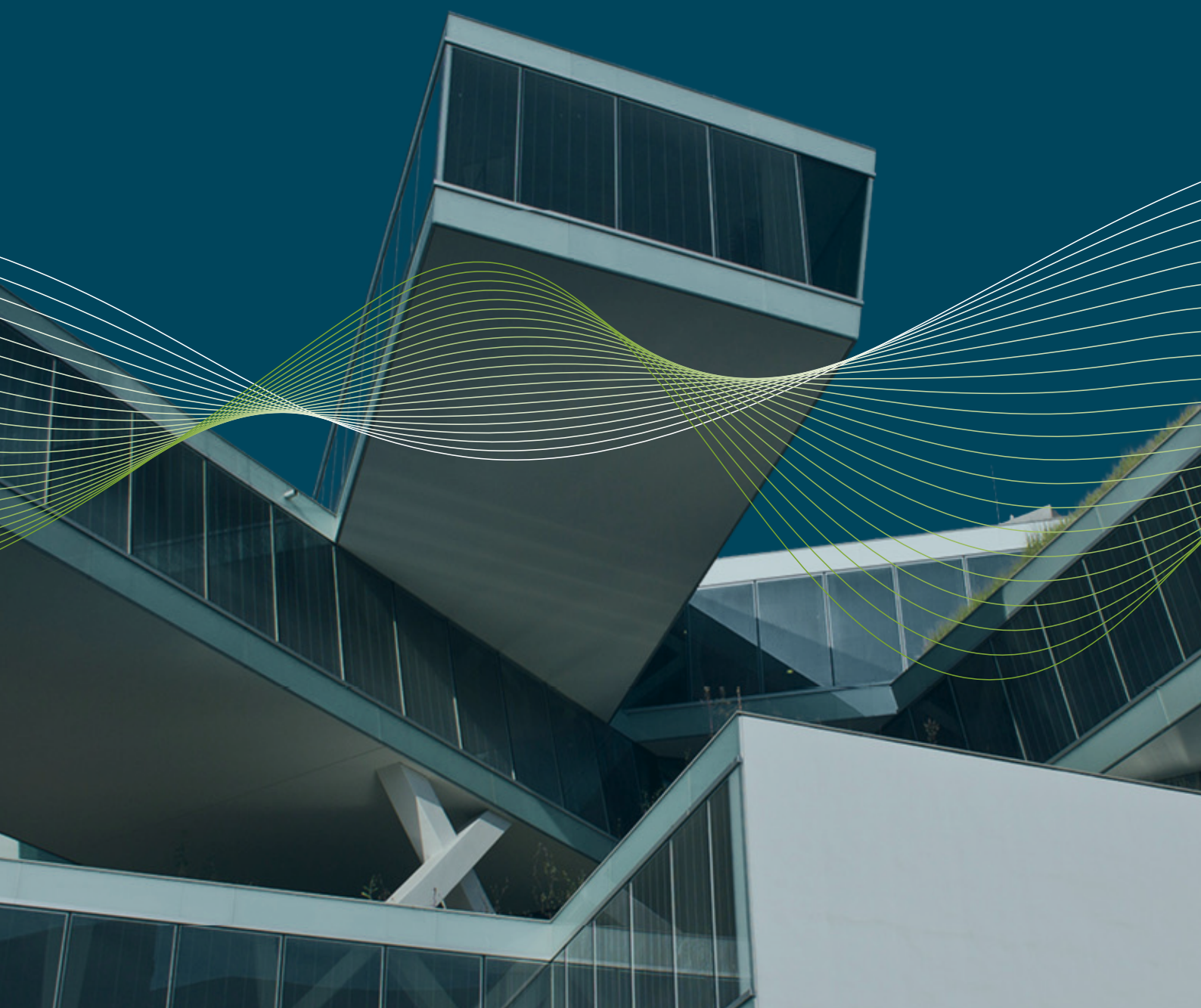


DLT & the Future of Corporate Treasury and Financing

September 2026



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Foreword



Adam Farkas

Chief Executive
Association for Financial Markets
in Europe (AFME)

Capital markets are entering a period of profound technological transformation. Distributed Ledger Technology (DLT), alongside and combined with other emerging technologies such as Artificial Intelligence (AI), is increasingly moving from experimentation towards practical implementation. For corporates, the significance of this transition lies not in the technology itself, but in its potential to improve how they raise capital, move money and manage liquidity and working capital. By connecting these activities more effectively, DLT could deliver greater speed, efficiency, transparency and customisation across capital markets.

As DLT adoption continues to accelerate, it is essential that corporates understand both the opportunities and challenges it presents. Engaging early will enable Treasury professionals to identify these potential benefits, make informed strategic decisions, and ensure that the corporate perspective is reflected in industry discussions.

This paper aims to contribute to this by providing a practical overview of current and emerging applications of DLT in corporate treasury management, while exploring how corporates can prepare for and engage with this evolving landscape.

We hope it will serve as a valuable resource for corporate treasurers and other stakeholders seeking to understand the implications of DLT and the role it may play in the future of capital markets.



François Masquelier

Chair
European Corporate
Treasurers Association

DLT is creating a world where cash, collateral, securities and payments can move instantly across a trusted digital infrastructure. That means less trapped cash, faster settlement, greater visibility, and the opportunity to transform treasury from an operational function into a strategic source of value.

Treasurers have spent decades managing inefficiencies created by time, geography and fragmented financial systems. DLT offers the possibility of removing many of those frictions altogether. That alone makes it a development no treasury leader can afford to ignore.

As financial markets move towards tokenised, real-time and programmable money, treasury teams that engage early will be better placed not only to adapt to change but to help shape it.

We are grateful to AFME for producing this insightful report, which provides a valuable contribution to the discussion on the future of digital finance and treasury. As the EACT, we look forward to continuing to engage with AFME and other stakeholders as this important technological development evolves, helping ensure the corporate treasury perspective remains at the heart of the conversation.

Executive Summary

DLT and tokenisation are rapidly evolving from capital-markets experimentation to practical tools that corporates can use to make treasury, funding and working capital processes faster, cheaper, more transparent and more flexible. For corporates, the opportunity is about using shared ledgers, tokenised cash and programmable assets to remove friction from day-to-day financial operations and open up new options for managing liquidity and capital.

The core corporate benefit is straightforward: DLT can help enable turn slow, sequential and reconciliation-heavy processes into faster, automated and data-rich workflows. Payments can settle closer to real time; cash and collateral can be mobilised more efficiently; invoices and trade documents can become verifiable and tradeable assets; and debt or private-market instruments can be issued, serviced and transferred with lower operational friction.

What this means for corporates?

For corporate treasurers and finance teams, the most compelling benefits fall into five areas:

Faster, more predictable movement of money

DLT-based cash, including tokenised commercial bank money and regulated stablecoins, can reduce the delays, cut-offs and uncertainty associated with cross-border payments. For corporates, this means better cash visibility, fewer funds sitting “in flight”, improved forecasting, and the potential to reduce working-capital buffers across currencies and jurisdictions.

More efficient use of cash and collateral

Tokenised collateral and programmable settlement can help corporates move eligible assets more quickly, substitute collateral with fewer manual steps, and unlock value that would otherwise sit idle. This is particularly relevant for repos, derivatives margining and intraday liquidity management, where speed and precision can reduce liquidity strain and operational risk.

Less trapped liquidity and better yield on surplus cash

DLT can support more continuous liquidity management by enabling cash to move into and out of tokenised money market funds, repo structures or other yield-bearing instruments on a more programmable and potentially intraday basis. For corporates, this creates the prospect of putting surplus cash to work for longer while still meeting payment and liquidity needs when they arise.

Stronger working-capital and supply-chain finance

Trade documents, invoices and receivables can be represented as verifiable digital assets, reducing fraud risk, duplicate financing and manual checks. This can help anchor buyers strengthen supplier resilience, improve visibility across supply chains, and enable SMEs and deeper-tier suppliers to access finance on the basis of trusted trade data rather than fragmented paperwork.

More flexible access to funding and capital markets

DLT-based bonds, private credit, project finance and equity instruments can lower operational barriers to issuance, automate lifecycle events and broaden investor access. Over time, this could allow corporates to raise smaller or more tailored amounts of funding, reduce issuance friction, improve liquidity and diversify beyond bank finance.

Where the opportunity is most immediate

The clearest near-term opportunities for corporates are in cross-border payments, collateral mobility, intraday liquidity and tokenised fixed income, where regulated infrastructure and live market activity are already developing. These are the areas where corporates can engage now through banks, market infrastructures and technology partners to test concrete treasury and funding benefits.

What corporates should do next

Corporates should treat DLT as a strategic treasury and financing capability, not a standalone technology experiment. The practical starting point is to identify pain points where value is highest: trapped cash, slow cross-border payments, collateral inefficiency, reconciliation-heavy processes, paper-based trade flows, or costly and inflexible funding routes. From there, corporates can prioritise use cases, run targeted pilots, and build the internal governance, wallet infrastructure, data integration and risk controls needed to scale safely.

DLT will not replace existing financial infrastructure overnight, but it is increasingly becoming part of the infrastructure through which corporates will move money, manage liquidity and access funding. Corporates can play a key role in benefiting from as well as guiding that transformation.

1. What is DLT and How Can It Benefit Corporates?

In recent years, Distributed Ledger Technology (DLT) has developed from deployment and proof-of-concept into a technology that can form the basis for economic exchanges, activities, and real transactions across the economy, including financial services and capital markets.

, DLT also opens new ways and opportunities for corporates - large, middle-sized, and small – to pay, manage liquidity, supply chains and to fund business operations and growth. In particular, it enables both greater customisation and enhanced availability of corporate finance options. In some cases, these benefits are amplified when DLT is combined with other emerging technologies such as Artificial Intelligence (AI).

Below, a brief explanation and overview is provided of what DLT is, what it is not, how itits core potential and how it links to other technologies, notably AI:

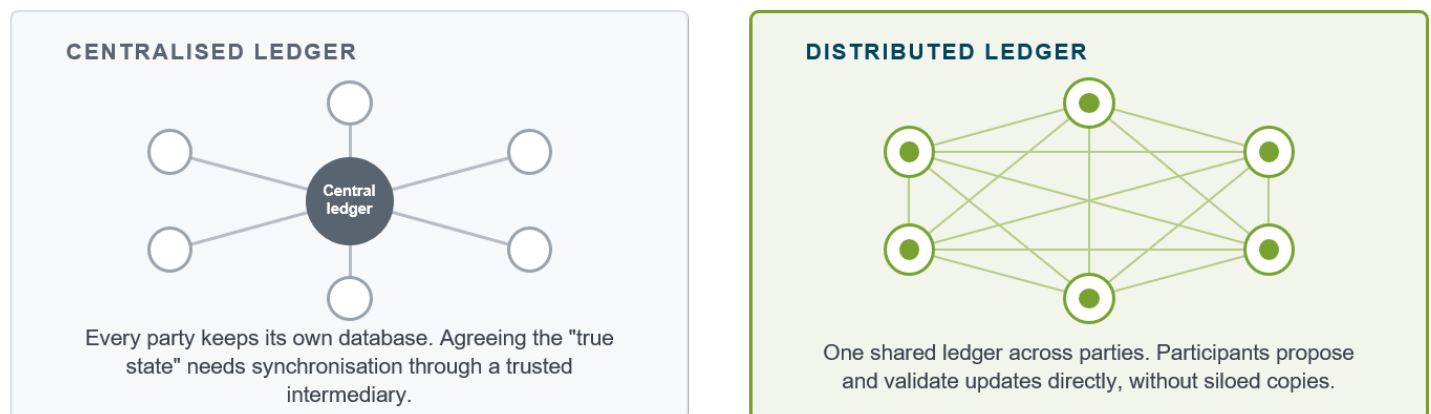
1.1 DLT & Tokenisation – what it is (not)

Traditional Systems vs DLT

In conventional information systems, each organisation maintains its own proprietary database in isolation. To ensure consensus on the “true state” of data, changes require confirmation and synchronisation between parties, often via a trusted, centralised intermediary.

DLT operates on a fundamentally different principle: using cryptography and economic incentives, it enables the creation of a single, shared, and distributed ledger accessible to multiple parties. Depending on the ledger’s governance model, participants can propose updates and/or validate changes. This reduces the need for multiple siloed databases and trusted intermediaries (see Figure 1 below).

Figure 1: Distributed vs Centralised ledger



Representing assets on DLT: tokenisation

Tokenisation is the process of representing assets on a distributed ledger (e.g., blockchain). It involves creating a digital representation of an asset, such as cash, bonds, stocks, real estate, art, or even event tickets. Assets can be natively created on DLT, but they can also be recorded on a DLT while having been registered in a traditional infrastructure. In this report, we refer to any asset on DLT as “DLT-based assets.”

Smart Contracts

A smart contract consists of software code deployed on a distributed ledger that automatically executes when predefined conditions are met. They can operate within the context of legally binding agreements between transaction counterparties, enabling automation and reducing reliance on intermediaries. This enhances efficiency and transparency, though careful design is required to mitigate risks such as coding errors or legal enforceability challenges.

DLT does not equal crypto or blockchain

While DLT uses cryptography (the science of encrypting data), it is important to note that DLT is, as such, not equal to unbacked crypto-assets. Unbacked crypto-assets, such as Bitcoin and commonly referred to as “crypto”, are just one type of asset that can be represented on a distributed ledger.

Other assets, such as bonds, equity stock, invoices, as well as forms of cash (e.g. bank deposits) can also be represented on a distributed ledger.

When considering use of DLT and tokenisation, it is thus important to separate the underlying ledger technology from the assets: while DLT has given rise to some new asset categories – some of which may be relevant for corporates – a key source of benefits can come from representing and transacting traditional asset categories on a distributed ledger. Similarly, while blockchain is one common type of distributed ledger – other types exist as well. A blockchain is characterised by blocks of updates to a shared ledger that are added sequentially, forming an immutable chain of records.

1.2 How DLT & Tokenisation offer benefits to corporates

The characteristics of DLT, tokenisation and smart contracts jointly enable several benefits. While these benefits will differ for specific treasury management use cases (see individual use cases discussed in section 2), they can be generally categorised as enhancing speed and programmability of treasury transactions, enhancing liquidity and the investor base for corporate issuances, and enabling greater operational efficiency in treasury operations:

Transaction speed, programmability and availability

DLT offers benefits related to speed and programmability of transactions by representing assets on a shared ledger rather than in siloed databases. Smart contracts in turn enable the automated and near-instantaneous execution of exchanges in optimised and programmable fashion. These contracts can also enable regulatory checks and approvals. This means transactions that currently take days to settle can be completed within minutes¹. Moreover, DLT rails provide the basis for 24/7 transaction execution, thus creating a fast, programmable and available execution layer on which AI-optimised treasury management can be performed. Together, AI and DLT thus form the outlines for next-generation treasury management.

Liquidity and investor base

DLT streamlines not merely the execution of transactions, but also the issuance of capital markets instruments such as commercial paper or corporate bonds, creating a pathway to capital raising that is more tailored to operational timings and needs. By automating lifecycle actions such as issuance, coupon payments and redemptions through smart contracts, back-office and lifecycle management can be significantly lowered, in turn reducing issuance cost and operational risk. These developments also make viable smaller denomination issuance. Fractionalisation enables the breaking up of larger-size instruments into smaller denominations. All this helps enables the tapping of new investor segments and the potential enhancing of liquidity of issued instruments.²

Operational efficiency

DLT can help streamline internal treasury operations in a number of ways: first, DLT offers an immutable and verified data layer that provides real-time and consistent data across transactions and assets, reducing need for reconciliation.

DLT also offers a consolidation of treasury activities through its 'wallet'-based structures, which hold and safeguard the private keys that enable the transacting of tokens. While traditional accounts represent the balance of a single asset held in a single private database, wallets literally and figuratively hold the 'keys' to a variety of assets – deposits, bonds, MMF shares - held across a number of shared (distributed) ledgers. The result is a significant opportunity for streamlining and simplifying of treasury operations, reducing operational overhead, enhancing transparency, and optimising capital allocation.³

1.3 Link to other emerging technologies

While this paper focuses on the potential of DLT and tokenisation, it is important to consider DLT holistically in the context of other emergent technologies and digitalisation developments. Recent years have seen ongoing digitalisation of treasury functions, as well as the increasing implementation of Artificial Intelligence (AI). AI and DLT serve as complementary technologies that jointly can help create more efficient and streamlined treasury operations.

This relation is symbiotic, as highlighted in Figure 2 below: whereas AI provides reasoning and orchestration capabilities to predict and enact optimised treasury activities and strategies, DLT provides a consistent, verified and structured data layer on which AI agents can act.⁴ Moreover, DLT can provide a trust anchor for automated verification of AI agents' identity, key to ensuring accurate and compliant transactions in an increasingly agent-to-agent context. Finally, DLT provides the execution layer on which (AI-induced) transactions and actions can be executed efficiently and near-instantaneously.

In considering DLT integration into treasury management, therefore, a technology-holistic and business-driven approach is vital.

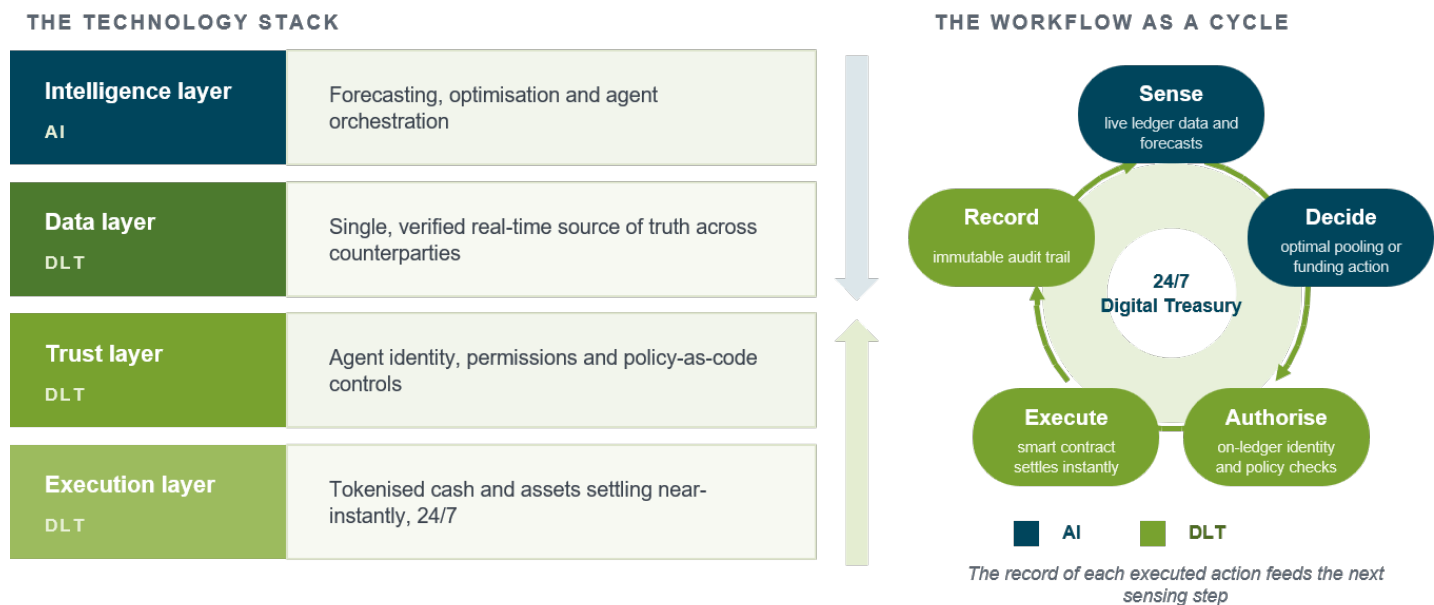
¹ Blockchaindreamlab (2024) – Revitalising Cross Border Payments through Decentralised Oracles - <https://www.blockchaindreamlab.com/revitalizing-cross-border-payments-through-decentralized-oracles>

² Daskalakis, N. Lianos, E., Mitropoulos, Ch., Tantis, G. and Theofilis, S. (2026), "Security Token Offerings – A General Literature Review", unpublished manuscript

³ Finmo (2025)– Corporate Treasury in a world of wallets- <https://www.linkedin.com/feed/update/urn:li:activity:7379146729658454016/>

⁴ EY (2023) What digital assets and distributed ledger technologies (DLT) offer treasury. https://www.ey.com/en_us/insights/financial-services/what-digital-assets-and-dlt-offer-treasury

Figure 2: AI and DLT's symbiotic relationship for 24/7 Treasury management



2. Applying DLT to Corporate Treasury

The key benefits of DLT outlined in the above section can form the basis for more automated, tailored and optimised corporate treasury management. To further outline these benefits, this section sets out a number of key corporate finance and treasury Management applications of DLT, discussing benefits and examples of real-world implementation of DLT across these application areas:

2.1 Payments

Current process and challenges

Cross-border payments enable financial transactions between parties in different jurisdictions and support global trade, investment, and corporate treasury. Today, these flows are processed through a combination of established payment rails, including correspondent banking networks, card networks, remittance providers, and regional payment systems. These infrastructures are reliable and globally interconnected, but cross-border transactions can still come with drawbacks and costs:

Processing and settlement times

Time required for processing and settlement impacts efficiency but also increases operational and liquidity risk. They can also extend the period over which corporates must manage timing-related market and funding risk, potentially buffer-liquidity needs, internal working-capital costs, and the operational burden of monitoring and reconciling pending transactions. In addition, differing operating hours and time-zone cut-offs across correspondent banks and market infrastructures can create additional delays, restrict intraday visibility, and further complicate liquidity planning.

Operational costs

Cross-border payments can involve higher operational cost and complexity due to fragmented local clearing and settlement arrangements and multiple intermediaries, which requires reconciliation cycles.

Corporate B2B cross-border payments typically cost around 1-2% of the transaction value, and while 92% of these payments are credited within the same business day via traditional payment rails ⁵, settlement can be constrained by operating hour cut offs.

How DLT helps address these challenges

DLT enables new types of payment solutions, including international/cross-border payments, that can help overcome some of the drawbacks of traditional payment rails.

In particular, two new types of solutions are coming online (also see use case box below):

Types of DLT-based money solutions

Stablecoins

Digital tokens are designed to maintain a stable value by being pegged to a reference asset, usually a fiat currency such as GBP, EUR or USD. They are widely used for payments, trading, and settlement within digital ecosystems because they reduce volatility compared to cryptocurrencies. Their stability depends on the reserves backing them, which can include cash or high-quality assets. For cross-border payments, the primary proposition is improved speed/availability and transparency of transfer and settlement status, rather than changing the economics of FX pricing or risk.

DLT-based commercial bank money.

On the other hand, DLT-Based commercial bank money represents deposits held at a commercial bank but issued in digital form on a distributed ledger. This approach combines the safety and regulatory oversight of traditional bank money with the efficiency and programmability of blockchain technology. It enables faster, automated transactions while preserving the legal claim on the bank. For corporates, tokenised deposits can support bank-grade cash on ledger to enable more automated treasury workflows and improved cash visibility, while staying within existing banking frameworks.

These can help address some of the shortcomings in the traditional payments infrastructure and provide new ways to improve the speed, operational efficiency, and transparency of cross-border payments:

Table 1: Difference between Tokenised Bank Deposits and Stablecoins

⁵FSB (2024) – Annual Progress Report on Meeting the Targets for Cross-border Payments - <https://www.fsb.org/uploads/P211024-3.pdf>

Aspect	DLT-based Commercial Bank Money	Stablecoin
Claim On	Claim on the bank, similar to traditional bank deposits but with the claim represented on a distributed ledger	Claim on assets backing the stablecoin (often HQLA, including government bonds or bank deposits)
Regulatory Status	Same as traditional deposits (i.e. subject to product-specific characteristics that may differ on country-by-country basis).	Varies, in a number of jurisdictions regulated by specific requirements (e.g. EU MiCA Regulation)
Risk Profile	Same as traditional deposits, determined by bank credit risk profile.	Based on risk profile backing assets and governance/risk management practices issuer.
Settlement Layer	Distributed Ledger (permissioned or permissionless)	Mostly public (permissionless) blockchains but also issued on permissioned ledgers.

Faster settlement

Both DLT-based instruments can settle transactions near-instantly and offer more direct payments paths, improving liquidity management through real-time visibility on transaction status⁶. Unlike traditional payment rails, DLT-based transactions typically settle in seconds to minutes and are not constrained to operating hour cut offs, which can reduce end-to-end payment uncertainty, improve cash forecasting accuracy, and enable tighter treasury buffers. Shorter settlement cycles can also reduce the period over which funds are “in flight” or operationally encumbered, which may lower internal working-capital drag and buffer, even if external fees are unchanged. Where market or funding exposures are sensitive to settlement timing, shorter cycles can reduce timing-related uncertainty.

Programmability

In addition to the potential for faster processing, DLT also enables greater programmability of payments. Through the use of smart contracts, payments can be programmed and made contingent on other events, such as receipt of payments, or investment optimisation strategy rules. This means payments can be optimised to a greater degree, contributing to efficient liquidity and working-capital management.

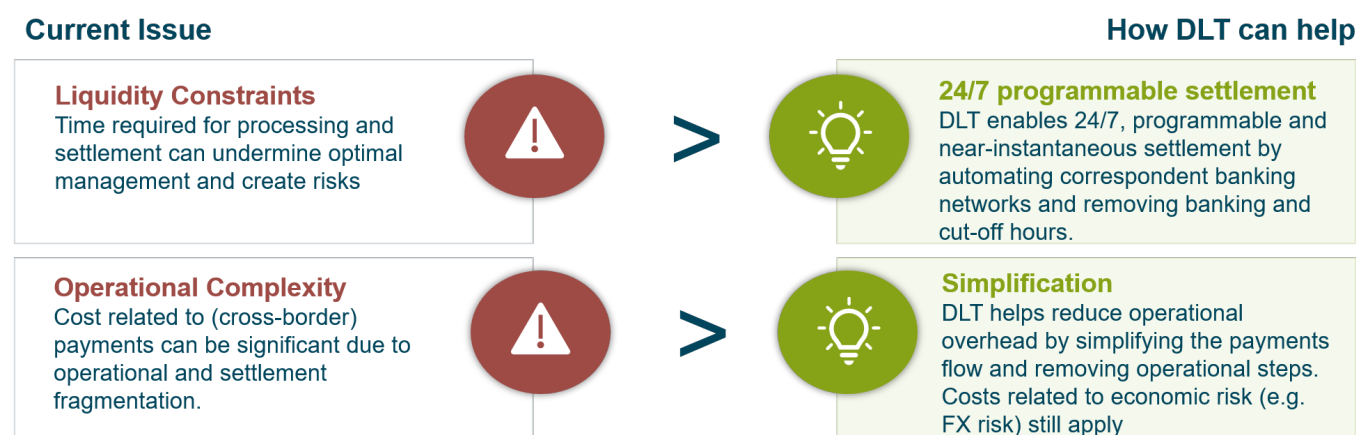
Reduced operational cost

DLT-based payment models can improve operational cost efficiency in cross-border transactions, although the extent of this benefit varies by instrument and implementation: Stablecoin transfers on-chain are typically inexpensive, but overall costs depend on on/off-ramp fees when converting to and from fiat.

DLT-based commercial bank money avoids these ramps entirely by keeping value within the regulated banking system.

By streamlining processes and reducing manual interventions, exceptions handling, and reconciliation activity, DLT-based cash models can offer a faster and more cost-efficient alternative for corporates managing multi-jurisdictional and multi-currency payment flows. At the same time, inherent economic risks such as currency exposure and associated spreads are not eliminated, conversion of stablecoins to fiat may introduce additional cost, and operational requirements related to compliance, onboarding, and regulatory controls will continue to apply to ensure market integrity.

Figure 3: Overview Benefits of DLT for cross-border payments



⁶ McKinsey & Company (2025) – The stable door opens: How tokenized cash enables next-gen payments - <https://www.mckinsey.com/industries/financial-services/our-insights/the-stable-door-opens-how-tokenized-cash-enables-next-gen-payments>

Case study 1: Digital Cross-border Transactions Landscape

Recent innovations in digital financial infrastructure are beginning to reshape how cross-border payments are processed. Several platforms and initiatives are demonstrating how tokenised money and DLT can enhance speed, transparency, and efficiency in global transactions. Several types of tokenised cash have emerged, central bank digital currencies (CBDCs), stablecoins, and bank issued tokenised deposits. Below we will focus on the developments in the latter two:

Stablecoins

Stablecoin market capitalisation as of October 2025 is at \$300.79 billion displaying a 129.0% percentage rise YtD from \$233.18 billion in March 2025⁷. Leading in terms of transaction volumes are Tether (USDT) and USD Coin (USDC). However, in the past year in particular, a number of (groups of) banks have also begun to make available stablecoins in a number of currencies. The first of these was Societe Générale's Forge's. A European consortium of nine banks, including ING and UniCredit, has announced plans to launch stablecoins⁸. Separately, another consortium comprising major institutions such as Bank of America, Goldman Sachs, UBS, Citi, MUFG, Barclays, TD Bank, Santander, and BNP Paribas is developing stablecoins pegged to G7 currencies⁹. Additionally, BBVA has revealed its intention to issue a stablecoin pegged to the Euro, with potential expansion to include the US Dollar¹⁰. Finally, the Bancomat consortium is launching EURBA, a EUR stablecoin for retail and corporate use cases.¹¹

Tokenised deposits/deposit tokens

Tokenised deposits are geared more towards institutional use cases, such as cross border B2B payments. Examples of these are JP Morgans JPMC, which allows transfers internally in JP Morgans network, and HSBC's Tokenised Deposit Service. Additionally, JPMorgan's Kinexys platform enables with near instant finality the execution of cross-border FX transactions 24/7 in USD, GBP and EUR, which both Siemens and B2C2 have adopted¹². Cross-bank interoperability of these tokenised deposits is critical for widespread adoption, this demands standardised infrastructure, legal harmonisation, and trusted settlement networks. Settlement networks are being developed and utilised currently, examples being Partior, Regulated Liability Network, Fnality Payment, Canton Network and Swift Tokenisation Initiative.

2.2 Collateral management

Current process and challenges

Collateral management is a critical component of financial risk management. Collateral management involves pledging assets to support transactions such as cash loans, derivatives positions, or repurchase agreements (repos), which corporates use to borrow cash or generate short-term yield on securities¹³. Intraday liquidity focuses on ensuring sufficient cash and collateral are available throughout the day to meet payment obligations and margin calls, avoiding settlement failures and systemic risk. Despite their importance, both areas face significant challenges:

Liquidity constraints

Collateral posted for derivatives or repos is locked up and cannot be redeployed, creating liquidity strain¹⁴. Margin calls, typically occurring daily for variation margin, can trigger unexpected funding needs, forcing corporates to source cash or eligible securities quickly. Repo transactions amplify this challenge because they are often conducted on an overnight basis, with the sale and repurchase of securities occurring on different dates. This overnight structure is reinforced by the inability to exchange and settle the cash and securities legs quickly, which limits flexibility and can lead to suboptimal liquidity management outcomes for corporates.

Operational complexity and limited customisation

⁷ RWA.xyz (2025) Stablecoins - <https://app.rwa.xyz/stablecoins>

⁸ UniCredit (2025) – Nine major European banks join forces to issue stablecoins – <https://www.unicreditgroup.eu/en/press-media/press-releases/2025/september/nine-major-european-banks-join-forces-to-issue-stablecoin.html>

⁹ Reuters – Major banks explore issuing stablecoin pegged to G7 currencies - <https://www.reuters.com/business/finance/major-banks-explore-issuing-stablecoins-pegged-g7-currencies-2025-10-10/>

¹⁰ Luis Blanco (2025)– BBVA prepares to launch its own stablecoin by 2026 - <https://es.finance.yahoo.com/noticias/bbva-alista-lanzamiento-stablecoin-2026-143000149.html>

¹¹ Ledger Insights (2026) Italy's Bancomat signs up 9 Italian banks for EUR.bank stablecoin. <https://www.ledgerinsights.com/italys-bancomat-signs-up-9-italian-banks-for-eur-bank-stablecoin/>

¹² Anna Irrera (2025) – Siemens and B2C2 Adopt JPMorgan's Blockchain-Based FX Platform - <https://www.bloomberg.com/news/articles/2025-10-22/siemens-b2c2-adopt-jpmorgan-s-blockchain-based-fx-platform>

¹³ ESRB (2020) – Liquidity risks arising from margin calls -

https://www.esrb.europa.eu/pub/pdf/reports/esrb.report200608_on_liquidity_risks_arising_from_margin_calls_3~08542993cf.en.pdf

¹⁴ BIS (2023) – Liquid assets at CCPs and systemic liquidity risks - https://www.bis.org/publ/qtrpdf/r_qt2312c.htm

Managing collateral and intraday liquidity across multiple counterparties and clearing systems is resource intensive for corporates and the intermediaries that support them. Current processes rely on fragmented systems and manual workflows, increasing the risk of errors, delays, and disputes. Workflows and parameters can also be difficult to tailor across relationships, increasing exception handling and limiting optimisation. Repo settlement delays further add to operational inefficiency.¹⁵

Regulatory and control burden

Post-crisis regulations (e.g., EMIR, Dodd-Frank) mandate stricter collateralisation requirements, controls, and reporting, increasing compliance overhead and operational burden. Fragmented data and manual reconciliation make meeting these requirements and evidencing compliance costly and time-consuming.

How DLT helps address these challenges

On-chain solutions transform collateral management by tokenising collateral (e.g., securities) automatically enforcing terms such as margin calls, collateral substitution, eligibility checks, and settlement conditions, enabling more automated and programmable movement of collateralised assets.

For repo transactions, tokenising both the collateral and cash legs, and bringing them both onto the same ledger or platform (see Figure 4) enables real-time settlement and automation through smart contracts. These advantages have led to the exponential rise in DLT-based repo volumes observed (see Figure 5) and they are set out in greater detail below:

Figure 4: Transaction Flow of an On-Chain Repo

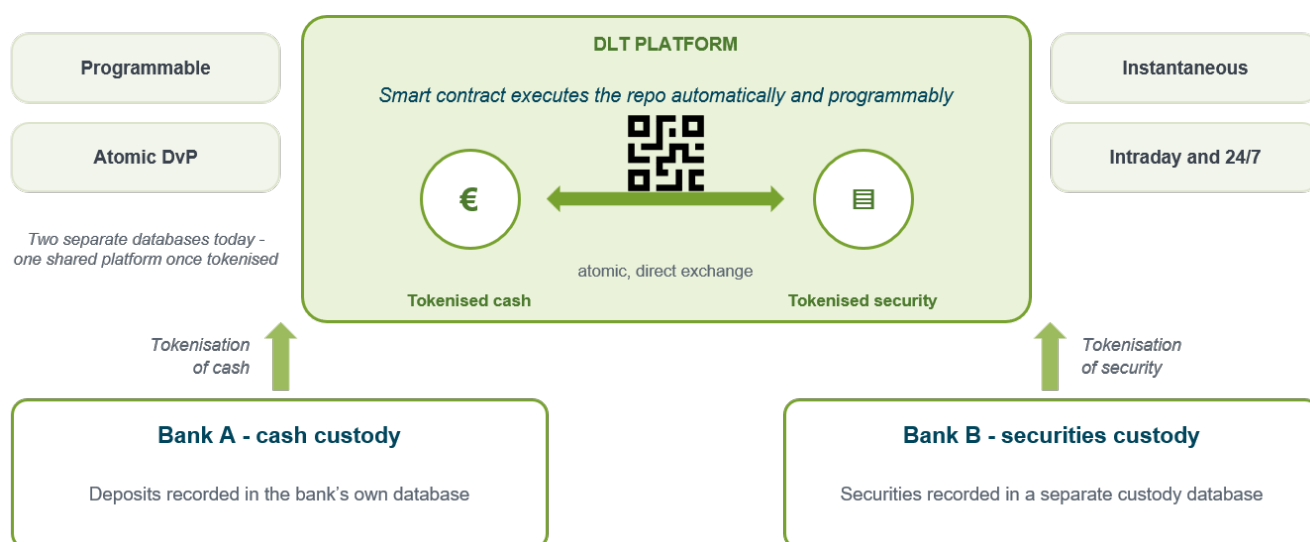
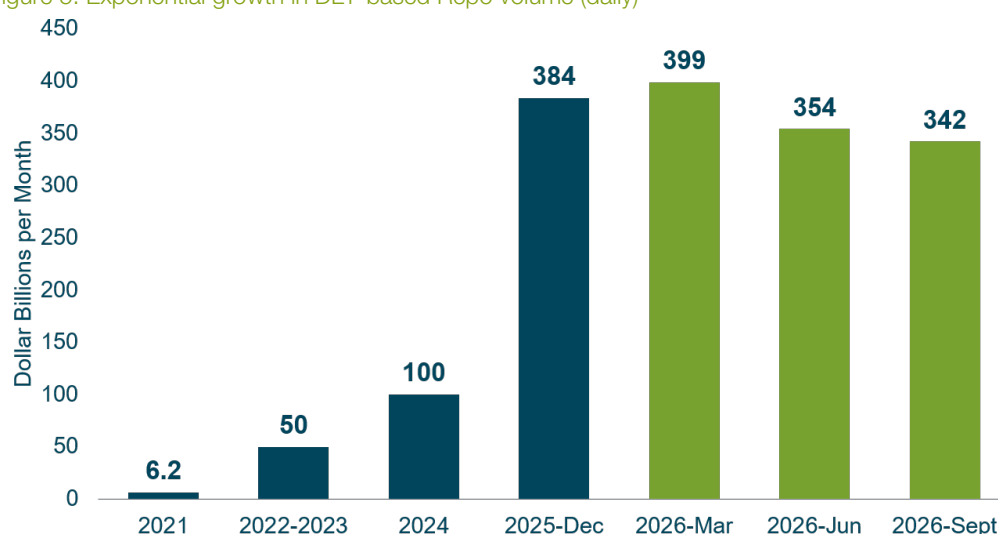


Figure 5: Exponential growth in DLT-based Repo volume (daily)



¹⁵ J.P. Morgan (2023) – Revolutionizing intraday financing with a blockchain-based solution - Kinexys-Digital - https://www.jpmorgan.com/kinexys/documents/Kinexys-Digital-Financing_case_study.pdf

Liquidity improvement

DLT enables instant transfer and substitution of collateral, minimising the time assets remain locked and easing liquidity pressure during margin calls. Real-time settlement supports same-day repo transactions, removing the overnight constraint of traditional settlement and enhancing cash flow flexibility. These benefits are especially relevant for derivatives, where daily variation margin calls under EMIR and Dodd-Frank can create sudden intraday funding needs. With DLT, collateral can be posted, substituted, and settled in near real-time, significantly reducing margin-related liquidity challenges.

Operational efficiency

Shared ledgers remove fragmented systems and manual reconciliation, enabling real-time settlement on DLT. DLT-based assets, such as government bonds or cash equivalents, can be automatically and instantly transferred via smart contracts, which enforce terms like margin calls, collateral substitution, eligibility checks, and settlement conditions. Where appropriate, these rules can be configured to reflect counterparty-specific agreements and operational preferences, reducing “one size fits all” processing and lowering exceptions. This automation reduces delays, minimises operational overheads, and lowers the risk of errors and disputes. This programmability enables instant or near-instant settlement, particularly for repos, which traditionally rely on overnight cycles due to slow settlement processes. As a result, it is estimated that DLT reduces Repo-related clearing and settlement costs by 25%¹⁶

Programmable controls and compliance

DLT enables programmable controls through smart contracts that can automatically execute margin calls, eligibility checks, collateral substitution and settlement conditions without manual intervention. A shared, permissions-based ledger provides a single time-stamped record of postings, substitutions, valuations and movements, reducing reconciliation breaks and improving auditability. Smart contracts can also encode “policy-as-code” rules (e.g., eligibility criteria, haircuts, concentration limits, substitution rules and margin timelines) consistently across parties, supporting more automated regulatory reporting and control testing while strengthening governance through transparent rule sets and access controls over sensitive collateral data.

Figure 6: Overview Benefits of DLT for collateral management



¹⁶ GFMA (2025) The Impact of Distributed Ledger Technology in Capital Markets. <https://www.gfma.org/wp-content/uploads/2025/08/1.-full-report-impact-of-dlt-in-cap-mkts-final-1.pdf>

Case study 2: Early Adoption of Tokenised collateral and Intraday Liquidity Solutions

Adoption of tokenised collateral and intraday liquidity solutions is still developing, with activity concentrated among a few large institutions and purpose-built platforms. Although the global repo market sees roughly €3 trillion in daily turnover¹⁷. Only a small share currently flows through distributed-ledger infrastructure. The largest being Broadridge's Distributed Ledger Repo (DLR) which processes an average of \$383.51 billion in daily trade volumes as of 23/03/2026¹⁸, demonstrating the high uptake.

Leading participants include Broadridge and J.P. Morgan, both of which have built live platforms that demonstrate how tokenisation can enhance collateral mobility and intraday liquidity. Broadridge's DLR enables near-real-time collateral settlement and increased efficiency in repo transactions, while J.P. Morgan's Kinexys and Tokenised Collateral Network has allowed clients to mobilise tokenised money-market fund shares and execute programmable intraday repos among other things. According to JP Morgan it has allowed financial institutions to reduce their operating cost by 56%¹⁹. These two examples demonstrate how it has now shifted from proofs-of-concept into production-level use.

For example, in a paper by BCG and Ripple, a global bank managing \$100 billion in repo could save \$150-\$300 million annually by reducing idle collateral, accelerating trade cycles, and achieving T+0 settlement²⁰.

2.3 Liquidity Management

Current Process and Challenges

Current liquidity management may suffer from certain limitations in the underlying infrastructure that reduce the ability to manage liquidity optimally:

Liquidity fragmentation

Liquidity is generally dispersed across corporate entities, geographies and (accounts with) financial institutions, creating inefficiencies in the management, allocation and investment of such cash.

Liquidity inefficiencies and lock-up

The traditional infrastructure's reliance on legacy systems and processes, and fragmentation of assets, does not generally enable agile and short-term settlement of transactions such as repos or movement of liquidity into investment vehicles. As a result, such mechanisms for earning yield on excess liquidity are usually only available on an overnight or multi-day basis, creating inefficiencies and opportunity cost in liquidity management or resulting in liquidity being locked up when required.

How DLT helps address these challenges

Pooling of liquidity

DLT solutions can help link different 'pots' of liquidity: DLT enables these to all be represented on a shared ledger, enabling pooling across of cash across bank accounts and corporate entities. Already, DLT platforms enable pooling across bank accounts held by different organisational entities on a global scale. As distributed ledgers increasingly shape the architecture of capital markets, opportunities for multi-entity and multi-bank pooling, sweeping and allocation of cash on an automated, programmable, instantaneous and 24/7 basis will increasingly open up as well.

Enables intraday optimised liquidity management, reducing need for excess liquidity

By bringing different economic assets onto a shared ledger, and by introducing automated settlement mechanisms such as smart contracts, DLT also enables optimised management of liquidity, even over very short periods of time. It, for instance, can enable intraday repo transactions, as well as intraday movement of excess liquidity into a (DLT-based) Money Market Fund (generally known as Tokenised MMFs, or TMMFs), currently generally engineered as DLT-based shares in traditional Money Market Funds. Representing such shares on DLT enables more programmable excess cash investment, enabling corporates to remain invested right up to the moment of payment.

Expanded availability can reduce liquidity lock-up

DLT offers 24/7 availability, making it possible for organisations to avoid overnight or weekend liquidity lockup. As DLT-based cash assets are expected to be introduced over the next 1-2 years, options for movement of liquidity based on DLT are likely to significantly expand as well.

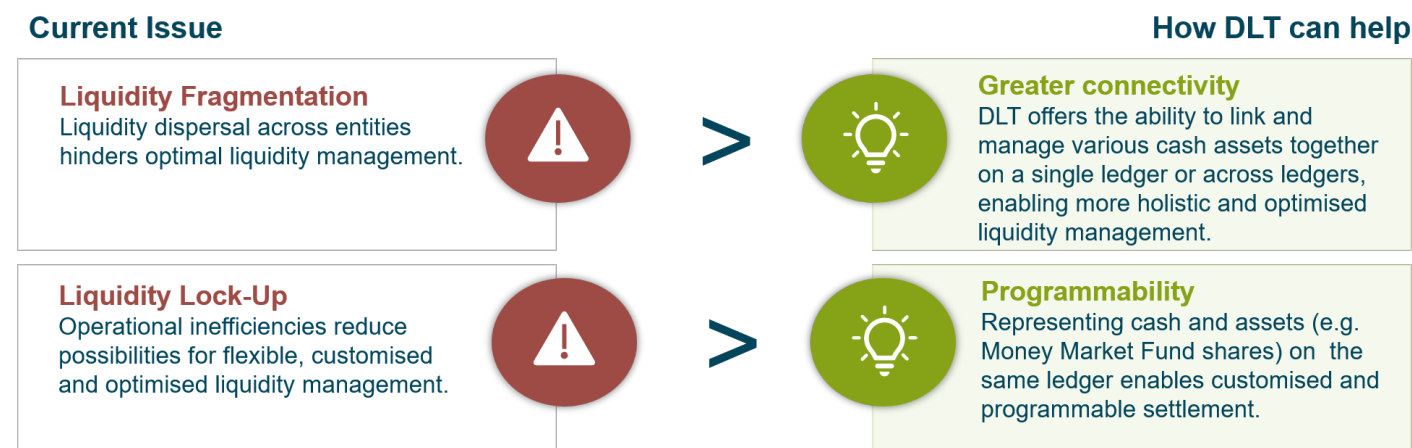
¹⁷ ICMA - How big is the repo market? - <https://www.icmagroup.org/market-practice-and-regulatory-policy/repo-and-collateral-markets/icma-ercc-publications/frequently-asked-questions-on-repo/4-how-big-is-the-repo-market/>

¹⁸ RWA.xyz – Broadridge DLR - <https://app.rwa.xyz/broadridge-dlr>

¹⁹ JP Morgan (2025) - Revolutionizing intraday financing with a blockchain-based solution - https://www.jpmorgan.com/kinexys/documents/Kinexys-Digital-Financing_case_study.pdf

²⁰ Ripple and BCG (2025) - Approaching the Tokenization Tipping Point - <https://media-publications.bcg.com/Tokenized-Assets.pdf?linkId=793435042>

Figure 7: Overview Benefits of DLT for liquidity management



Case Study 3: DLT-based liquidity management and tokenised Money Market Funds

A number of financial institutions have in recent months and years launched tokenized Money Market Funds (TMMFs), which enable intraday investment and redemption of MMF shares, enabling more efficient and intraday liquidity management.

Examples of DLT-native Money Market Funds include the State Street Galaxy Onchain Liquidity Sweep Fund (launched in May 2026²¹), JP Morgan's My On-Chain Net-Yield (MONEY) fund (US Treasuries, launched in December 2025)²², as well as BlackRock's BUIDL fund²³.

Moreover, banks including BNP Paribas (launched in February 2026)²⁴, Northern Trust (launched in March 2026)²⁵, Goldman Sachs²⁶ and BNY (July 2025) have all tokenised shares of (a selection of) their existing MMFs, making such funds available for on-chain investments.

2.4 Trade Finance

Current process and challenges

Trade finance underpins around 80–90% of global trade, providing credit and risk mitigation for importers and exporters. Despite its critical role, the system remains heavily paper-based, fragmented, and slow, creating inefficiencies and limiting access to finance. These challenges are particularly acute for SMEs, contributing to a global trade finance gap estimated at \$2.5 trillion in 2022²⁷. Below are the most pressing issues that currently constrain efficiency, access and trust.

²¹ State Street (2026) State Street Investment Management and Galaxy Digital Bring Cash Management Onchain. <https://investors.statestreet.com/investor-news-events/press-releases/news-details/2026/State-Street-Investment-Management-and-Galaxy-Digital-Bring-Cash-Management-Onchain/default.aspx>

²² JP Morgan (2025) Qualified investors gain access to on-chain assets through Morgan Money <https://am.jpmorgan.com/us/en/asset-management/adv/about-us/media/press-releases/jp-morgan-asset-management-launches-its-first-tokenized-money-market-fund/>.

²³ Securite (2024) BlackRock Launches Its First Tokenized Fund, BUIDL, on the Ethereum Network. <https://securitize.io/learn/press/blackrock-launches-first-tokenized-fund-buidl-on-the-ethereum-network>

²⁴ BNP Paribas (2026) BNP Paribas explores public blockchain infrastructure for money market fund tokenisation. <https://group.bnpparibas/en/press-release/bnp-paribas-explores-public-blockchain-infrastructure-for-money-market-fund-tokenisation>

²⁵ Northern Trust (2026) Northern Trust Asset Management Enters Digital Assets Market with Launch of Tokenized Money Market Share Class <https://www.northerntrust.com/middle-east/pr/2026/northern-trust-asset-management-enters-digital-assets-market-with-launch-of-tokenized-money-market-share-class>

²⁶ Goldman Sachs (2025) <https://www.goldmansachs.com/pressroom/press-releases/2025/bny-goldman-sachs-launch-tokenized-money-market-funds-solution>

²⁷ Bank of Asia (2023) - Global Trade finance Gap Expands to \$2.5 trillion in 2022 - <https://www.adb.org/news/global-trade-finance-gap-expands-25-trillion-2022>

Operational Inefficiencies and Fragmented Data

Trade finance processes involve multiple parties, banks, corporates, insurers, and logistics providers, operating on siloed systems. This reliance on paper documentation and manual reconciliation leads to delays, errors, and high costs. A recent survey found only 16% of companies have fully digitised trade finance processes, highlighting the persistence of manual workflows²⁸. Exception handling is frequent due to non-standard documentation, inconsistent data fields, and jurisdiction-specific requirements, creating operational backlogs and extended cycle times.

Limited Access to Finance for SMEs and Deeper-Tier Suppliers

SMEs face disproportionately high rejection rates for trade finance, around 45% of SME requests are declined, compared to 20% for large corporates²⁹. This stems from information asymmetry, financiers lack visibility into SME creditworthiness and supply chain performance³⁰. As a result, SMEs and deeper-tier suppliers remain locked out of affordable funding, widening the global trade finance gap to \$2.5 trillion.

Fraud Risk and Lack of Trust

Trade finance is document-heavy, relying on invoices, bills of lading, and letters of credit, all vulnerable to falsification. Fraud schemes such as duplicate financing and fake shipping documents cost the industry billions annually, with estimates suggesting up to \$50 billion in fraudulent transactions each year³¹. Cross-border complexity makes verification harder, increasing compliance costs and risk premiums.

How DLT helps address these challenges

DLT offers a credible path to addressing long-standing challenges in trade finance by creating a shared, tamper-resistant record of trade data that all authorised participants can rely on. Unlike traditional systems, DLT enables real-time data sharing, automation of key processes, and tokenisation of assets, reducing friction and improving trust across the ecosystem. Below are the key areas where DLT can deliver impact.

Streamlining Operations and Reducing Costs

DLT replaces paper-based workflows with digital records³² and smart contracts, automating verification and settlement. This reduces manual reconciliation and operational breaks, enabling faster processing and fewer errors. Studies on trade digitalisation suggest processing times can be cut by more than half, and industry pilots confirm the impact: settlement reduced from days to minutes, and transaction costs dropped from \$1,209 to \$82 per trade in blockchain-based simulations³³. While broader digitalisation has been linked to substantial cost savings, these figures highlight the potential efficiency gains from DLT adoption³⁴.

Enhancing transparency and reducing fraud

Digitised, shared records replace paper-heavy workflows, reducing manual checks, errors, and reconciliation across banks, corporates, and logistics partners. Automated verification and synchronised data flows shorten processing and settlement times, while improving transparency and auditability. By leveraging a decentralised, transparent and immutable ledger, firms can streamline processes, reduce transaction costs, and enhance transparency, thereby lowering administrative costs and operational risk³⁵.

Expanding Access to Finance for SMEs

DLT can improve access to trade finance by reducing information asymmetry and increasing trust between buyers, suppliers, and financiers. Shared ledgers allow authorised participants to view consistent and tamper-resistant trade data, giving financiers clearer visibility into supplier performance and order histories. Tokenised trade assets, such as receivables, can be represented on-ledger with validated provenance, enabling funding decisions to be based on real-time, verifiable trade events rather than incomplete or outdated credit information. Smart-contract-based payment commitments can link settlement directly to authenticated milestones in the trade process, reducing perceived credit risk and enabling financing to extend deeper into supply chains. By creating standardised, transparent, and programmable asset and data structures, DLT broadens the pool of financeable transactions, supports more inclusive access to working capital for smaller suppliers, and strengthens supply-chain resilience without relying on complex manual assessments or fragmented documentation flows.

²⁸ Accenture (2022) - Find your competitive advantage in trade finance - <https://www.accenture.com/us-en/insights/banking/find-your-competitive-advantage-in-trade-finance>

²⁹ WTO (2025) – Bridging the global trade finance gap: Empowering SMEs and driving sustainable growth - https://financing.desa.un.org/sites/default/files/2025-02/Brief%20Series%20-%20WTO_Trade%20Finance.pdf

³⁰ HKDCA - Real-world asset tokenisation: A game changer for global trade - <https://www.hkdca.com/wp-content/uploads/2024/08/rwa-tokenisation-game-changer-global-trade-synpulse.pdf>

³¹ ICC (2023) - Shutting Fraudsters Out of Trade 2023 - https://www.iccgermany.de/wp-content/uploads/2023/09/Shutting_Fraudsters_Out_of_Trade_2023_FINAL.pdf

³² Note that legal status of digital form of trade finance documents is rapidly progressing across countries

³³ Springer - (2025) - Blockchain in trade finance: reducing fraud and improving efficiency through digital ledger technology - <https://link.springer.com/article/10.1007/s42521-025-00157-0>

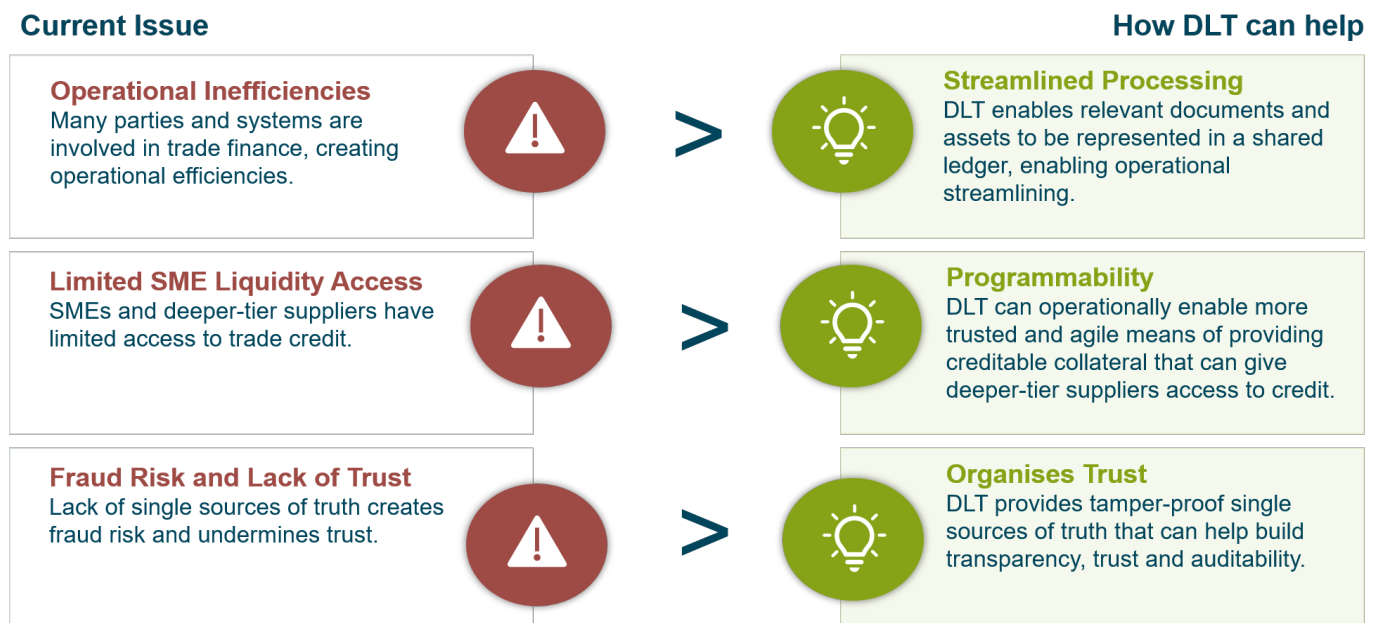
³⁴ Accenture (2022) – Find your competitive advantage in trade finance - <https://www.accenture.com/us-en/insights/banking/find-your-competitive-advantage-in-trade-finance>

³⁵ Böhmecke-Schwafert (2024) - The role of blockchain for trade in global value chains: A systematic literature review and guidance for future research - <https://www.sciencedirect.com/science/article/pii/S0308596124001320?>

Figure 8: Overview DLT-based trade finance flows



Figure 9: Overview Benefits of DLT for Trade Financing



Case study 4: Trade Finance

The DLT-based trade finance market, while currently in its early stages of development, has gained traction as banks, fintechs and regulators explore how DLT can reshape financing of invoices, receivables, and letters of credit:

Standard Chartered has conducted projects involving the tokenisation of trade receivables and their distribution to institutional investors. The BIS Innovation Hub's Project Dynamo, delivered with Standard Chartered and Linklogis, similarly tested Digital Trade Tokens (DTTs) and stablecoins to support SME financing. The project showed that digitised documents, programmable settlement and tokenised value transfer can simplify processes, improve transparency and broaden access to working capital. It also incorporated ESG-linked data capture, eKYC and fully digital workflows, demonstrating how emerging digital-asset frameworks can make trade finance more efficient and trusted³⁶.

Similarly, MAS's BLOOM initiative, which enables the use of tokenised bank deposits and regulated stablecoins for multi-currency settlements, has identified trade finance as a use case, building on Standard Chartered's SC+ infrastructure.³⁷ By embedding programmable compliance and automated settlement, it permits faster, more transparent cross-border trade payments¹.

2.5 Invoice Financing

Current process and challenges

Invoice financing enables businesses to access liquidity by selling receivables at a discount rather than waiting for customers to pay. It is widely used by SMEs and mid-market suppliers who often face severe credit constraints. The World Bank estimates a global SME finance gap of \$5.7 trillion, with 40% of formal MSMEs credit constrained³⁸. This challenge has intensified as OECD data shows SME lending has declined sharply amid high interest rates and tighter credit conditions³⁹. While invoice financing offers quick liquidity, the process is traditionally manual, involves multiple intermediaries, and lacks transparency, creating inefficiencies and risk.

Lack of insight into SME governance

Financiers often struggle to assess whether SMEs can collect their invoices and whether the invoices themselves are genuine. Fraudulent practices such as fake invoices, duplicate financing, and misrepresentation of creditworthiness are common⁴⁰. Manual verification processes make it difficult to detect these issues, leading to disputes and eroding trust between SMEs and financiers. This lack of transparency creates significant credit risk and limits the scalability of invoice financing⁴¹.

Limited Investor Base

Access to invoice-financing markets is concentrated among banks and large institutional funders, with bank-owned factoring units handling over 90% of total volume in Europe⁴². The lack of smaller investor participation is largely due to regulatory complexity and the need for extensive invoice vetting to mitigate⁴³ fraud risk, which makes it economically unviable for the relatively small amounts these investors could provide.

How DLT helps address these challenges

SMEs often face challenges in accessing invoice financing due to concerns around invoice authenticity, credit risk, and limited investor participation. Traditional models rely heavily on manual verification and centralised intermediaries, which can

³⁶ Standard Chartered (2025) How blockchain and digital assets can open up trade finance. <https://www.sc.com/en/news/industries/how-blockchain-and-digital-assets-are-opening-up-trade-finance/>

³⁷ Ripple (2026) Ripple Joins Monetary Authority of Singapore's BLOOM Initiative and Partners with Unlq to Advance Programmable Settlement Infrastructure in Trade Finance. <https://ripple.com/ripple-press/ripple-joins-monetary-authority-of-singapore-s-bloom-initiative-and-partners-with-unlq-to-advance-programmable-settlement-infrastructure-in-trade-finance/>

³⁸ World Bank (2025) - Small and Medium Enterprises (SMEs) Finance: Improving SMEs' access to finance and finding innovative solutions to unlock sources of capital - <https://www.worldbank.org/en/topic/sme-finance>

³⁹ SME Finance Forum (2025) - Launch of the OECD Financing SMEs and Scoreboard: 2025 Highlights - <https://www.sme-financeforum.org/post/launch-of-the-oecd-financing-smes-and-scoreboard-2025-highlights>

⁴⁰ Mittal (2025) - Document risk in supply chain finance (SCF): What happens when invoices go wrong? - <https://academy.iccwbo.org/trade-finance/article/document-risk-in-supply-chain-finance-scf/>

⁴¹ Blackstone & Gold (2025) - Something's rotten with the state of invoice financing - <https://www.lexology.com/library/detail.aspx?g=df516899-9557-4a5c-bf83-6b93fad83969>

⁴² Bonafide Research (2025) - Europe Factoring Services Market Outlook, 2030 - <https://www.bonafideresearch.com/product/250715613/europe-factoring-services-market>

⁴³ Onino - (2025) - How to Tokenize Invoices and Trade Receivables - <https://www.onino.io/blog/how-to-tokenize-invoices-and-trade-receivables>

lead to inefficiencies, fraud risk, and high operational costs. DLT offers a transformative approach by introducing transparency, security, and programmability into the financing process. Through tokenisation, invoices can be converted into digital assets that are verifiable, traceable, and easily tradable, unlocking new opportunities for trust and liquidity in the market.

Enhance creditworthiness of invoices

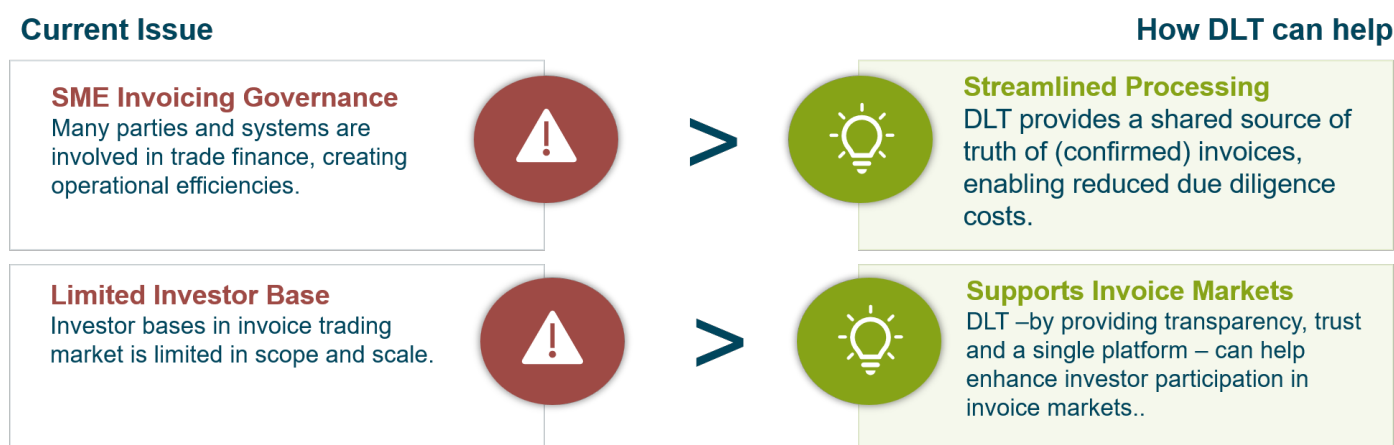
DLT can help reduce fraud risk and improve trust in invoice financing by anchoring invoice data on a tamper-resistant ledger. Each invoice becomes a unique, verifiable token, ensuring authenticity and preventing duplicate financing⁴⁴.

Buyer-backed tokens can also serve as credible claims, providing financiers with greater assurance that invoices will be paid. By being recorded on DLT, financiers gain visibility into the invoice's provenance and payment history, building confidence in the process. This transparency enables financiers to confidently extend credit, while legitimate SMEs gain improved access to invoice financing.

Solution to Limited Investor Base

DLT-based tokenisation enables fractionalisation of receivables, allowing invoices to be split into smaller, investable units. This lowers entry thresholds and makes participation economically viable for a broader range of investors, overcoming barriers created by regulatory complexity and high operational costs in traditional models. By creating a standardised, transparent infrastructure, tokenisation can diversify funding sources beyond banks and large institutions, improving liquidity and competition in the market.

Figure 10: Overview Benefits of DLT for Invoice Financing



⁴⁴ Yodapplus (2025) - Tokenizing Invoices: A Look into Digital Finance - <https://yodapplus.com/blog/tokenizing-invoices-a-look-into-digital-finance/>

Case study 5: Invoice Finance

Invoice tokenisation is being explored by large corporates and anchor buyers, large, creditworthy company at the centre of a supply chain whose purchasing power and payment terms drive financing conditions for its suppliers, to improve supply-chain resilience and liquidity for tier-1, a company that supplies products or services directly to a major buyer (anchor) in a supply chain, and upstream suppliers. By turning invoices into digital tokens backed by the anchor's credit, suppliers can access financing earlier, while buyers gain better visibility and control over working-capital flows.

The tokenisation of invoices continues to develop as infrastructure, legal frameworks, and investor appetite mature. Regulatory milestones, UK Electronic Trade Documents Act and UNCITRAL's MLETR, have provided legal certainty. With institutional pilots and DeFi-native protocols integrating compliance and identity layers, the tokenised working-capital finance is moving from proof-of-concept towards early commercial scale, with some real-world use.

Several early movers elucidate how tokenisation is being applied to real-world invoices and receivables: Olea, a joint venture between Standard Chartered and Linklogis, partnered with SWIAT to tokenise its first trade receivable, one of the first examples of bank-backed regulated tokenised invoice financing⁴⁵. Another example, Centrifuge, can tokenise invoices and receivables converting them into on-chain assets represented by NFTs, which can then be collateralised to access liquidity. They have also achieved Multichain RWA infrastructure across 6 chains, Ethereum, Plume, Base, Arbitrum, Avalanche and BNB Chain, following v3 migration⁴⁶. InvoiceMate, built on the XDC Network, tokenises invoices and the invoice lifecycle for corporates and SMEs, enabling real-time verification, tracking, and financing through blockchain-based infrastructure⁴⁷.

As already mentioned, case study 2 BIS Innovation and Standard Chartered have delivered a prototype platform on which an anchor buyer and suppliers use DTTs and stablecoins. This allows financing from institutional investors to SMEs in a supply chain, creating more robust supply chains⁴⁸.

2.6 Project Finance

Current process and challenges

Project finance is a specialised financial structure used to fund infrastructure and energy projects, relying on the project's future cash flows rather than the sponsor's balance sheet. While this model enables capital-intensive developments, it faces significant challenges that limit efficiency and liquidity. These challenges are not only operational but also structural, stemming from the complexity of stakeholders, the risk profile of long-term projects, and difficulties in attracting broader financing:

Multiple Stakeholders and Complex Documentation

Project finance involves numerous parties, sponsors, lenders, contractors, regulators, each with interdependent contracts⁴⁹. This complexity makes documentation and reconciliation slow and costly, increasing the risk of errors and delays. With syndicated loans, commonly used, settling in Europe on average between 30-40 days⁵⁰.

Risk Profile and Liquidity Constraints

Project finance carries a high-risk profile because lenders rely solely on the project's future cash flows and on a non-recourse SPV structure, exposing them to concentrated operational, and regulatory risks⁵¹. These exposures are typically illiquid, as project finance loans are private, bespoke instruments with limited secondary markets, large minimum investment sizes, and complex documentation that makes trading or refinancing difficult⁵². Institutional analyses describe project finance debt as an illiquid asset class, with investors often required to hold positions to maturity due to the absence of active trading venues⁵³.

⁴⁵ Olea (2024) – SC Ventures-backed SWIAT and Olea partner to enable trade financing on blockchain - <https://olea.net/sc-ventures-backed-swiat-and-olea-partner-to-enable-trade-financing-on-blockchain/index.html>

⁴⁶ Centrifuge (2025) - Centrifuge Completes V3 Migration, Delivering Unified Multichain RWA Infrastructure, Powered by Wormhole - <https://centrifuge.io/blog/centrifuge-v3-multichain-launch>

⁴⁷ InvoiceMate (2025) - <https://www.invoicemate.net/>

⁴⁸ BIS (2023) – Catalysing innovation for SME growth - <https://www.bis.org/publ/othp68.pdf>

⁴⁹ Gardner and Wright (2011) – Project Finance: Chapter 12 - https://www.iberglobal.com/files/project-finance_hsbcb.pdf?

⁵⁰ Paul Taylor (2024) – Challenging the Timeline Issue No.2 - <https://blog.lma.eu.com/https-blog-lma-eu-com-challenging-the-timeline-september-2024/>

⁵¹ Price and Shawa (1997) – Risk and Risk management in Project Finance - https://repository.lboro.ac.uk/articles/thesis/Risk_and_risk_management_in_project-related_finance/9439664?file=17061320

⁵² Cambridge Associates (2018) – Infrastructure Debt: Understanding the Opportunity - <https://www.cambridgeassociates.com/wp-content/uploads/2018/08/Infrastructure-Debt-%E2%80%93-Understanding-the-Opportunity.pdf>

⁵³ Insights (2023) – Project Finance - <https://uk.insightss.co/wp-content/uploads/2023/08/project-finance-uk.pdf>

How DLT helps address these challenges

DLT offers a potentially industry altering approach to project finance by addressing structural inefficiencies and liquidity constraints. Through tokenisation, shared ledgers, and smart contracts, DLT enables faster settlement, broader investor access, and real-time transparency, creating a more efficient and market-driven financing model.

Unlocking Liquidity and Broadening Investor Access

Tokenisation on DLT converts these instruments into standardised digital tokens that can be fractionalised, lowering entry barriers and enabling secondary trading⁵⁴. This creates a pathway for broader investor participation beyond banks and specialist institutions, addressing residual funding gaps when traditional lenders pull back. BNP Paribas' recent blockchain-based bond initiative highlights this benefit, aiming to enhance liquidity and attract a wider investor base through tokenisation and instant settlement⁵⁵.

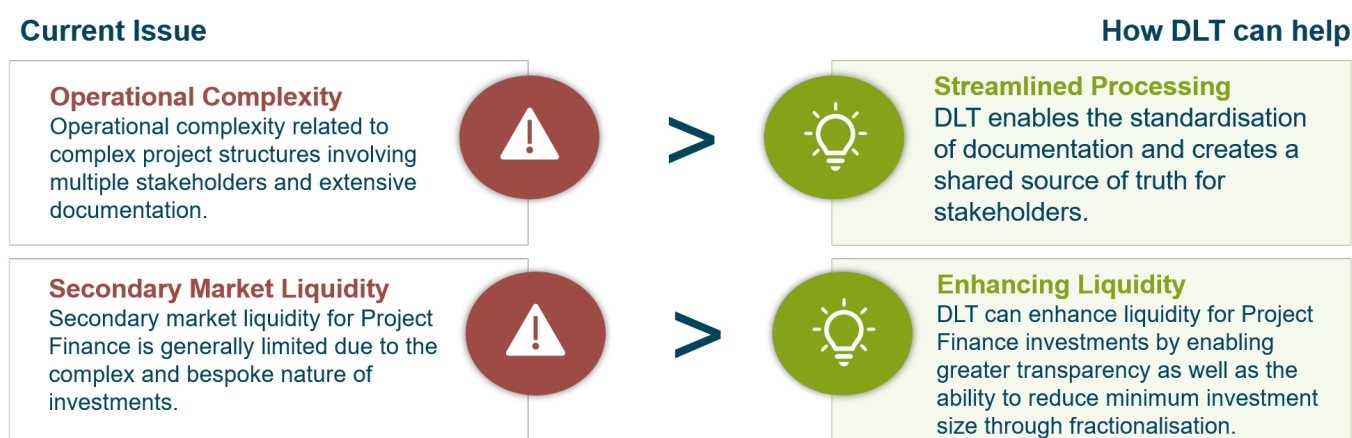
Streamlining Documentation and Settlement

DLT provides a shared, tamper-evident ledger for all stakeholders, sponsors, lenders, contractors, and regulators, eliminating fragmented systems and reducing manual reconciliation. Smart contracts can automate interdependent obligations, milestone-based disbursements, and compliance checks, lowering administrative burdens and operational risk. Compared to traditional syndicated loans that settle in 30–40 days, blockchain-based workflows enable near-instant settlement and real-time visibility. Evidence from early digital bond and loan projects confirms that blockchain improves syndicated loan workflows by enhancing transparency, reducing settlement times and bringing operational efficiencies⁵⁶.

Enhancing Transparency and Risk Oversight

DLT creates immutable records of project milestones, cash flows, and covenant compliance, reducing information asymmetry and strengthening investor confidence in projects with unpredictable cash flows. Real-time data access supports accurate pricing and risk monitoring throughout the project lifecycle, mitigating operational risk and improving trust among participants. Smart contracts not only automate tasks but also ensure compliance and provide auditable, synchronised data, strengthening transparency.

Figure 11: Overview Benefits of DLT for Project Finance



⁵⁴ WEF (2025) - Unlocking inclusive growth: How tokenization is transforming public works investment - <https://www.weforum.org/stories/2025/09/unlocking-inclusive-growth-how-tokenization-is-transforming-public-works-investment/>

⁵⁵ Russell-Walling (2022) - BNP Paribas embraces tokenisation for project finance bonds - <https://www.thebanker.com/content/2585d474-0a40-5058-91d3-946cdc5c77d7>

⁵⁶ Versna (2025) - Morgan Stanley Agented Broadly Syndicated Loan Deals Go Live on Versana's Real-Time Digital Data Platform - <https://versana.io/morgan-stanley-agented-broadly-syndicated-loan-deals-go-live-on-versanas-real-time-digital-data-platform/>

Case study 6: DLT-based Project Finance

Tokenisation is modernising project finance, enabling infrastructure and energy projects to raise funds through digital, blockchain-based instruments rather than traditional paper bonds or syndicated loans. It is still in early stages, pilot deals from major banks and energy companies illustrate how tokenisation can streamline financing for large scale projects, although most early deals have been linked to sustainability.

BNP Paribas and EDF ENR issued a tokenised renewable-energy project bond via BNP Paribas' Asset Foundry platform, which refinanced a French solar project⁵⁷. The issuance was performed on public Ethereum blockchain, demonstrating how regulated institutions can use public-network infrastructure for real world financing while maintaining compliance controls. The transaction also tested token reversibility, with the digital bond successfully converted back into a traditional form within 48 hours, showing how digital instruments can operate alongside traditional securities frameworks.

Versana is backed by a consortium of leading global banks, including J.P. Morgan, Bank of America, Citi, Credit Suisse, Deutsche Bank, Morgan Stanley, U.S. Bancorp, Wells Fargo, and Barclays, and operates on the Canton Network using DAML smart contracts⁵⁸. While its primary focus is syndicated loans and private corporate credit, these instruments are widely used in project finance for large-scale infrastructure and energy projects.

2.7 Private Credit

Current process and challenges

Private credit refers to non-bank lending, where institutional investors provide loans directly to corporates, often as an alternative to traditional bank financing. With 17% compound annual growth over the past 5 years, private credit volumes have increased significantly in recent years, reaching approximately \$1.8 trillion in assets under management across private credit strategies as of 2024⁵⁹. Despite recent growth, the market remains structurally constrained by limited liquidity and fragmented data, which reduces attractiveness for investors and can limit scalability as a financing channel for corporates.

Liquidity constraints

Investors are often tied into positions for extended periods, typically 7-10 years⁶⁰, with limited options to exit early. Around 70% of investors cite liquidity as a major barrier⁶¹. Unlike private equity, the secondary market for private credit is still nascent and relatively illiquid, with limited standardisation and weak price discovery. This lack of liquidity creates a "lock-in" effect, discouraging participation and driving liquidity premiums higher, making it harder to exit positions compared to public markets. Constrained investor participation reduces flexibility for issuers when refinancing needs arise or market conditions change.

Transparency issues

About 64% of investors cite lack of transparency as a concern⁶². Fragmented data systems, infrequent reporting, and lack of standardised identifiers make it difficult for investors to assess performance and for managers to meet growing regulatory demands and to monitor exposures and covenant compliance consistently across portfolios. This lack of transparency creates operational inefficiencies and increases risk exposure. In private credit, these issues hinder timely decision-making and amplify compliance complexity, monitoring, and governance challenges

How DLT helps address these challenges

On-chain solutions are offering new opportunities for private credit by tokenising loan agreements and related cash flows into digital assets:

Liquidity

DLT can enable the fractionalisation of both individual private credit deals and fund interests, while introducing standardised digital identifiers and automated compliance workflows. These features make it possible to create a transparent, efficient secondary market for private credit, reduce friction in transferring exposures and support more viable secondary market

⁵⁷ BNP Paribas (2022) – BNP Paribas and EDF ENR partner on first renewable project bond as a digital asset - <https://group.bnpparibas/en/press-release/bnp-paribas-and-edf-enr-partner-on-first-renewable-project-bond-as-a-digital-asset>

⁵⁸ Versna – About Us - <https://versana.io/about/>

⁵⁹ Morgan Stanley (2025) – Evolution of Direct Lending - https://www.morganstanley.com/im/publication/insights/articles/article_evolutionofdirectlending.pdf

⁶⁰ LaBelle (2025) – Potential Opportunities and Risks of Private Credit - <https://www.indexologyblog.com/2025/03/17/potential-opportunities-and-risks-of-private-credit/>

⁶¹ Coalition Greenwich (2023) - Wealth and Asset Managers Focus on Private Credit - <https://www.greenwich.com/market-structure-technology/wealth-and-asset-managers-focus-private-credit>

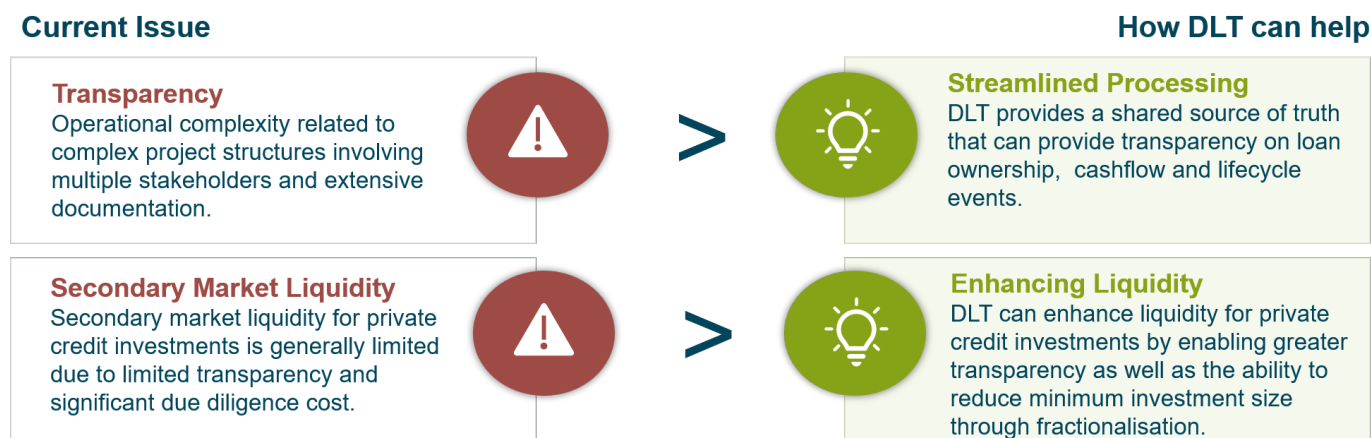
⁶² Coalition Greenwich (2023) - Wealth and Asset Managers Focus on Private Credit - <https://www.greenwich.com/market-structure-technology/wealth-and-asset-managers-focus-private-credit>

activity over time. This would reduce liquidity premiums and create exit options for investors. Combined with AI-driven due diligence, onboarding and risk assessment become faster and more cost-effective, supporting the development of a robust secondary market. This broadens the range of potential investors, including retail participants, and expands the capital base available to private credit borrowers, providing easier access to the asset class⁶³.

Transparency

Lastly, transparency can be significantly improved with DLT because all transaction and ownership data is stored on a shared, immutable ledger. This creates a single source of truth accessible to authorised parties, enabling real-time visibility into fund holdings, cash flows, and underlying assets. Investors benefit from greater confidence in data accuracy, while managers can streamline reporting and compliance, monitoring, and governance.

Figure 12: Overview Benefits of DLT for Private Credit



Case study 7: DLT Applications in Private Credit

Recent market data highlights private credit as a leading driver in the tokenised asset space. In the first half of 2025, it accounted for over half of tokenised RWAs, at \$14 billion. Private credit tokenisation represents a powerful evolution in private credit. According to S&P Global Special Report, tokenisation can help unlock liquidity, reduce back-office costs and increase visibility into loan portfolios by using programmable smart contracts⁶⁴. Provenance is the leading network used for tokenised Private Credit accounting for 72.7% documented on RWA.xyz⁶⁵ as of November 2025, though there are a number of different networks used.

Tradable, a joint venture between a leading private credit firm and a data security company, have tokenised \$2.1+ billion in private credit on the ZKsync layer 2 blockchain⁶⁶. WisdomTree, a global investment firm, on the other hand, has launched a tokenised private credit and alternative income fund (CRDT) on its own regulated digital assets platform⁶⁷. Demonstrating the possibility

Apollo have launched a tokenised version of its Diversified Credit Fund, this enables accredited investors access to blockchain-based private credit strategies, notably corporate direct lending and asset-backed finance. Securitise, the tokenisation partner of BlackRock, for Apollo is using a partnership with Wormhole that allows different blockchain networks to converse, in turn Apollo is offered Aptos, Avalanche, Ethereum, Ink, Polygon, and Solana⁶⁸.

⁶³ E.Gunter,A.O'Neill,S.Furbe&D.Easthope (2024) – Tokenised Private Credit: A New World Frontier for Real World Assets - <https://www.spglobal.com/en/research-insights/special-reports/tokenized-private-credit>

⁶⁴E. Gunter, A. O'Neill, S.Furber, D. Easthope (2025) - Tokenised Private Credit - <https://www.spglobal.com/en/research-insights/special-reports/tokenized-private-credit>

⁶⁵ Rwa.wyz - Private Credit - <https://app.rwa.xyz/private-credit>

⁶⁶ Tradeable - <https://www.tradable.xyz/>

⁶⁷ WisdomTree (2025) - WisdomTree Brings Private Credit On chain with the Launch of Tokenized WisdomTree Private Credit and Alternative Income Digital Fund (Token: CRDT) - <https://ir.wisdomtree.com/news-events/press-releases/detail/755/wisdomtree-brings-private-credit-onchain-with-the-launch-of>

⁶⁸Jeff Gapusan (2025) – Apollo's Tokenized Fund Hits Wall Street's Hot Buttons - <https://www.forbes.com/sites/digital-assets/2025/01/31/apollos-tokenized-fund-hits-wall-streets-hottest-topics/>

2.8 Fixed Income

Current Process and Challenges

Fixed income refers to market-based debt financing by corporates and others through instruments such as commercial paper, notes, and bonds. These typically feature principal redemption at a fixed maturity date and predictable coupon payments. Today, issuance, servicing, and settlement involve multiple intermediaries for distribution, custody, payment processing, and record-keeping. The interaction between these systems makes end-to-end processes relatively manual or semi-automated, contributing to longer settlement timelines (often T+2 in many markets) and higher operational effort. Global fixed-income markets reached approximately \$145.1 trillion outstanding in 2024⁶⁹, highlighting the scale and complexity of current infrastructure.

Liquidity Constraints for Smaller Bonds

Smaller bond issuances tend to trade less frequently and attract lower levels of investor engagement, resulting in higher liquidity premia. Limited secondary-market depth makes these bonds less attractive to investors, which in turn reinforces market preferences for larger, more liquid issues.

High Minimum Issuance Requirements

Smaller and mid-sized firms face a significant barrier to entry because market norms favour large issuances. Larger bonds are preferred as they offer greater liquidity, attract a broader investor base, and spread administrative costs more efficiently. This dynamic often forces SMEs to rely on bank financing, which can be costly and restrictive.

Operational Cost Inefficiency for (Smaller) Issuances

Smaller bonds are often uneconomical because of significant fixed costs related to bond issuances, related to legal and regulatory compliance as well as the servicing of bonds. Larger bonds distribute these costs across a broader issuance size and investor base, making them more cost-efficient and more attractive to investors.

In addition, current issuance processes typically encourage corporates to raise funding in large, infrequent tranches rather than aligning issuance closely with immediate financing needs. High fixed costs, lengthy issuance processes, and settlement frictions make it inefficient to issue smaller amounts of debt on a more frequent or on-demand basis. As a result, issuers often pre-fund ahead of need, leading to excess liquidity on balance sheets and higher carry costs, while limiting flexibility in treasury funding strategies.

How DLT Helps Address These Challenge

DLT offers a shared, programmable infrastructure that can streamline fixed-income processes, reduce operational friction, and unlock new market opportunities. By combining tokenisation, smart contracts, and real-time settlement capabilities, DLT addresses inefficiencies in issuance, improves liquidity, and lowers barriers for smaller firms to access bond markets. Research suggests that for investment-grade bonds, DLT can reduce operational cost by between 40-60%.⁷⁰

Reducing Issuance Cost Through Operational Efficiency

DLT enables the management of the entire fixed-income lifecycle to occur on a shared ledger, bringing together relevant stakeholders as well as cash assets required for issuance, redemption and lifecycle events. This enables automation of lifecycle management events through the use of smart contracts operating if-then logics. This reduces operational steps and overhead for events such as coupon payments as well as redemptions⁷¹. Real-world pilots have shown settlement times reduced from days to minutes, error rates lowered through automation, and projected cost savings of 40–60%⁷². As an example, Figure 13 below shows the beneficial operational impact of DLT across the fixed-income lifecycle, while Figure 14 illustrates in greater detail the simplification, streamlining and automation DLT can achieve for bond coupon payments.

Beyond cost reduction, these operational efficiencies can fundamentally change how corporates access debt markets. Lower issuance friction and faster, more automated execution make it increasingly feasible to issue debt in smaller amounts and at the point when funding is required, rather than relying on large, pre-funded issuances. This more targeted approach to capital raising allows corporates to better align funding with underlying cash needs, reduce excess liquidity, and improve overall balance sheet efficiency.

⁶⁹ SIFMA (2025) - 2025 Capital Markets Fact Book - <https://www.sifma.org/wp-content/uploads/2024/07/2025-SIFMA-Capital-Markets-Factbook.pdf>

⁷⁰ GFMA (2025) The Impact of Distributed Ledger Technology in Capital Market. <https://www.gfma.org/wp-content/uploads/2025/08/1.-full-report-impact-of-dlt-in-cap-mkts-final-1.pdf>

⁷¹ Daskalakis, N. Lianos, E., Mitropoulos, Ch., Tantis, G. and Theofilis, S. (2026), "Security Token Offerings – A General Literature Review", unpublished manuscript

⁷² BNP Paribas (2024) – Digital bonds using blockchain vs traditional bonds - <https://globalmarkets.cib.bnpparibas/digital-bonds-blockchain-vs-traditional/>

Figure 13: Operational change due to use of DLT across bond trade lifecycle⁷³

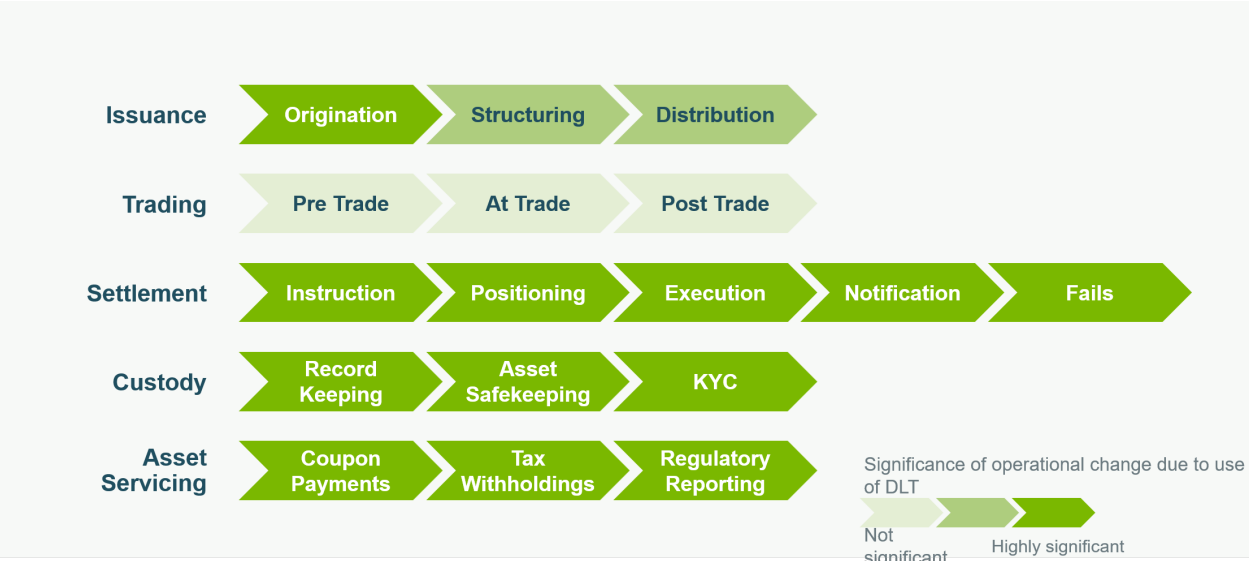
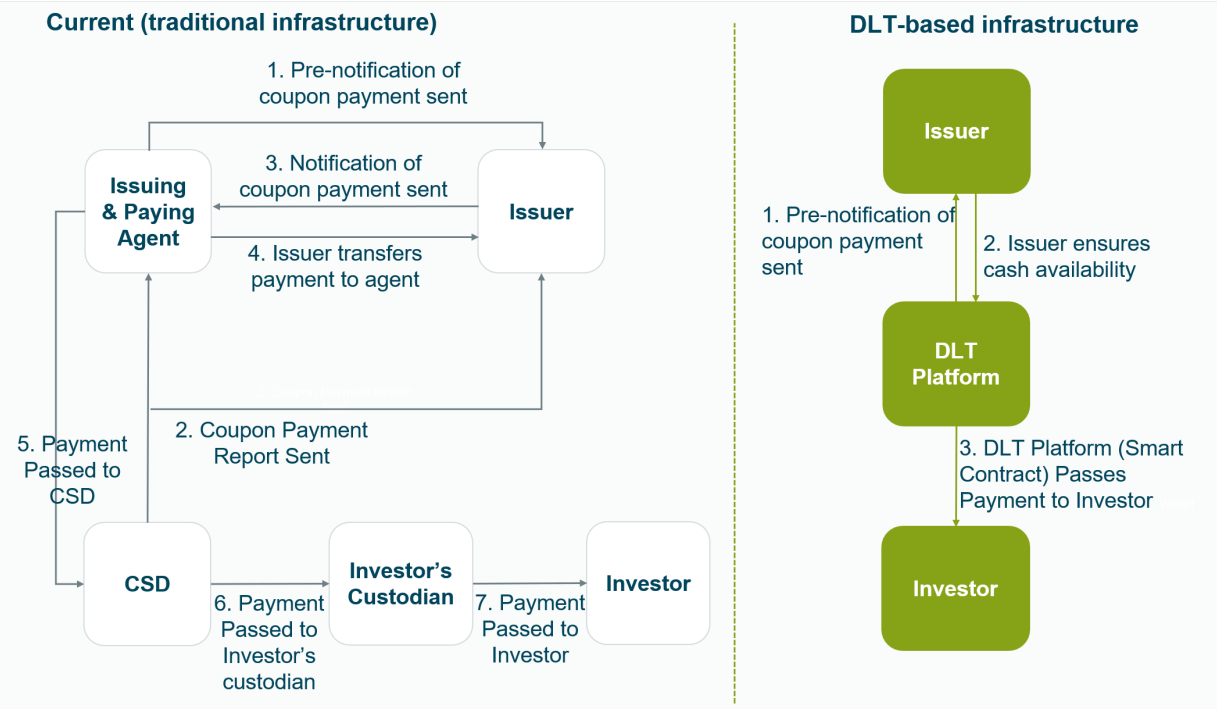


Figure 14: DLT enables simplification of coupon payment process



Improving Liquidity and Investor Access

DLT supports fractional ownership – the breaking up of a tokenized asset into smaller-denomination tokens⁷⁴, which can open access to a broader investor base and has the potential to make smaller tranches more tradable. While large bonds are likely to remain more liquid, widespread adoption of DLT could narrow the gap by improving the tradability of smaller bonds and creating new opportunities for SMEs.

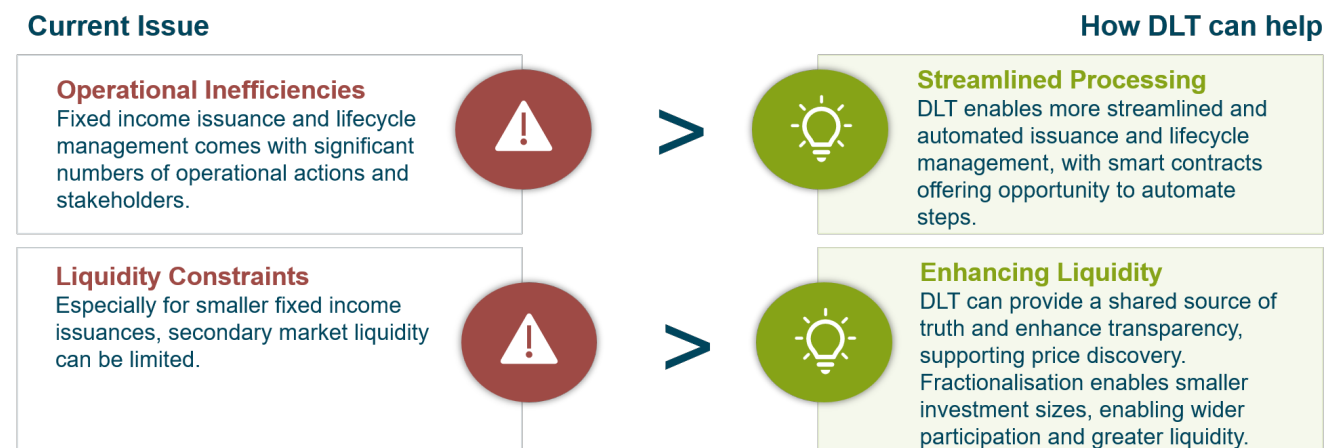
Liquidity can be further enhanced through enhanced insight bond transactions: as transactions are recorded (settled) on the distributed ledger, information about price formation is enhanced, which can enable more accurate and precise pricing of the bond, in turn enabling greater institutional participation in these markets. Moreover, it is expected that the trend of investment vehicles like Money Market Funds (MMFs) moving ‘on-chain’ continues. This will likely create growing demand for DLT-based bonds for such DLT-based funds to invest in.

⁷³ AFME(2024) - Scaling DLT-Based SSA and Government Bond Markets - <https://www.afme.eu/media/kkdfsudg/afmedltssabondsissuers0811.pdf>
⁷⁴ GFMA (2025) – The Impact of Distributed Ledger Technology in Capital markets - <https://www.gfma.org/wp-content/uploads/2025/08/1.-full-report-impact-of-dlt-in-cap-mkts-final-1.pdf>

Possibility of Greater Access to Bond Markets for Smaller and Medium-Sized Firms

High minimum issuance sizes and fixed costs have historically excluded SMEs from public debt markets. While operational efficiencies from DLT benefit all issuers, they are particularly transformative for smaller firms by reducing cost barriers and lowering the economically viable minimum issuance size. Fractionalisation of bonds can also broaden the investor base, enabling smaller tranches to attract demand without sacrificing compliance or transparency. Over time, these changes could make smaller tranches more viable, improving diversity in the fixed-income market.

Figure 15: Overview Benefits of DLT for Fixed Income



Case study 8: DLT-based fixed-income issuances

DLT is increasingly seen as a new way of debt financing for corporates by bringing debt issuance, settlement, and lifecycle events onto DLT rails.

Global issuance of DLT-based fixed income instruments totalled €1.69 billion as of 2025 YtD, marking a 629% increase in fixed income issuance compared to 2021 levels⁷⁵.

There has been a significant number of DLT-based fixed income instruments in recent years. In the corporate space, Siemens has, for instance, explored DLT-based bond issuance through a 60 million bond issued on the Polygon network in 2023, and a EUR 300 million digital bond on the Regulated Layer 1 DLT platform in 2025⁷⁶. In addition to bond issuance, Siemens has also used DLT for short-term funding, settling digital commercial paper on JP Morgan's Onyx blockchain, showing using of DLT for immediate funding needs⁷⁷.

In a number of jurisdictions, the public sector is actively supporting corporate bond issuance on DLT through grant schemes: the monetary authorities in Singapore (MAS)⁷⁸ and Hong Kong (HKMA)⁷⁹ have announced bond grant schemes to cover a significant portion of (legal) expenses for corporates looking to explore DLT-based bond issuance.

The public sector itself has also become more active in applying DLT to its own sovereign debt issuances: in June 2025, Luxembourg issued DLT-based sovereign paper totaling EUR 50 million⁸⁰, in 2024, the Republic of Slovenia issued EUR 30 million through BNP Paribas' Neobonds DLT platform⁸¹. The UK Government is currently in the procurement process for the issuance of a DLT-based Gilt. Furthermore, European supranational institutions like EIB, as well as the⁸². Hong Kong Government, have issued DLT-based bonds, in through platforms such as GS DAP (Goldman Sachs)⁸³, HSBC Orion⁸⁴, and Societe Generale Forge.

⁷⁵ AFME (2025) - DLT-Based Capital Market Report - <https://www.afme.eu/media/bskh0gmm/afme-dlt-report-2025-september.pdf>

⁷⁶ Siemens (2024) - Siemens remains a pioneer - <https://press.siemens.com/global/en/pressrelease/siemens-remains-pioneer-another-digital-bond-successfully-issued-blockchain>

⁷⁷ Sandor and Alpher (2024) - JP Morgan's Onyx Blockchain Used for Siemens' Digital Commercial Paper Settlement - <https://www.coindesk.com/business/2024/09/23/jp-morgans-onyx-blockchain-used-for-siemens-digital-commercial-paper-settlement>

⁷⁸ Clifford Chance (2025) - Singapore Launches Digital Bond Grant Scheme - <https://www.cliffordchance.com/insights/resources/blogs/talking-tech/en/articles/2025/01/singapore-launches-digital-bond-grant-scheme.html>

⁷⁹ HKMA (2025) - Guideline on the Digital Bond Grant Scheme - https://www.hkma.gov.hk/media/eng/doc/key-functions/ifc/bond-market-development/Guideline_on_the_Digital_Bond_Grant_Scheme.pdf

⁸⁰ AO Sherman (2025) - Luxembourg issues government's first digital treasury certificates issuance using DLT - <https://www.aoshearman.com/en/news/luxembourg-issues-governments-first-digital-treasury-certificates-issuance-using-dlt>

⁸¹ BNP Paribas (2025) - First Eurozone Sovereign Digital Bond issuance for the Republic of Slovenia issued and placed by BNP Paribas - <https://group.bnpparibas/en/press-release/first-eurozone-sovereign-digital-bond-issuance-for-the-republic-of-slovenia-issued-and-placed-by-bnp-paribas>

⁸² Societe Generale (2023) - Societe Generale issues a first digital green bond on a public blockchain - <https://www.societegenerale.com/en/news/press-release/first-inaugural-digital-green-bond-public-blockchain>

⁸³ Digital Asset (2024) - Digital bonds take centre stage - <https://blog.digitalasset.com/blog/digital-bonds-take-center-stage-transactions-tell-the-story>

⁸⁴ HSBC (2024) - HSBC Delivers World's First Multi-Currency Digital Bond Offering - <https://www.business.hsbc.com/en-gb/insights/financing/first-multi-currency-digital-bond-offering>

2.9 Private Equity

Current Process and Challenges

Private equity refers to investments in privately-held companies, generally conducted through funds or direct deals. These transactions involve bespoke agreements, due diligence, and long lock-up periods, with investors typically holding positions for years. This brings with it a number of challenges:

Illiquidity

Private equity investments typically lock up capital for 10+ years⁸⁵, and secondary-market trading represents less than 5% of total private equity Assets Under Management (AUM)⁸⁶. This lack of liquidity forces investors to hold positions to maturity or sell at steep discounts, creating illiquidity premiums and limiting portfolio flexibility.

High minimum investment sizes

Private equity funds often require large minimum commitments, such as \$1 million or more⁸⁷, effectively restricting access to institutional investors and ultra-high-net-worth individuals. These thresholds exclude smaller investors and hinder broader market participation.

Opaque markets and limited transparency

Private equity valuations and performance reporting have long relied on subjective models and infrequent updates, with no universally enforced standard. ILPA's updated templates (effective for new funds from 2026) aim to improve consistency, but adoption is voluntary and contractual, not legal⁸⁸. This lack of mandatory standardisation sustains opacity and information asymmetry, making it hard for investors to assess risk, compare funds, and trust returns, raising systemic concerns as private markets grow to trillions in AUM.

How DLT Helps Address These Challenges

DLT can deliver significant benefits for private equity by addressing structural inefficiencies and enabling greater tradability of private equity instruments, which can in turn enhance valuations and PE capital available:

Unlocking Liquidity

DLT-based private equity converts interests into digital tokens that can be traded on blockchain-based platforms, creating new secondary market opportunities. Fractional ownership and programmable compliance allow investors to transfer positions more easily, reducing lock-up constraints and mitigating illiquidity premiums⁸⁹.

Lowering Minimum Investment Sizes

Fractionalisation through tokenisation reduces minimum commitment thresholds, allowing smaller investors to participate in private equity funds⁹⁰. Smart contracts enforce transfer restrictions and investor eligibility, ensuring compliance while broadening access. Combined with AI-driven tools for affordable due diligence, these innovations make participation more practical for a wider investor base⁹¹.

Improving Transparency

DLT provides an immutable, auditable record of ownership and transactions, reducing reliance on fragmented data and subjective inputs for valuations. By digitising lifecycle events, DLT creates a single source of truth that mitigates operational risk and supports consistent reporting⁹². Smart contracts can automate capital calls, distributions, and compliance checks, while integrated data management ensures standardisation across the investment lifecycle⁹³. Real-time data sharing, combined with robust governance frameworks, fosters trust and enables informed decision-making across the private markets ecosystem.

⁸⁵ Legal Clarity (2025) - How Long Do Private Equity Firms Keep Companies? - <https://legalclarity.org/how-long-do-private-equity-firms-keep-companies/>

⁸⁶ Snyder, Sun and Reade (2022) – The Evolution of the Private Equity Secondary Market - <https://www.caisgroup.com/articles/the-evolution-of-the-private-equity-secondary-market>

⁸⁷ Swedroe (2024) – Private Equity: How Much Should You Allocate? - <https://www.morningstar.com/alternative-investments/private-equity-how-much-should-you-allocate>

⁸⁸ ILPA – ILPA Reporting Template - <https://ilpa.org/industry-guidance/templates-standards-model-documents/updated-ilpa-templates-hub/ilpa-reporting-template/>

⁸⁹ VCI Institute – Tokenising Private Equity: The Next Leap in Liquidity and Global Access - <https://www.vciinstitute.com/blog/tokenizing-private-equity-the-next-leap-in-liquidity-and-global-access>

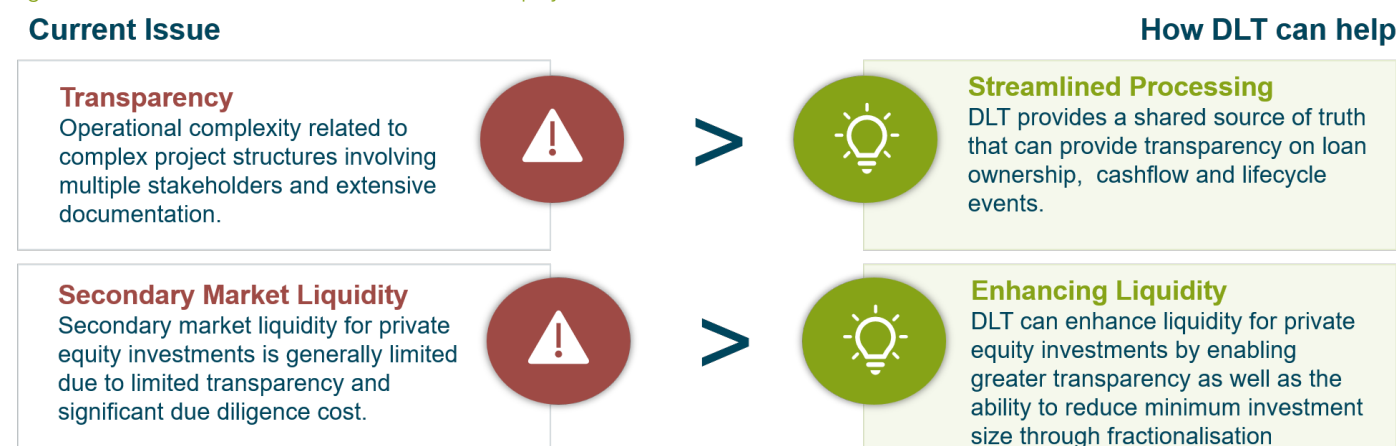
⁹⁰ VCI Institute – Tokenising Private Equity: The Next Leap in Liquidity and Global Access - <https://www.vciinstitute.com/blog/tokenizing-private-equity-the-next-leap-in-liquidity-and-global-access>

⁹¹ Tzanev (2025) - AI-Driven Due Diligence Through To Exit: How Private Equity Firms Are Using GenAI in 2025 - <https://www.getdynamiq.ai/post/ai-driven-due-diligence-through-to-exit-how-private-equity-firms-are-using-genai-in-2025>

⁹² Anthony Stevens (2018) – Blockchain in private equity - <https://www.northerntrust.com/documents/articles/asset-servicing/blockchain-in-private-equity.pdf>

⁹³ Kenson Investments (2025) – Smart Contract Escrow in Private Equity Deals - <https://kensoninvestments.com/smart-contract-escrow-in-private-equity-deals/>

Figure 16: Overview Benefits of DLT for Private Equity



Case Study 9: DLT in Private Equity

Examples include Citi's proof of concept, which collaborated with Wellington Management and WisdomTree to tokenise a simulated private equity fund on Avalanche Spruce. Distribution rules were embedded into smart contracts, identity credentials were tested for transfer control, and tokenised fund units were used as collateral in an automated lending setup, showcasing the potential for compliance automation and interoperability⁹⁴.

Hamilton Lane has taken significant steps by tokenising its \$2.1 billion Equity Opportunities Fund V via Securitize on Polygon, reducing minimum investment from \$5 million to \$20,000 for qualified investors⁹⁵. The firm also partnered with Republic to allow retail participation starting at \$500⁹⁶, and with Allfunds Blockchain to expand distribution across Europe in the future⁹⁷, highlighting how tokenisation can democratise access to private markets.

JPMorgan has advanced the space by completing its first tokenised private equity fund transaction on its Kinexys Fund Flow blockchain platform in partnership with Citco⁹⁸.

2.10 Public Equity

Current Process and Challenges

Public equity markets operate through regulated exchanges, with issuance typically conducted via IPOs that require extensive disclosures, regulatory approvals, underwriting, and listing activities. Trading subsequently takes place through established trading, clearing and settlement infrastructure. While effective, these processes also bring about a number of challenges outlined below:

Reconciliation complexity and fragmented records

Public equity markets rely on multiple intermediaries (e.g., brokers, custodians, CSDs and CCPs), each maintaining their own books and records⁹⁹. As a result, post-trade processes involve repeated matching and reconciliation of trade details, positions, and asset ownership across siloed systems. These reconciliations are essential for risk management and control, but they introduce operational overhead, create the potential for breaks and disputes, and often require manual investigation and exception handling. Corporate actions (e.g., dividends and stock splits) can further increase complexity, as

⁹⁴ Citi (2024) - Citi Collaborates with Wellington Management and WisdomTree to Explore Tokenization of Private Markets - <https://www.citigroup.com/global/news/press-release/2024/citi-collaborates-with-wellington-management-and-wisdomtree-to-explore-tokenization-of-private-markets>

⁹⁵ Hamilton Lane (2023) - Hamilton Lane's \$2.1 Billion Flagship Direct Equity Fund Now Available for Investment on Securitize - <https://www.hamiltonlane.com/en-us/news/direct-equity-fund-on-securitize>

⁹⁶ Hamilton Lane (2025) - Hamilton Lane Pioneers Access to Private Markets with the First U.S. Infrastructure Evergreen Fund Available to Retail Investors on Republic with a Minimum Initial Investment of \$500

⁹⁷ Hamilton Lane (2024) - Allfunds Partnership Tokenizes Private Markets Access - <https://www.hamiltonlane.com/en-us/news/allfunds-tokenized-private-markets>

⁹⁸ JP Morgan (2025) - J.P. Morgan Asset & Wealth Management and Citco complete first transaction using Kinexys Fund Flow, a new solution from Kinexys by J.P. Morgan - <https://www.jpmorgan.com/payments/newsroom/kinexys-fund-flow-awm-citco-transaction>

⁹⁹ BIS (2018) - Reducing the risk of wholesale payments fraud - <https://www.bis.org/cpmi/publ/d178.pdf>

inconsistencies in data, messaging, and processing across participants can lead to additional reconciliation effort and delayed downstream processing.

IPO complexity and cost

Initial Public Offerings (IPOs) can prove expensive and time-consuming for issuers. While much of this process consists of steps necessary to ensure investor transparency and protection, operational inefficiencies can cause additional costs or delays in primary trades settlement¹⁰⁰.

How DLT helps address these challenges

DLT can, over time, support a significant change to public equity markets by reducing issuance complexity and streamlining settlement. By using shared ledgers, tokenisation, and programmable workflows, DLT can support near-instant settlement, more consistent cross-border processes, and digital-first issuance models that together contribute to a more efficient and transparent market structure.

Reducing reconciliation effort and improving data consistency

DLT can provide a shared, synchronised record of asset ownership and transaction updates across authorised participants, reducing reliance on duplicated ledgers and repeated bilateral reconciliations¹⁰¹. Where participants reference a common source of truth, discrepancies can be reduced and exception handling streamlined. Smart contracts can further standardise processing by automating rules-based workflows (e.g., eligibility checks and certain corporate action mechanics), improving consistency across parties and reducing operational friction. In addition, the auditability of a shared ledger can support clearer traceability of changes and improve transparency for both market participants and supervisors.

Simplifying IPOs and Reducing Costs

Tokenisation allows companies to issue digital shares on a blockchain, enabling certain issuance steps to be handled more efficiently. Smart contracts can, for instance, automate compliance and investor eligibility checks, reducing paperwork and accelerating execution, while lowering fees and complexity for issuers¹⁰², particularly those for whom traditional listing processes present proportionally higher operational demands. For SMEs in particular, these efficiencies make issuance more accessible and provide a more phased, cost-effective route toward a full listing.

Case Study 10: DLT in Public Equity

Still in its infancy, public equity tokenisation is gaining momentum, with a total market value of \$963.04 million as of early 2026, recording a three-month increase of 30.9% and 364.3% respectively, signalling accelerating adoption¹. Across the EU and UK, various DLT platforms enable the native issuance of public equity on distributed ledgers. Examples include Archax, LISE, 21X, Securitize and others.

A notable infrastructure development in the EU is France's Lightning Stock Exchange (Lise), which has secured a DLT Trading and Settlement System (TSS) licence under the EU DLT Pilot Regime. This permits a single venue to combine trading and post-trade on a blockchain, supporting instant on-chain settlement and potentially 24/7 trading. Backed by BNP Paribas, Bpifrance and CACEIS, Lise is targeting tokenised IPOs for corporates – including SMEs – from early 2026, illustrating how regulated, on-chain market infrastructure could simplify listings and reduce friction in public markets¹.

Such offerings for DLT-native public-equity issuance should not be confused with the tokenisation of existing (traditional) equity stock, which has caused some controversy and regulatory and investor-protection discussions in the past year in both the US and Europe.¹⁰³

¹⁰⁰ EY (2024) – Navigating the reporting requirements related to an initial public offering - <https://www.ey.com/content/dam/ey-unified-site/ey-com/en-us/technical/accountinglink/documents/ey-tl23639-241us-06-13-2024.pdf>

¹⁰¹ GFMA (2025) – The Impact of Distributed Ledger Technology in Capital Markets – <https://gfma.org/wp-content/uploads/2025/08/1.-full-report-impact-of-dlt-in-cap-mkts-final-1.pdf>

¹⁰² Legal Clarity (2025) – The Tokenisation of Stocks: How it Works and Its Impact - <https://legalclarity.org/the-tokenization-of-stocks-how-it-works-and-its-impact/>

¹⁰³ Cryptonews (2025) EU regulator warns tokenized stocks may mislead retail investors. <https://cryptonews.net/news/finance/31540848/>

Figure 17: Overview Benefits of DLT for Public Equity

Current Issue

IPO efficiency

Operational complexity related to complex project structures involving multiple stakeholders and extensive documentation.



Access

Secondary market liquidity for private equity investments is generally limited due to limited transparency and significant due diligence cost.



How DLT can help

Streamlined Processing

DLT provides a shared source of truth that can provide transparency on loan ownership, cashflow and lifecycle events.



Enhancing Liquidity

DLT can enhance liquidity for private equity investments by enabling greater transparency as well as the ability to reduce minimum investment size through fractionalisation



3. Strategy for DLT in Treasury Management

The adoption of DLT within treasury requires a coordinated and strategic approach on the part of corporates, one that extends beyond mere piloting of individual use cases and also considers from the start how DLT solutions are integrated into existing technology, data and reporting architectures; how non-DLT architecture can be streamlined to align with DLT infrastructure; and how the emerging DLT ecosystem can be shaped to benefit the organisation.

3.1 Adoption approach

DLT is rapidly moving from early adoption and proof-of-concept towards mainstream production adoption, as the ecosystem matures, key asset classes – deposits, cash, MMFs – become available in tokenised form, and regulatory, legal and accounting clarity emerges.

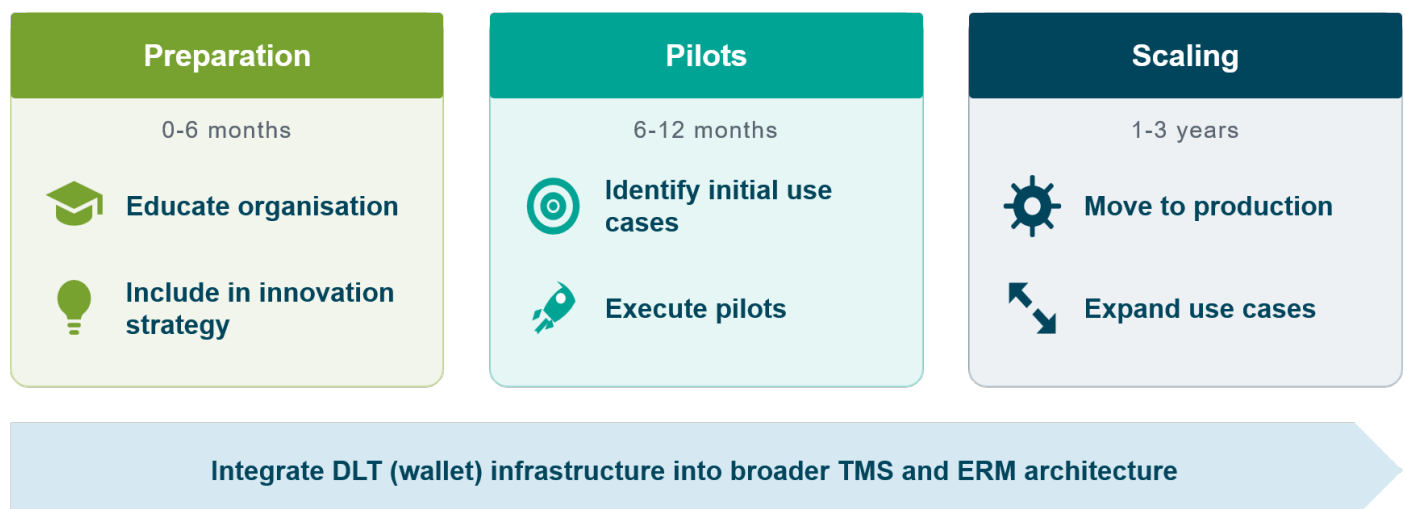
For corporates, this implies that DLT and tokenisation must be treated as a near-term development rather than a long-term possibility. Key, therefore, is to begin preparing the organisation for DLT-based treasury management, by considering DLT's key characteristics and potential benefits, developing an understanding of how it fits within broader treasury innovation strategy. Key to this is developing an understanding of both technical and organisational transformation that DLT will induce, away from traditional treasury management cycles towards 'always-on', continuous, customised and optimised treasury management.

Key to the adoption approach is identifying inefficiencies and opportunities where initial DLT use cases could begin to provide value, in line with business priorities and architectural capabilities.

As highlighted in Figure 18, initial use cases could centre on utilising DLT-based cash instruments and platforms to enable pooling and, 24/7 allocation of liquidity across corporate entities, for instance using tokenised deposits solutions. Based on results of initial pilots, a phased approach towards expansion of (production) use cases can be pursued. Such additional use cases can involve utilisation of tokenised MMFs for optimised investment management, or consideration given to issuance of a DLT-based fixed-income instrument.

Banks and others have in recent years created and expanded corporate digital assets platforms, enabling creation and management of DLT-based assets, including for treasury management purposes. TMS providers have increasingly integrated connectivity with such platforms into treasury software offerings, enabling consolidated management of such DLT-based activities. In commencing implementation of DLT-based treasury management, it is advisable to pair gradual use case scaling with an evolving, strategic approach to the integration of DLT capabilities and platforms into existing TMS and ERP architecture. Such an approach should take account a need for access to multiple digital assets custodians and platforms, required resilience as well as efficiency considerations.

Figure 18: DLT implementation trajectory



3.2 What use cases to focus on now and over time

In designing a gradual implementation approach, corporates should consider factors internal and external to the organisation:

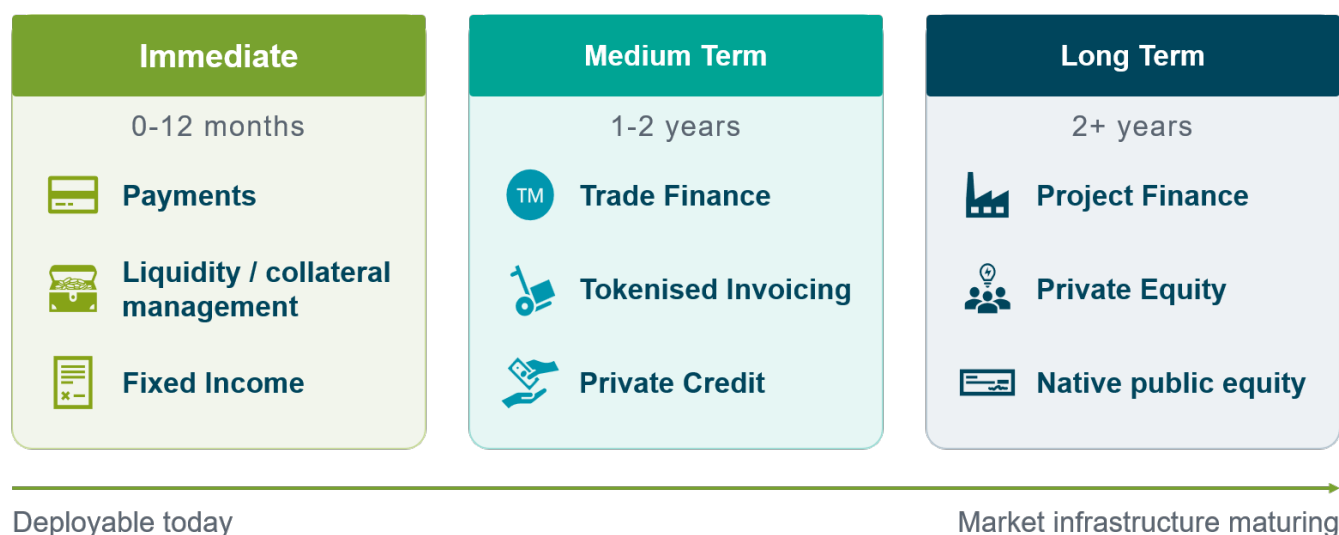
Greatest internal value from DLT tends to arise where processes are capital-intensive, reconciliation-heavy, documentation-driven or dependent on complex or multi-step, multi-actor settlement cycles. By identifying existing inefficiencies and bottlenecks across treasury processes, corporates can single out DLT and tokenisation opportunities most likely to reduce friction and enhance efficiency or customisation.

This needs-driven approach ensures that early adoption focuses on high-impact, low-barrier areas while positioning corporates to expand into additional tokenisation use cases as market infrastructure and partner readiness continue to mature.

As DLT is an ecosystem innovation whose value increases as adoption becomes more widespread across industry, corporates should also assess external factors such legal and regulatory clarity as well as ecosystem development.

These considerations lead to a hierarchy of DLT implementation areas as outlined in Figure 19 below, distinguishing between areas and use case that are ready for immediate DLT implementation, those that are likely to move towards adoption maturity in the short- to medium-term (ca. 1-2 years) as the ecosystem – including and those that are likely to become of greater relevance beyond the 2-year period:

Figure 19: DLT Use Case Prioritisation for Corporates



Below each of the categories is further elaborated on:

Immediate

Cross-border payments and collateral/intraday liquidity are the most immediate DLT priorities for corporates. These areas already operate at scale on production-grade infrastructure and deliver tangible benefits through faster settlement, improved liquidity, and better collateral utilisation. They represent the clearest near-term opportunities for corporates to benefit from DLT via existing banking channels.

Upcoming (1-2 years)

A second group of use cases, including tokenised invoicing, broader working-capital financing and public equity issuance, is beyond proof-of-concept, with use cases showing live adoption but requiring further maturing and scaling across standards and tokenised-cash development. For most corporates, these are medium-term priorities, adopted where they align with specific financing or operational needs.

Longer-term horizons (2+ years)

Project finance and equity financing represent somewhat longer-term opportunities. While tokenised real-asset vehicles and private equity or debt structures exist today, mainstream DLT project finance face regulatory, structural, and coordination challenges, meaning adoption will scale more gradually.

Note that these timelines reflect general assessments of use case benefits and maturity; each of these areas should be evaluated against each corporate's specific pain points, priorities, capabilities and priorities.

3.3 How Corporates can help shape the DLT economic architecture of tomorrow

While DLT holds great promise and potential for corporates and the DLT ecosystem is rapidly developing, it is still in an early implementation stage, with key design elements of the architecture still being shaped.

While this can create uncertainty and pose challenges to corporates in their implementation of DLT, it also offers significant opportunities to participate in this development and to impact the eventual DLT financial and economic architecture. There are two areas where the voice of corporates can add particularly valuable direction to developments:

Linking and scaling the DLT architecture

As a relatively new architecture, DLT has seen a significant number of initial initiatives, with different ledgers and platforms being made available. This can offer corporates with choice but can also create fragmentation that comes with frictions. Interoperability solutions and protocols have been developed that can link different DLT platforms and distributed ledgers, and discussions are beginning on setting a market standard. Corporates can have their voices heard and help move forward these discussions. Moreover, through their DLT strategies, corporates can help enable greater standardisation, for instance by setting out criteria for ledgers and DLT platforms that corporates wish to engage with.

Designing scalable DLT-based cash settlement assets

Many DLT and tokenisation use cases in corporate treasury rely on the availability of compatible cash settlement mechanisms. Where suitable forms of on-chain or synchronised cash are not available, settlement lags or workarounds may arise, limiting the efficiency and scalability of otherwise viable use cases. As a result, the maturity of cash-on-DLT solutions can influence both the timing and the scope of DLT adoption.

Initiatives around commercial bank money in tokenised or DLT-enabled form is gaining momentum and are expected to play an important role in enabling broader adoption over time. Corporates are therefore encouraged to monitor and engage with relevant cash-related initiatives, even where cash is not the immediate focus of an initial use case, to ensure alignment with future settlement, liquidity and risk management needs.



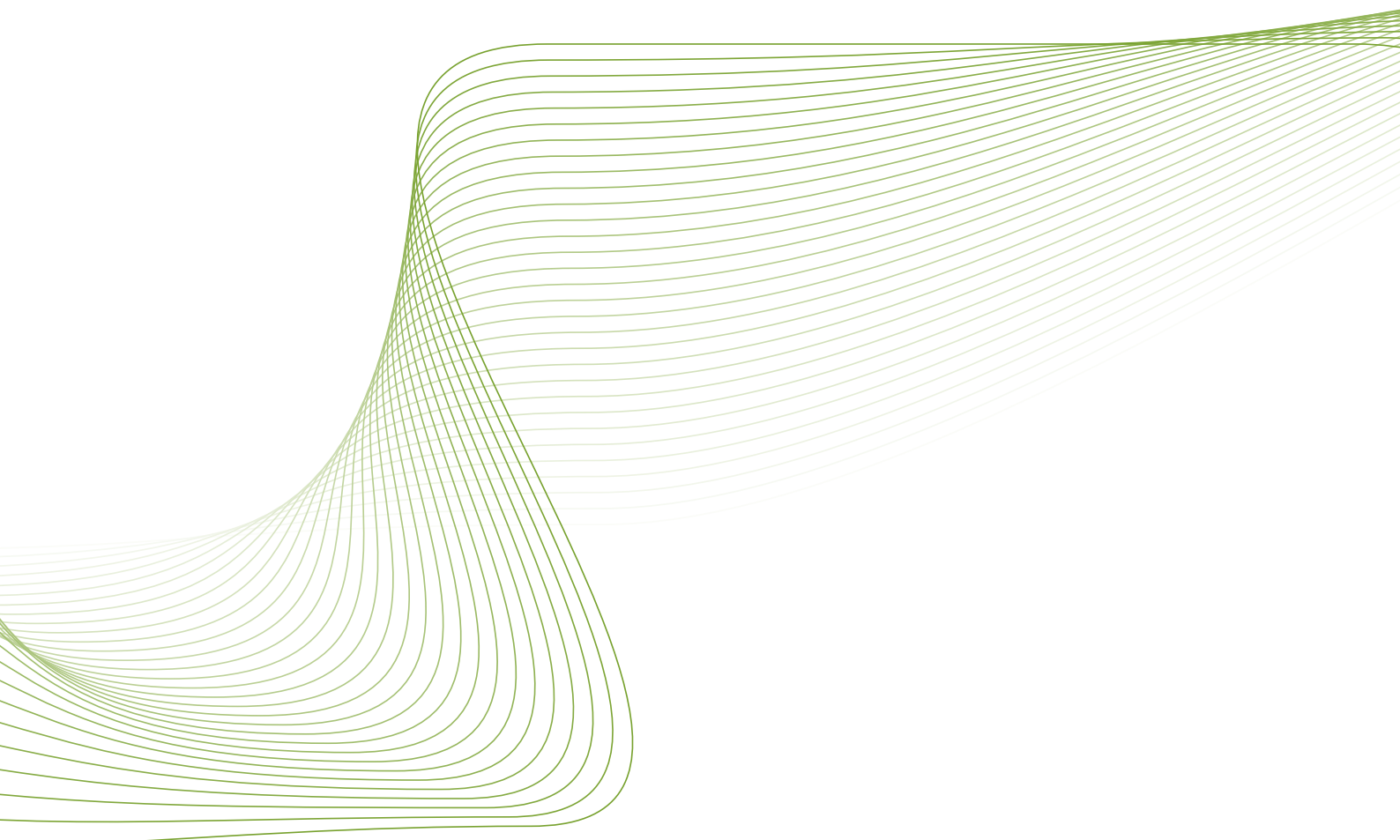
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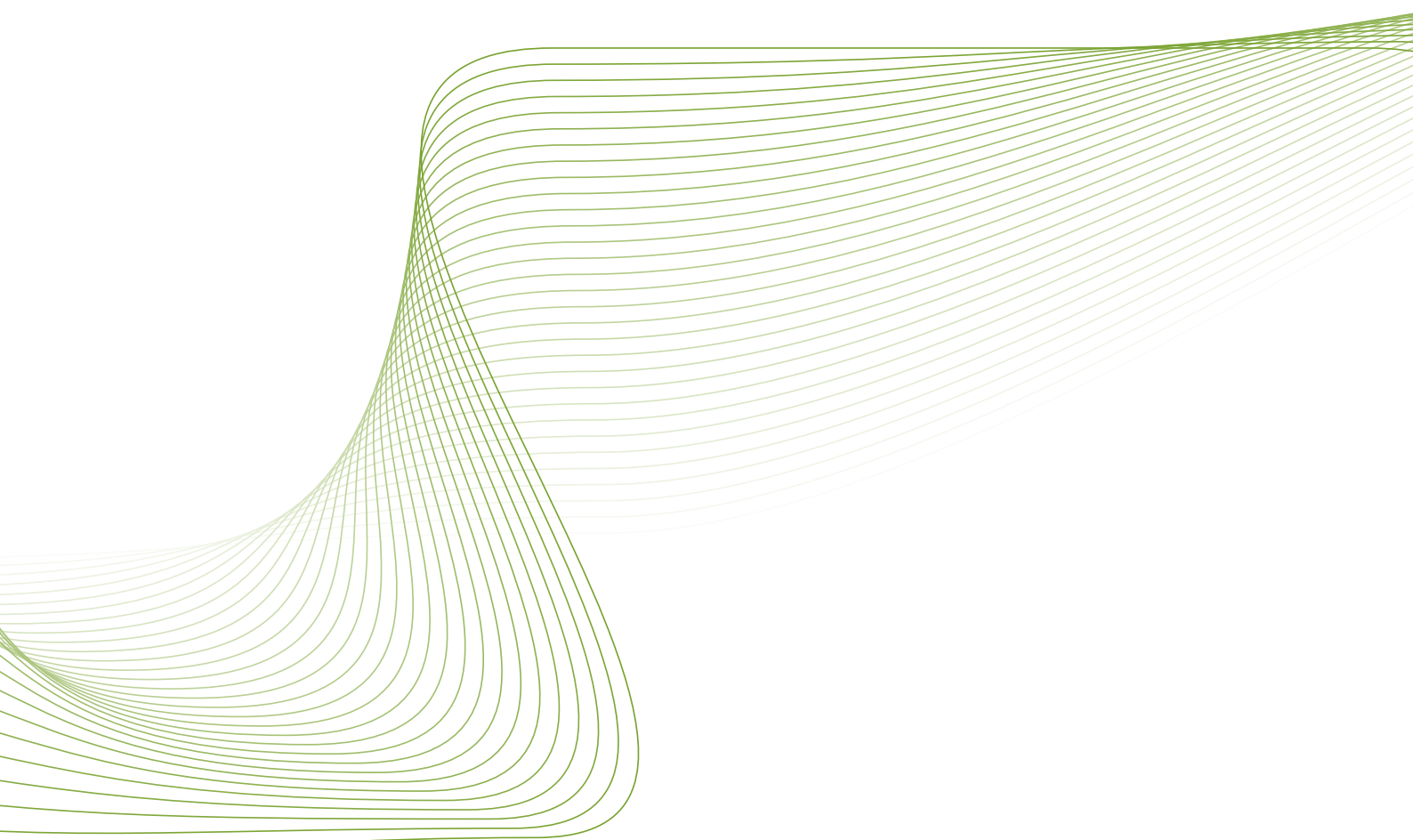
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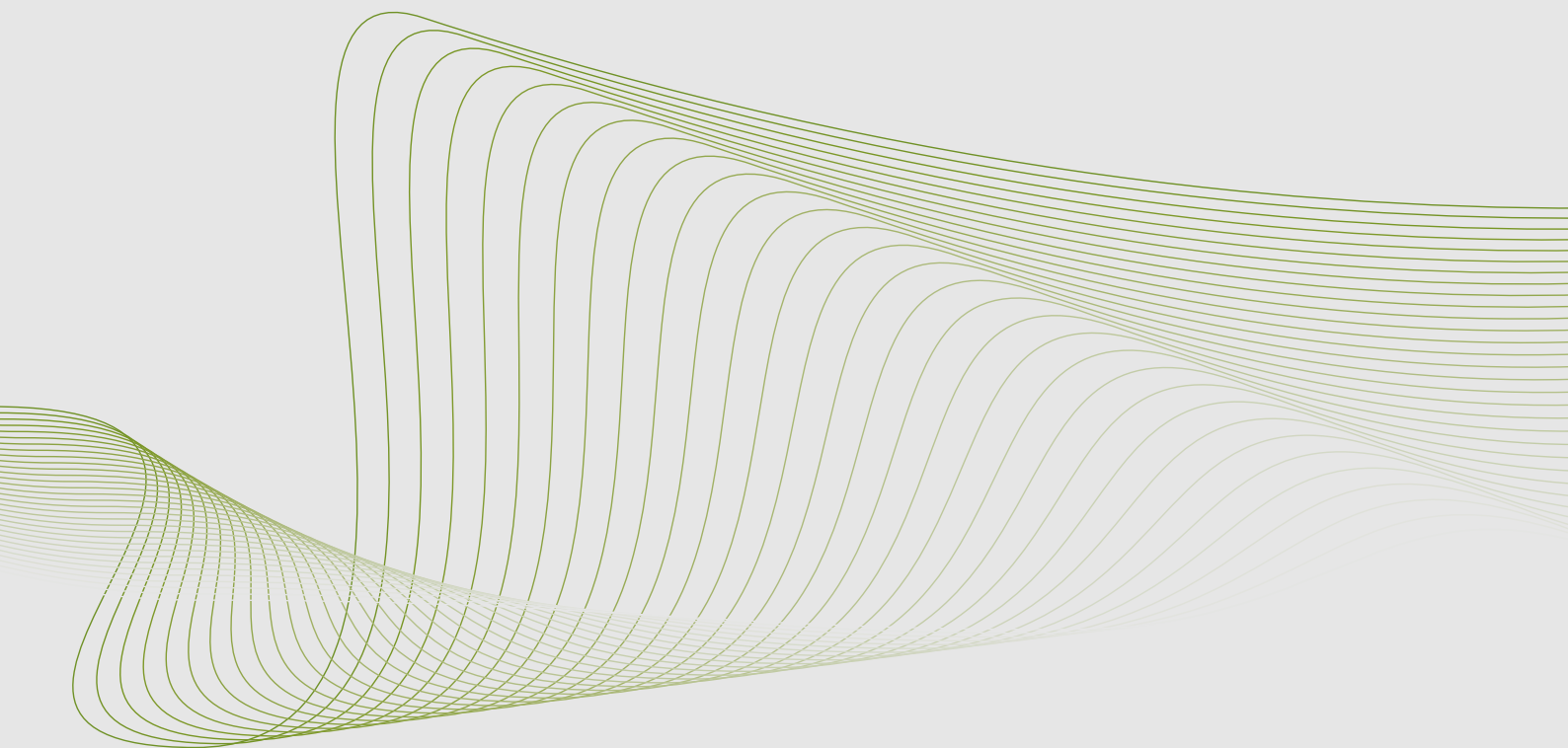
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