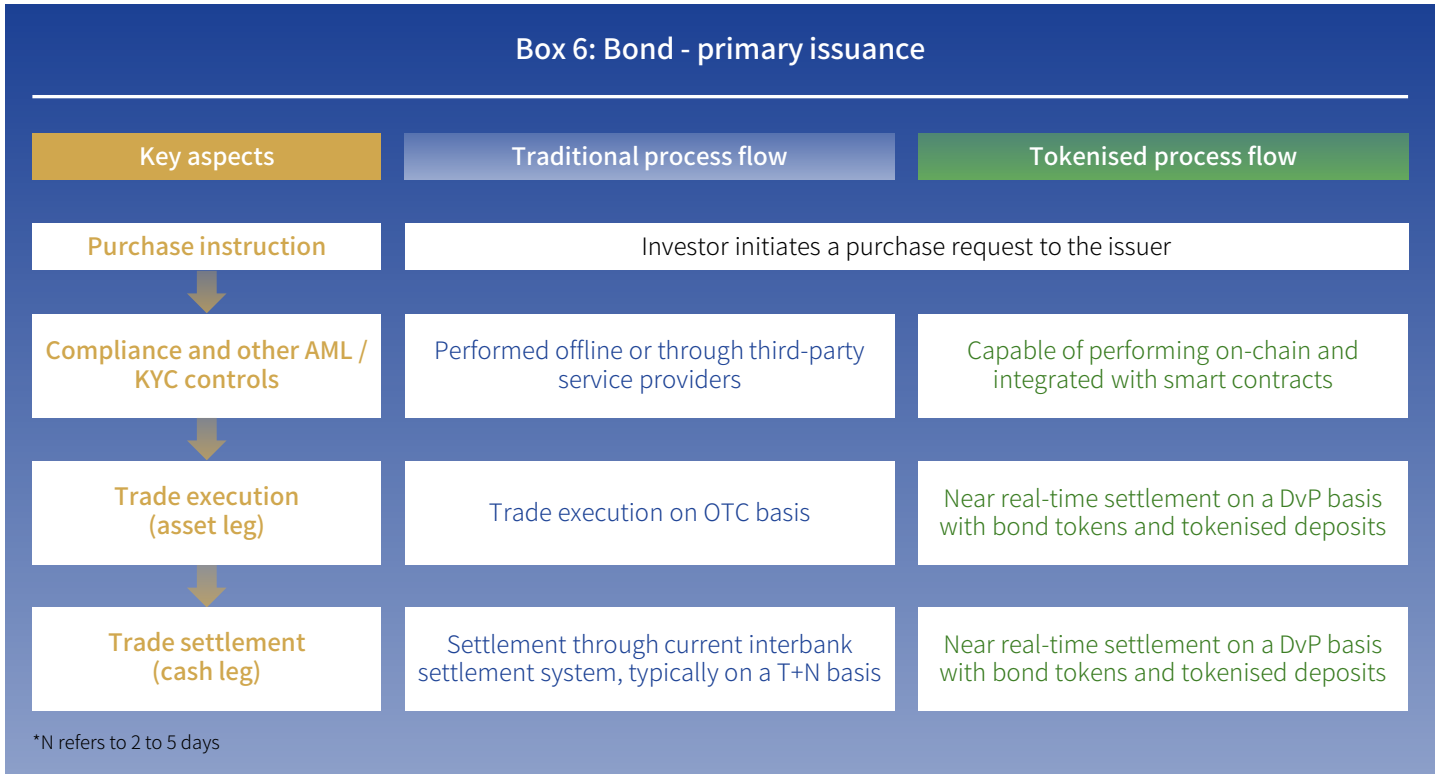
(ii) Bond

The purchase and sale of investment bonds were the subject of the:

- Use case by HSBC and Hang Seng, and
- Use case by SCB.



In the **use case by HSBC and Hang Seng**, it leveraged its in-house DLT-based platform to support atomic DvP settlement of digital bonds with tokenised deposits. Through leveraging the Ensemble Interoperability Layer, direct participants would be able to use their cash account and tokenised deposits at their selected bank. The **use case by SCB** showcased smart contract-enabled DvP settlement that reduces settlement delays and credit risk, facilitating more effective risk management in bond settlement lifecycle. These use cases substantiate the viability of using tokenised deposits to settle tokenised bonds.



B. Speed: use of tokenised deposits as a game changer for liquidity management

The second theme of the Sandbox explores how tokenisation can enable financial institutions and large corporations to drive greater efficiencies in liquidity management. Two use cases were experimented, using tokenised deposits as the payment tokens to facilitate: (i) the provision of DLT-based repo facilities; and (ii) intra-group treasury management.

As noted above, tokenisation can shorten the transaction cycle of primary investment fund subscription and redemption from days to hours. This "speed" is attractive to both investors and financial services providers, as they can benefit from more efficient use of investable money in the form of tokenised deposits as compared to fiat money. "Speed" can also be a game changer in the context of liquidity management, as we shall see in the **use case by HSBC**.

(i) Provision of DLT-based repo facilities

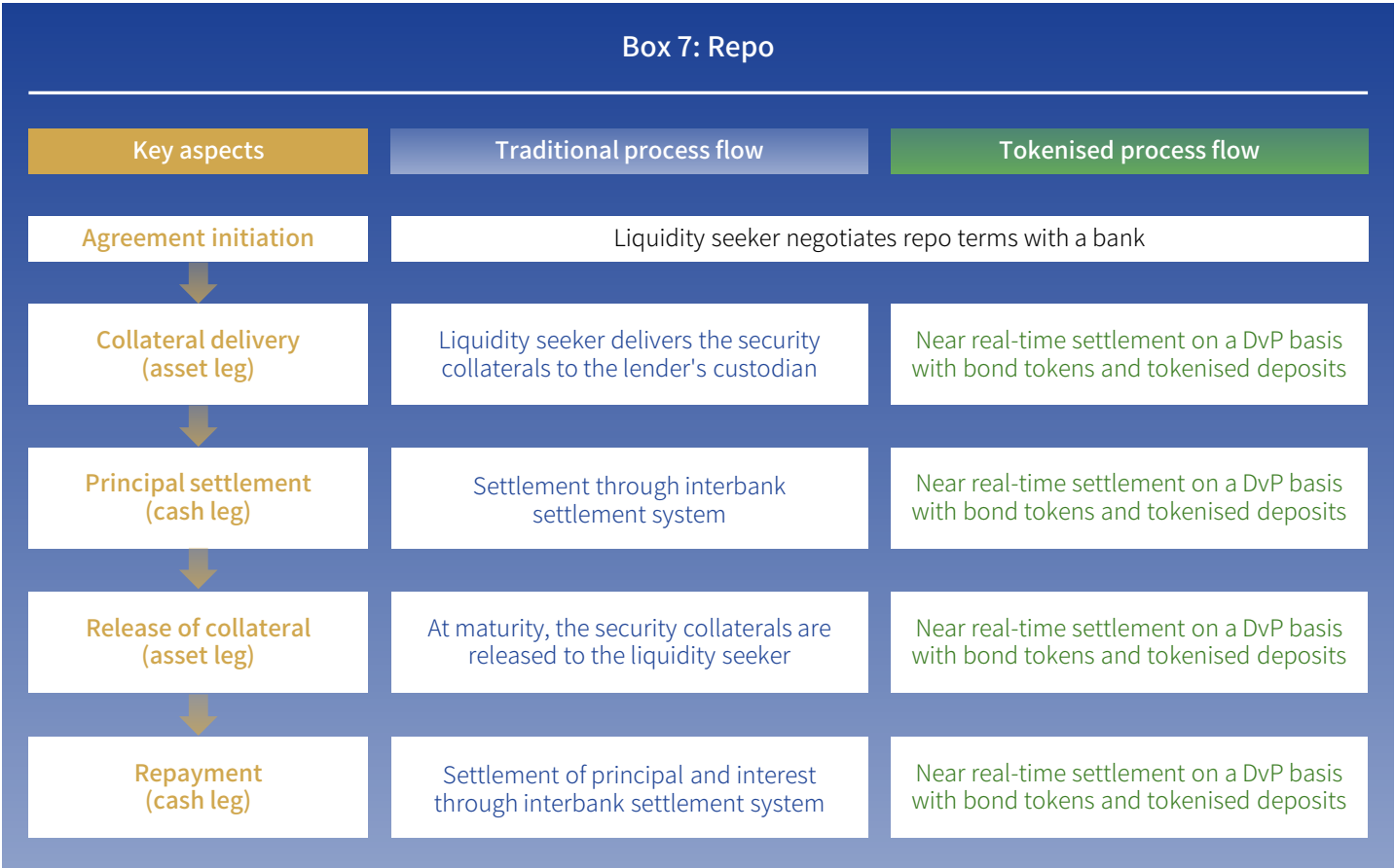
A repo is a contract in which Party A agrees to sell securities to Party B at a specified price with a commitment to buy the securities back at a later date at another specified price. Through this arrangement, Party B is effectively lending money to Party A on a secured basis. By tokenising its securities to be used as collaterals, Party A can obtain secured funding in split seconds.

For a financial institution or a large corporation, the key objective of liquidity management is ensuring that sufficient funds are immediately available to meet its payment obligations, of which the size and timing can be quite uncertain.

Traditionally, firms need to maintain a minimum level of surplus funds to guard against unexpected payment needs. This represents a significant inefficiency in liquidity management. The **use case by HSBC** demonstrates a theoretical and end-to-end application of DLT in the repo market to source intra-day liquidity for precise time intervals. At trade inception, the operating model utilises an atomic DVP swap of tokenised bonds and tokenised deposits between cash lender and cash borrower. At maturity, a synchronised reverse atomic swap is executed, with the cash borrower returning principal plus accrued interest.

Intra-day repos can provide banks with a flexible, efficient, and secure mechanism to manage liquidity, meet margin calls, and reduce firms' liquidity buffers, enabling a more dynamic and responsive liquidity management strategy. In the absence of such a facility, firms may be exposed to liquidity pressures arising from settlement mismatches between expected cash receipts and payments, particularly during periods of market stress. By leveraging DLT-based repo as an intra-day liquidity management tool, firms can meet payment obligations promptly, mitigating the risk of systemic payment delays and enhancing overall market resilience.

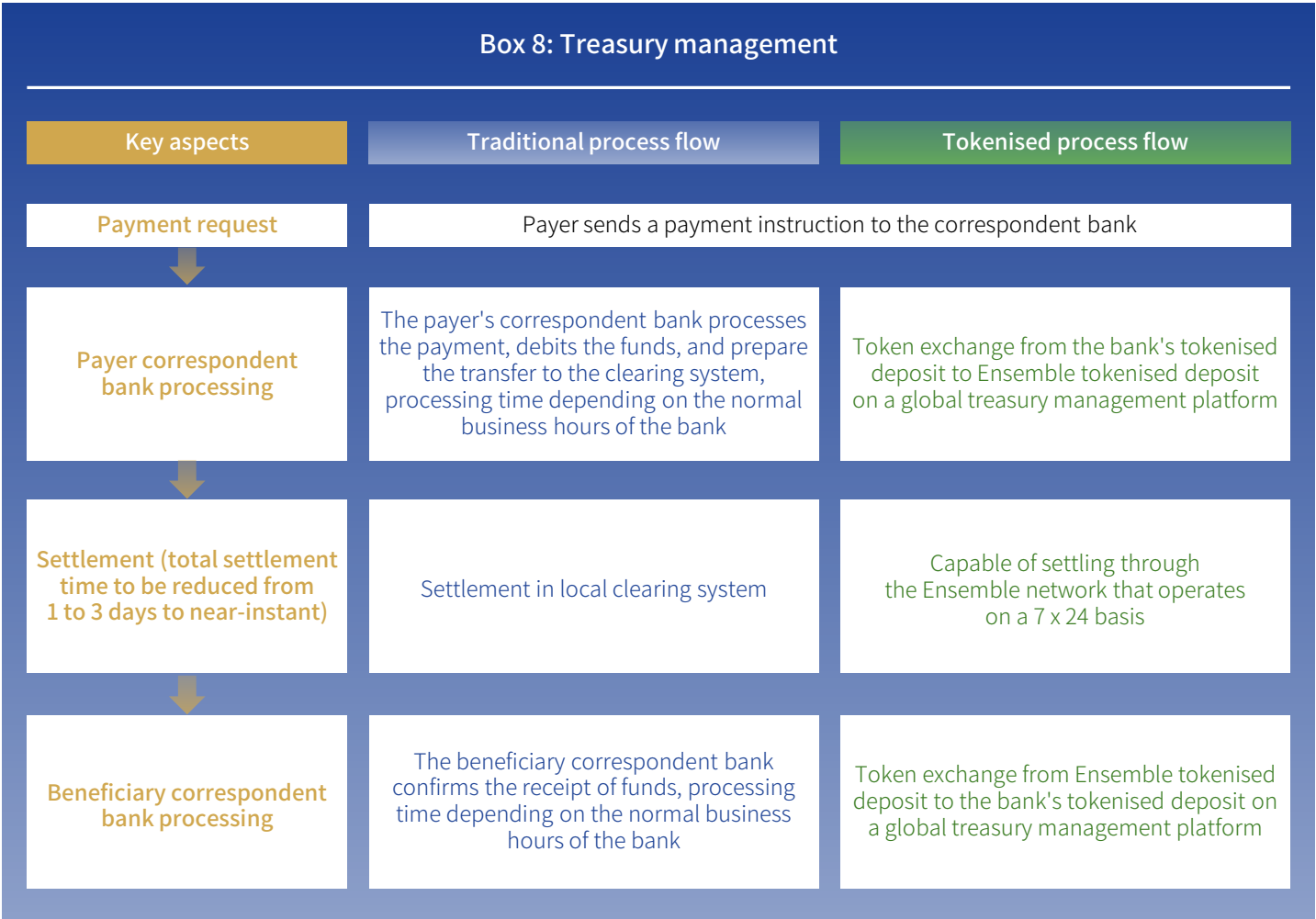
This use case highlights clear operational benefits including the precision of settlement, increased operational efficiency and improved transparency. The adoption of DLT-enabled repo represents a significant step forward in modernising liquidity management and safeguarding financial stability against systemic risk.



(ii) Intra-group treasury management

Corporates face increasing competitive pressure to operate on a 24/7 basis, which will require treasury infrastructure that enables real-time payments. Seamless cross-border treasury management services are also critical for corporates with an international presence. However, traditional treasury services offered by banks often fall short in meeting such needs, particularly where there are long settlement times for international payments due to the different settlement windows across jurisdictions.

In the **use case by Ant International, HSBC, and SCB**, the participants explored real-time intra-group fund transfers between banks in Hong Kong and between Hong Kong and another jurisdiction. The key benefit, from developing a next-generation treasury management solution that leverages blockchain and tokenised deposits, is to manage intra-group, cross-border and cross-bank fund movements, and enabling real-time treasury operations and transparency, which ultimately enhances the user experience for small and medium-size enterprises ("SMEs").



C. Space: use of tokenised deposits to broaden investment opportunities in green and sustainable finance

The use cases under the theme "green and sustainable finance" explored one of the key potential benefits of tokenisation – enabling innovative fund-raising methods for non-financial investments¹³, thereby expanding the investment space and fund-raising space for good business propositions, including green and sustainable finance. For the financial sector, this can open up new business opportunities and revenue streams.

Through the use of tokenisation, the risks and monitoring costs associated with the investment in non-financial assets can be significantly lowered. Smart contracts can enable a construct of highly composable, transparent, and immutable settlement rules, combined with blockchain technology that enables effective tracking of performance of the underlying non-financial assets as well as better auditability of the relevant transaction records. These features can boost investor confidence, rendering it possible to wrap specific non-financial assets into financial assets and giving investors more choice to diversify their investment portfolios.

13. In this report, non-financial investments refer to RWAs or business propositions that involve significant capital investments. Conventionally, investors have had limited interest in these investment opportunities for reasons such as difficulties in monitoring their performances.

(i) EV charging station

A few use cases featured EV charging stations as the income generating assets:

- Use case by EVIDENT, CR Longdation, HSBC, and Hang Seng;
- Use case by EVIDENT, LinkedCharge, Cyberport, HSBC, and Hang Seng; and
- Use case by Ant DT, LongShine, HSBC, and Hang Seng.



The first two use cases above experimented with wrapping income generating assets into different financial constructs, tailored to the specific state of the underlying income producing assets. They showcased how tokenisation can be applied across the lifecycle of infrastructure development, from initial construction to ongoing expansion:

State of EV charging station	Structure of the financial wrapper
Early-Stage Development: Yet to be built, and expecting to generate operating income in the near future	Income sharing token with a payoff structure similar to equities, offering a variable income. This structure suits investors who are willing to accept a riskier but higher rate of return, given the potential upside of future income streams.
Operational Infrastructure: In operation with predictable operating income	Fixed-rate token ¹⁴ with a payoff structure similar to bonds, offering a fixed coupon rate that will be covered by the projected operating income. This structure suits investors who prefer stable income.

The **use case by Ant DT, LongShine, HSBC, and Hang Seng**, on the other hand, explored wrapping income generated from assets into RWA tokens. Specifically, the use case experimented with the issuance and settlement of tokens collateralised by revenue streams from EV charging stations, with the goal of addressing the operational inefficiencies in the traditional private asset market, including the manual processes handled by the middle and back-office staff related to income distribution and settlement.

14. In this use case, the token is in the form of a tokenised structured note rather than a tokenised ownership of the underlying assets. While this may have the benefits of more flexible specification of the associated legal rights (e.g. claim on income derived from the underlying assets or a claim on proceeds upon sale of the underlying assets as collateral), other forms of tokenisation ownership may be possible.

The most prominent benefits observed from the use cases are:

- 01

Alternative structures for financial innovation

Subject to any applicable laws and regulations, tokenised products with alternative structures have the potential to take the form of innovative financial instruments such as shares or bonds.
- 02

Live operational data feeds

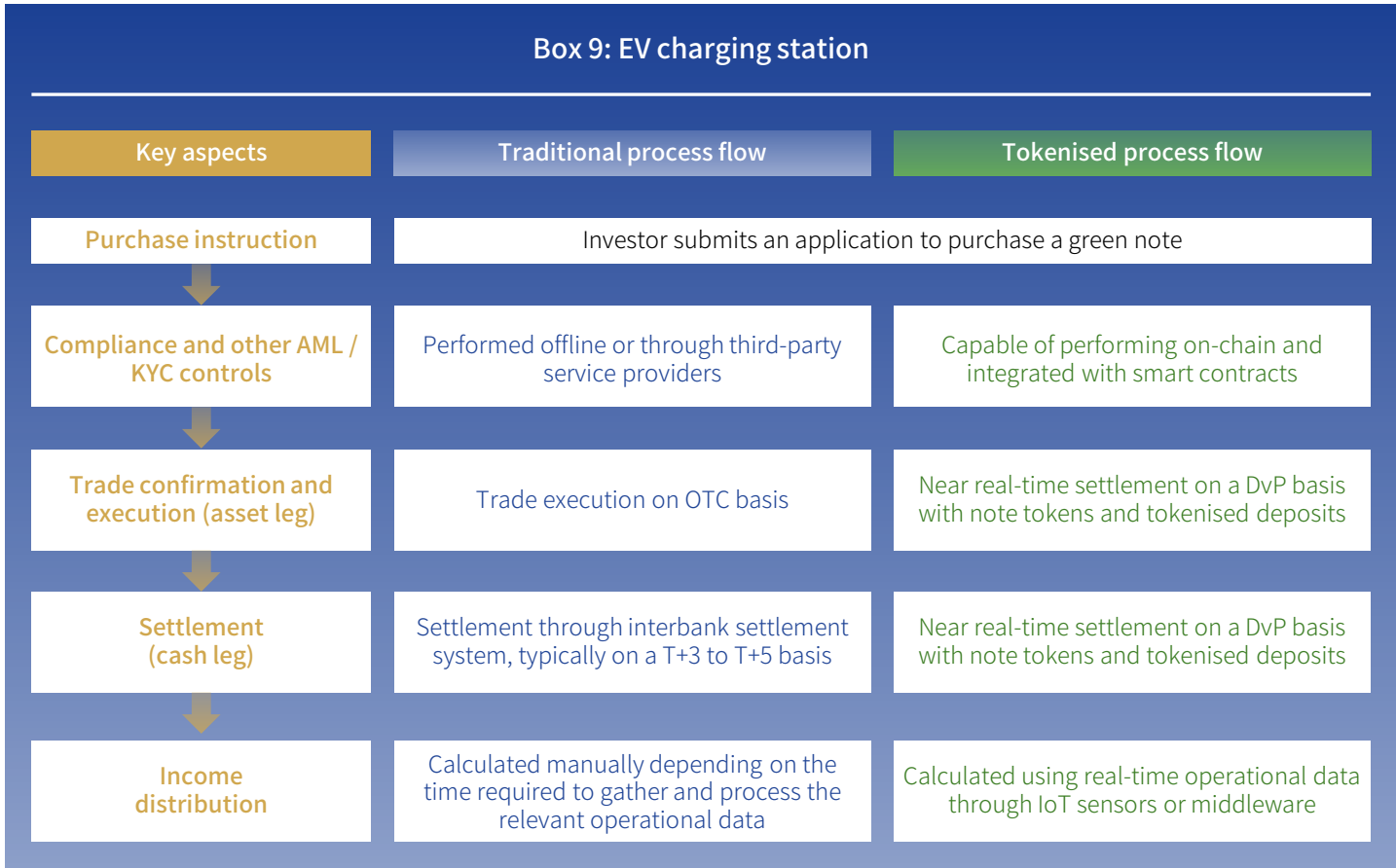
Non-financial assets with measurable outputs or usage parameters (e.g. energy output of the charging stations) seem well-suited to be wrapped into financial assets. Through tokenisation and blockchain technology, the tokens representing the claim of income generated from assets can come with live operational data feeds, providing investors with timely information on the performance of the underlying assets and facilitating timely evaluation of their value.
- 03

Unlocking of locational constraints

The ability to provide reliable and live operational data feeds will cause the location of RWAs to become less of a constraint in monitoring performance. This will significantly expand the space of investment opportunities for investors, and likewise an expansion of funding sources for attractive business propositions with real-time measurable performance parameters.
- 04

Risk controls

Smart contracts can be tailored for specific risk control purposes. While not fully simulated in the use case experiment, it is envisaged that smart contracts could be set to release funds raised for investing in tokenised RWAs in phases, and only upon successful verification of defined milestones.



(ii) Carbon credits

One green and sustainable finance use case explored the tokenisation of carbon credits - an area closely linked to the development of voluntary carbon market infrastructure.

In October 2022, Hong Kong Exchanges and Clearing Limited ("HKEX") launched Core Climate, a one-stop integrated platform that connects capital with climate-related products and opportunities in Hong Kong, the Chinese Mainland, Asia, and beyond. The platform supports the trading of voluntary carbon credits and other environmental instruments to help advance the global transition to net zero¹⁵.

Carbon trading involves multiple stakeholders, including buyers, intermediaries, sellers, a carbon marketplace, and a carbon credit registry. In conventional cross-border transactions, fund flows can incur administrative costs and delays.

In addition, manual operations between marketplaces, registries and banks can create operational friction and market inefficiencies. In the **use case by HKEX, Innoblock, Northern Trust, and Towngas**, the issuance, trading, settlement, and retirement of tokenised carbon credits were tested using tokenised deposits. The use case delivered the following benefits:

01

Settlement for cross-border trades

Removing the administrative burden and reducing the delays associated with foreign-exchange processing in the prevailing market convention for cross-border transactions.

02

Lower operational cost and risk

Application Programming Interface ("API") integration allows data exchange and transaction updates across the marketplace, registry and banks, reducing manual touchpoints, streamlining workflows, and improving scalability for cross-border carbon credit transactions.

03

Broader participant reach

Participants that already hold tokenised deposits can trade carbon credits seamlessly on the marketplace without setting up pre-funded accounts in multiple currencies, making the platform more attractive to institutions active in digital-asset or wholesale CBDC environments.

15. https://www.hkex.com.hk/News/News-Release/2022/221028news?sc_lang=en

Box 10: Carbon credits

Key aspects	Traditional process flow	Tokenised process flow
Issuance	Carbon credits are issued to the project proponent's ("PP") account in the digital registry after the project has been certified by carbon crediting standards.	Carbon credits are issued to the PP's wallet after certification under the relevant carbon crediting standard.
Pre-transaction	Settlement currency is set by the seller: buyers must convert funds from their domestic currency into the currency accepted by the seller. The seller must transfer the carbon credits to the marketplace registry account before the transaction is executed.	For cross-border trades, buyers need only to transact in local currency. Carbon credits are transferred from the seller to the marketplace registry account before trade execution.
Settlement	Settlement currency is set by the buyer: sellers receive payment in the buyer's domestic currency and then convert the proceeds into their own preferred currency. On the registry, a manual update is required to reflect the transfer of credits from the seller's sub-account to the buyer's sub-account under the marketplace account.	Sellers receive proceeds directly in local currency with no need to reconvert from a foreign currency. On the registry, carbon credits are automatically reflected in the buyer's sub-account under the marketplace account.
Retirement	The registry retires the carbon credits.	The registry sends burn instructions to the marketplace wallet and confirms the token has been burned.

D. Space: use of tokenised deposits to improve the transparency of trade and supply finance

The last theme is tokenisation of "trade and supply finance", which is traditionally handled by banks, with an emerging trend of investments made by private credit funds.

(i) Supply chain finance

The **use case by ARTA and Emali** developed a Web3 marketplace with two key features: (i) enhanced transparency and audit trails for loan ownership and transaction history; and (ii) a marketplace in which investors can buy and sell loan tokens representing the loans.

This use case explored the viability of using tokenised deposits to conduct DvP compliant and atomic settlements on a Web3 platform. This integration enables investors to evaluate specific construction supply chain financing opportunities and make capital-efficient investments, while simultaneously providing an additional source of funding for suppliers.

(ii) Trade payment and finance¹⁶

In the **use case by SCB**, the specific credit asset for tokenisation is a post-acceptance clean bill under letter of credit negotiation. Traditionally, after the investor accepts the quote from the originator, the originator will book the trade asset discounting, and the investor bank will send payment to the originator bank. Through the use of tokenisation, the exchange of tokenised deposits and trade assets is carried out via the Ensemble Interoperability Layer. This use case demonstrated real-time DvP settlement that enables T+0 processing time, thereby improving liquidity of the capital and assets.

In the **use case by Ant DT, GSBN, HSBC and Hang Seng**, the credit asset is the bill of lading ("BL"). BL is a critical document in this context. It serves as documentary proof of the legal title of the goods in transit, which facilitates the smooth transfer of goods and payments between the shipper and consignee. Traditional BLs in paper form are subject to risks such as loss, forgery and delays. Alongside technology advancements, eBL has been introduced to mitigate many of these risks by enabling faster, more secure, and traceable document transfers.

With tokenised deposits, and by tokenising the eBL, the whole processes can be streamlined. One key feature of tokenised eBL is the ability to separate title ownership and document ownership. In the use case, the carrier which issued the eBL sends the tokenised eBL to the consignee as "title owner", while simultaneously sending it to the custodian as "document owner". Upon arrival of goods, the involved parties perform the final DvP settlement, in which the consignee makes payment using tokenised deposits and the custodian releases the "document ownership". As such, the consignee can ascertain its title ownership at an early stage, while the shipper can ascertain the transfer of goods only upon receipt of payment. In addition to significant streamlining of the end-to-end processes, which means significantly reduced operating costs, tokenisation also offers the general benefits of allowing 24/7 settlement, which is particularly important as cross border trades often involve different time zones.

16. The HKSAR Government ("Government") has announced in the 2025-26 Budget Speech that it will make reference to the Model Law on Electronic Transferable Records advocated by the United Nations Commission on International Trade Law and consider legislative amendments to facilitate digitalisation of trade documents in Hong Kong.



Box 11: Trade finance

Key aspects	Traditional process flow	Tokenised process flow
Import and export agreement initiation	The shipper and the consignee sign an import and export agreement	
Issuance of letter of credit	The consignee applies for a letter of credit, the issuing bank issues the letter of credit to the notifying bank, and the notifying bank gives the letter of credit to the shipper's bank	
Issuance of bill of lading	The carrier issues a paper original bill of lading upon the shipper consigning the goods	The carrier issues eBL upon the shipper consigning the goods
Transfer of bill of lading	The shipper couriers the paper original bill of lading to the notifying bank	The shipper transfers the title to the consignee and custody to the notifying bank
Interbank settlement (cash leg)	The consignee's bank completes fund transfer through SWIFT typically on a T+2 to T+3 basis	Near real-time payment through the Ensemble network using the consignee's tokenised deposits
Settlement by the consignee (cash leg)	The consignee repays the loan of the consignee's bank	
Delivery of the goods (asset leg)	The carrier delivers the goods to the consignee's terminal	

Key challenges identified and efforts made to navigate through them

The successful results observed across all the use cases have shown that tokenisation is highly adaptive and widely applicable to digital finance. However, technology viability only provides one necessary pre-condition for its successful adoption and the following five key challenges were identified.

Key challenges	Observation
 Automated end-to-end processes are required to better realise the potential of tokenisation	In certain use cases, it was observed that real-time and straight-through processing is difficult to achieve in the early stages of tokenisation. A case in point is TMMF, where certain workflows are still processed off-chain or manually, including the calculation of NAV and reconciliations of the unit register among the distributors, fund managers, and fund administrators. This challenge will limit the ability to realise the full potential of tokenisation in two key aspects:  Speed: There remains a notable time lag between trade initiation and trade settlement. Automating the end-to-end workflow closes this gap and enables near real-time settlement.  Cost: A potentially significant upfront investment would be needed to overhaul the existing off-chain and manual workflows, which would in turn make the cost-benefit proposition of tokenisation less attractive.
 A more developed tokenisation eco-system with more accessible tokenised securities and products is needed for tokenisation to realise its potential speed and efficiency gains	The "speed" benefit brought about by tokenisation is akin to that of a road. Their full benefits can only be realised when one can drive on a fully developed network of roads to get to their final destination. The theme of tokenised funds is a clear case in point. It has shown that benefits in terms of speed and efficiency can be significantly increased when the entire process is moved on-chain - from "fund subscription / redemption" to "portfolio investments". However, this is only possible when the tokenisation eco-system is fully developed, and where tokenised securities and products are abundant and easily accessible, e.g. tokenised bonds, tokenised equities, tokenised commodities, tokenised trade finance, tokenised RWA. It is envisaged that, in a fully developed eco-system of tokenised securities and products, tokenised deposits flow seamlessly throughout the financial system, for both interbank settlement of tokenised deposits and DvP settlement, generating huge efficiency gains as well as a much higher capacity for Hong Kong to provide financial services as an international financial centre.

Key challenges	Observation
 Need for changes to market conventions in order to optimise workflows in a tokenised environment	As reflected in the use cases for secondary market trading of TMMF, new market conventions should be evaluated to maximise the benefits of tokenisation. Under the current market convention, investments in funds are primarily made through the primary market. However, the time lag required to determine a fund unit's NAV represents a major roadblock to further compressing the transaction cycle from hours to seconds. While this can be addressed through the establishment of secondary market pricing, the effectiveness of this approach depends on factors such as the liquidity of the secondary market.
 Possible challenges to banks' liquidity management dealing with high-speed, high-value tokenisation transactions	The focus of this initial round of use cases was the feasibility of the downstream business flows using the hypothetical e-HKD in the Sandbox environment for settlement among banks. For instance, in interbank settlement of tokenised deposit or DvP settlement, to enable the payment of tokenised deposits from the payer to the payee, the payer's bank will need to pay the e-HKD to the payee's bank, based on which the payee's bank will generate the tokenised deposits for the payee. If tokenisation becomes a successful business model, banks may need to maintain substantial interbank settlement balances to support their clients' interbank settlement of tokenised deposit and DvP settlement. Accordingly, liquidity management may become a challenge, and this aspect was not covered through the Sandbox experiments.
 Challenges in supporting customers' cross-border settlement need	While the Sandbox experiment does not cover use cases that specifically experiment with cross border settlements, many of the use cases indicate the importance of enabling tokenised cross-border settlement (e.g. trade finance and global treasury management). In due course, as more attractive and innovative tokenised products are developed, cross-border settlement will be necessary to facilitate the settlement needs of overseas investors.

To generate sufficient agility to navigate through the identified challenges, the Government, the HKMA and the SFC have already taken the following steps:

01

Explore policy options
to support product
innovation

As the adoption of fully automated end-to-end processes will inevitably take considerable time, the SFC has taken the lead to navigate through this roadblock by exploring various policy options to allow a secondary market for tokenised products, which will enable investors to buy and sell their investments instantly, thereby enhancing liquidity management for investors. The Government has recently clarified that the stamp duty waiver currently provided for the transfer of ETFs listed on the Stock Exchange of Hong Kong is also applicable to the transfer of tokenised ETFs¹⁷. This has provided a pathway for implementing a more commercially viable secondary market for tokenised products. The SFC has been developing safeguards in this regard, with a step taken by providing the guidance on secondary trading of tokenised SFC-authorized investment products.

02

Advancing Project
Ensemble to explore
desirable liquidity
arrangement and cross-
border settlement
opportunities

The HKMA has taken steps, in line with the 2025 Policy Address, in advancing Project Ensemble to the next phase – Ensemble^{TX} (See Box 12). This includes encouraging commercial banks to launch tokenised deposits, and enabling live transactions of tokenised assets, such as the settlement of TMMF with tokenised deposits¹⁸. In addition, to address the challenges to banks' liquidity management, the HKMA has been exploring the desirable operational modalities that can help banks to cost-effectively manage liquidity in a 24/7 high-speed, high-value tokenised environment. This is a crucial pre-requisite for banks to offer high quality services to support the needs of interbank settlement of tokenised deposits and DvP settlement needs of their clients.

03

Develop clear
regulatory framework
to guide the pursuit of
business opportunities

On the regulatory front, the Government is establishing a comprehensive and unified regulatory framework for digital asset ("DA") service providers. The SFC will be the leading authority for the upcoming licensing regimes for DA service providers and is currently the regulator for virtual asset trading platforms. It is proposed to be further empowered to license and supervise virtual asset dealers, advisors and managers, custodians, as well as to enforce relevant regulations and set expected standards for these service providers. The SFC is also the primary regulator for the securities and futures market, including tokenised securities, with the SFC having issued two circulars to provide further guidance to intermediaries involved in tokenised securities-related activities and tokenisation of SFC-authorized investment products in November 2023¹⁹. The Government and the HKMA have also been working on a legal review to facilitate the further adoption of DLT in the fixed income and related markets. The first-phase review, completed in June 2026, suggested that the existing regime is sufficiently flexible to support digital bond issuances and provided the market with certainty on DLT record-keeping. The second-phase review will further explore the potential flexibilities and enhancements required for building a future-ready ecosystem.

04

Provide legal backing
for digital trade
documents

To promote the broader adoption of digital trade practices, the Government is preparing legislative amendments to facilitate digitalisation of trade documents, making reference to the Model Law on Electronic Transferable Records ("MLETR"). The Government plans to introduce the amendments into the Legislative Council within 2026.

17. <https://www.ird.gov.hk/eng/faq/ETFs.htm#:~:text=The%20sale%2C%20purchase%20or%20transfer,are%20exempt%20from%20stamp%20duty>.

18. https://www.policyaddress.gov.hk/2025/public/pdf/policy/policy-full_en.pdf

19. Circular on intermediaries engaging in tokenised securities-related activities (<https://apps.sfc.hk/edistributionWeb/gateway/EN/circular/doc?refNo=23EC52>); Circular on tokenisation of SFC-authorized investment products (<https://apps.sfc.hk/edistributionWeb/gateway/EN/circular/doc?refNo=23EC53>)

Three strategic directions towards the commercialisation of tokenisation

Notwithstanding the efforts being made, as summarised above, a game-changing commercialisation of tokenisation in Hong Kong is possible only if these efforts are underpinned by a united vision of a "Tokenisation-Powered Financial Sector of Hong Kong" and an unequivocal commitment to invest in the future of Hong Kong. To this end, work is underway on three strategic initiatives to support the realisation of this vision.

01

Formalising institution-level collaboration to develop the tokenisation eco-system

The ongoing success of Project Ensemble will be dependent on the extent to which there is effective, systematic, and holistic collaboration between different stakeholders, including the Government, regulators, financial institutions, financial services providers and technology firms. This can be further supported by industry working groups comprising expert representatives from various industries which are formed to: (i) identify needs for policy support in respect of laws and regulations; (ii) propose changes to current market conventions or technology applications; and (iii) develop standards or guidance in aspects crucial to the commercial adoption of tokenisation, including compliance, tax, accounting, audit, anti-money laundering, data privacy and legal matters.

02

Fostering commitment to the strategic vision of "Tokenisation-Powered Financial Sector of Hong Kong"

Many steps can be taken to achieve this objective. Amongst them, we consider it imperative to engage stakeholders in the development of industry guidelines for the implementation of tokenisation strategies. This is in line with the Fintech 2030 strategy for driving Hong Kong's fintech development as announced by the HKMA in November 2025. At a financial institution level, this should be implemented in line with their group-wide risk management framework, by evaluating the long-term strategic importance of tokenisation. Commitment to a tokenisation-powered financial sector represents not only a technological upgrade, but a critical strategic investment. Greater deliberation among industry participants is vital in order to move the dialogue from short term monetary benefits to sustainable, long-term strategies.

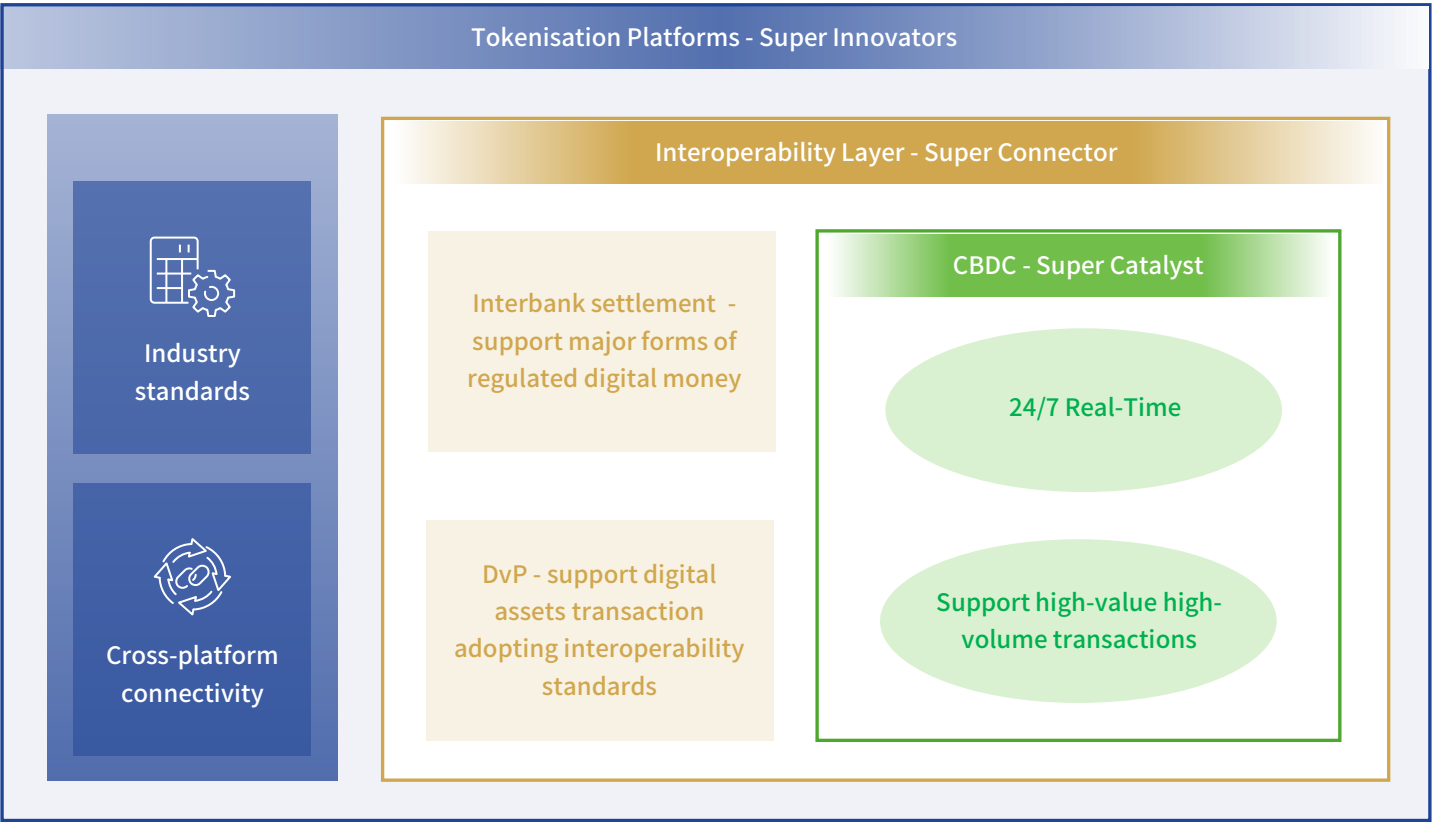
03

Building Critical Mass

To move from experimenting with use cases to broader commercialisation and development of a tokenised financial eco-system, a critical mass is needed to: (i) convince stakeholders to make critical changes such as the end-to-end automation of manual processes; and (ii) enable proliferation of tokenisation applications. To achieve this, a strategic focus should be applied to prioritise products that can better capture the full benefits of tokenisation which involve fewer parties and less manual processes, e.g. repo and bond trades among financial institutions. Most importantly, inter-bank trading of these tokenised instruments not only benefit financial institutions in their own liquidity management, but will also establish market liquidity for tokenised financial assets. In the longer term, a cluster of actively traded tokenised products will serve as the building blocks for a broader tokenisation eco-system.

Conclusion

As illustrated in the diagram below, the Ensemble Interoperability Layer functions as a super connector that orchestrates interbank settlement of tokenised deposit and DvP settlement. Such real-time atomic settlements can be made possible by leveraging CBDC as a super catalyst to enable high-speed transactions on a 24/7 basis. Supported by the Ensemble Interoperability Layer for cross-platform orchestration and CBDC for interbank settlement, public and private DLT platforms as super innovators can then focus on products and services innovation.



The results of the Sandbox experimentations provide compelling validation of the strategic importance of tokenisation in the coming era of digital finance. Participants' feedback emphasised the value of standardised interbank settlement of tokenised deposit and DvP settlement functions which have been experimented in the Sandbox. Furthermore, with the associated settlement, credit and liquidity risks mitigated under this set-up, financial institutions and technology companies can focus on developing products and services that add value to customers, either by offering **higher speed** for existing products or expanding to **wider space** that renders investment in real world assets more accessible. These attributes strengthen Hong Kong's position and reinforce its competitive advantage as an international financial centre.

Participants of the Sandbox experimentations invariably highlighted efficiency gain as the key attraction of tokenisation. Efficiency gain can be manifested in a range of tangible benefits, including but not limited to (i) lower operational risk due to standardised and cross-platform transactions, (ii) more efficient liquidity management as a result of real-time or atomic settlement, and (iii) more opportunities and easier access to financial markets through the innovations brought about by tokenisation.

On the other hand, the primary incentive for market players to push for efficiency gains is "cost saving", which is cited by most participants as one of the most tangible benefits of tokenisation. They envisage a model where transactions take place on platforms with one set of on-chain records. These on-chain records serve as the agreed "golden source" of truth among all parties, simplifying work on transaction recording, confirmation and reconciliation.

Cost saving and efficiency gains of this scale have the potential to elevate the competitiveness of the Hong Kong's financial sector to a new level. More importantly, materially lower transaction costs can promote greater financial inclusion by enabling investors to deploy smaller amounts of capital across a broader range of assets, as in the case of sustainable finance.

Nevertheless, an idea is like an aircraft and can only fly if it can reach a certain speed threshold. As the industry enters the era of digital finance, it is imperative for all stakeholders to sprint into the future of digital finance together to achieve the necessary critical mass. To this end, the HKMA and the SFC will continue to work closely with the industry to ensure that Hong Kong remains at the forefront of digital financial development.

Box 12: From experimentation to pilot: Ensemble^{TX}



Following the experiments under the Sandbox, we have seen the launch of tokenised deposit services in Hong Kong and increasing size and volume of tokenised asset issuances, for example the first Asia-Pacific retail TMMF. These milestones are not just isolated achievements, they represent concrete steps towards building a more efficient and innovative financial system.



In November 2025, Project Ensemble advanced to its pilot phase, Ensemble^{TX}, which enabled participating tokenised deposit banks and industry pioneers to carry out real value transactions in tokenised deposits and digital assets within a controlled pilot environment. In this pilot phase, the HKMA continues to collaborate with the SFC and the participants to implement end-to-end tokenisation use cases. These will help us identify and address the remaining regulatory, legal, commercial, and technical obstacles that may only become apparent in real-world scenarios, ultimately clearing the way for broader adoption and development of the tokenisation ecosystem.



The initial focus of Ensemble^{TX} is to empower market participants to utilise tokenised deposits in TMMF transactions, and to manage liquidity and treasury needs in real time. In parallel, the HKMA will continue to evaluate and incubate tokenisation use cases in other areas with strong potential for commercialisation under Project Ensemble.



As the HKMA has been adopting a pragmatic and progressive approach throughout the project, the initial infrastructure set-up of Ensemble^{TX}, which enables interbank settlement of tokenised deposit transactions, has been implemented by building the Ensemble Interoperability Layer and leveraging Hong Kong's RTGS system. With this arrangement as a foundation, the HKMA's objectives are to take quick and practical steps to upgrade the infrastructure set-up to enable further testing such that the financial services industry can achieve progressive, practical and tangible improvements in the exchange of money and assets.



The next step for the HKMA is to advance Ensemble^{TX} to support the settlement of tokenised deposits with CBDC, while exploring the possibility of enabling 24/7 settlement and introducing more currencies. Beyond this, to foster a dynamic and resilient tokenisation ecosystem in Hong Kong, Project Ensemble will continue to onboard more tokenised deposit banks, facilitate a wider range of tokenisation use cases, and explore the interoperability with other forms of regulated digital money.



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