

# The Future is Onchain:

How Blockchain  
Infrastructure  
Can Transform the Future  
of Financial Services

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By Dfns and Boston Consulting Group

# Contents

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- 01** The Case for Change
- 02** The Onchain Future of Finance
- 03** The Many Paths Forward
- 04** Infrastructure for the Future of Finance

# The Case for Change

Today's financial system remains the backbone of global commerce, but evolving client expectations are testing the limits of its underlying infrastructure. As the digital economy has rapidly evolved, the needs of institutions, businesses, and individuals have outpaced the infrastructure that serves them. Financial services clients are seeking faster settlement, lower transaction costs, and broader access to financial products.<sup>1</sup> Most current systems that are used to meet these needs were designed in the 1970s and 1980s. They have been upgraded since then, but their underlying architecture remains rooted in that era.<sup>2</sup>

The resulting friction is felt by users and financial services firms across the globe. As shown in Exhibit 1, the inefficiencies are visible in many situations. For example:

- **Treasury and liquidity:** A treasury manager in London needs to move £50 million before noon to fund a time-sensitive transaction, but the system's cut-off time has passed, and settlement won't complete until tomorrow.
- **Cross-border payments:** An expatriate worker in Madrid sends US\$ 1,000 back to her family in Lima, Peru, each month. After banks and transfer services take their fees, only US\$ 956 arrives three days later. She has no way to track how the money travels or why it takes so long.<sup>3</sup>
- **Yield deployment:** A New York-based asset manager sees productive opportunities for client funds parked in stablecoins and tokens. However, the platforms are fragmented, not fit for institutional investors. The operational and compliance overhead is barely worthwhile.

- **Access to capital:** A small manufacturer in Buenos Aires needs US\$ 2 million to expand into an adjacent product line. In Argentina's capital markets, a stock listing might cost more than the raise itself. A local bank offers only US\$ 400,000, with unacceptable conditions.

These are not isolated examples. The friction can often be traced to common underlying issues, such as siloed centralized ledgers and messaging connectivity, centrally executed semi-manual or manual reconciliation, and limited operating hours. Long chains of intermediaries operate on proprietary rails and with fragmented liquidity. As volumes grow and client expectations converge to demand 24/7, low-friction experiences, the constraints become more frustrating.

These issues are already prompting proposals to re-engineer the underlying financial infrastructure. Global IT modernization spend is accelerating, with hybrid cloud investments projected to exceed USD\$1.3 tn by 2026.<sup>4</sup> Industry benchmarks show that 70% of enterprises plan to modernize core systems within 3 years, reflecting the urgency to upgrade legacy infrastructure for resilience and scalability.<sup>5</sup> Blockchain has the potential to future-proof financial infrastructure for the 21<sup>st</sup> century, transforming finance as radically as the internet reshaped communication and commerce.

Distributed ledger technology (DLT) is a method for recording and sharing data across a network, enabling multiple parties who may not trust each other to access, verify and maintain a common, tamper-resistant record of transactions. Blockchain is the best-known form of DLT, in which transactions are grouped into blocks that are cryptographically linked, making the historical record virtually impossible to alter without detection.

1. BIS, Working Paper No. 1178, Finternet: the financial system for the future, 2024; Financial Stability Board, "Annual Progress Report on Meeting the Targets for Cross-border Payments: 2023 Report on Key Performance Indicators, 2023.

2. BIS, Annual Economic Report 2023, Chapter III "Blueprint for the future monetary system: improving the old, enabling the new", 2023

3. Case study from Andreessen Horowitz (a16z crypto), "State of Crypto Report 2024", 2024

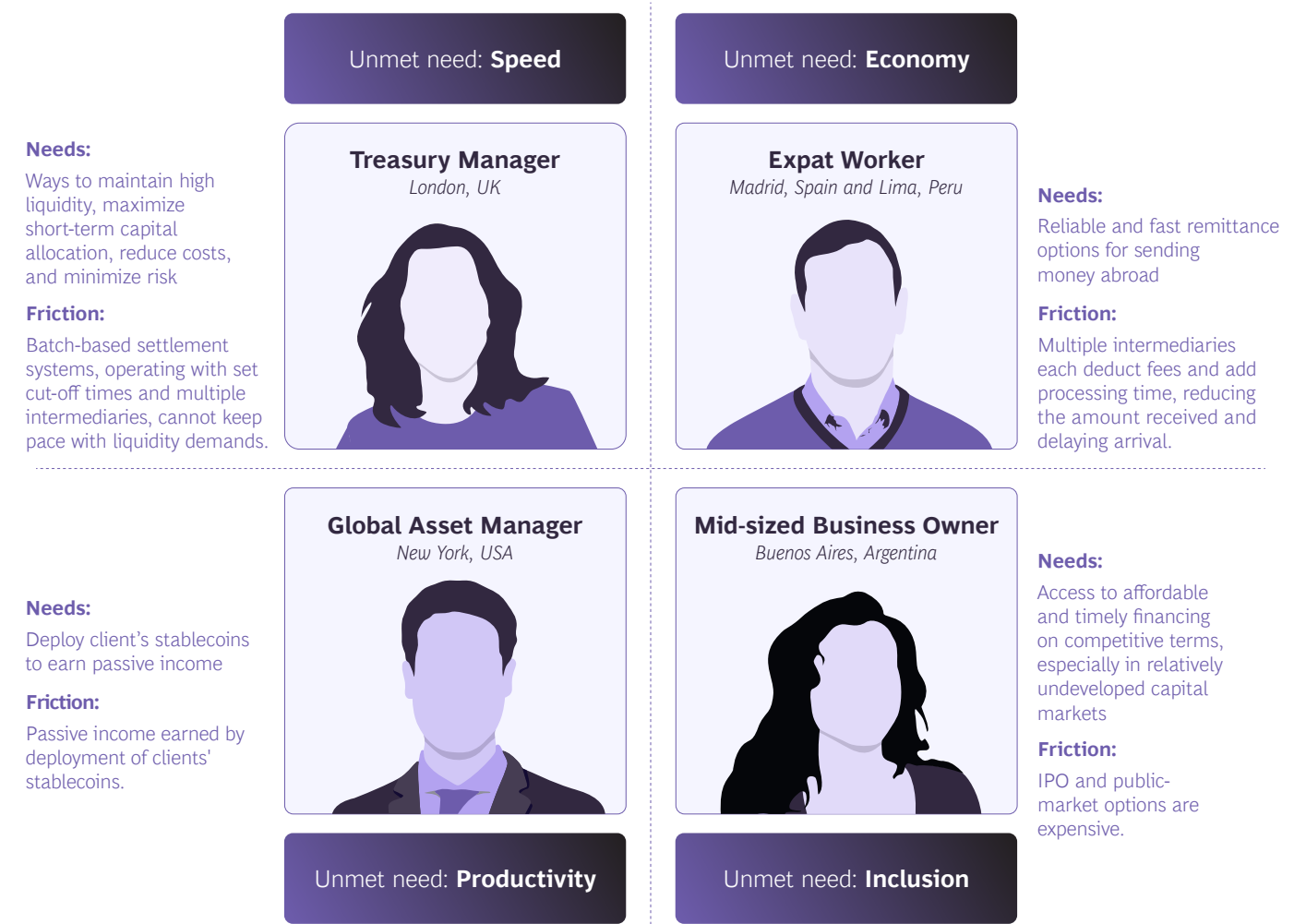
4. IDC, "Worldwide IT Spending Forecast (Hybrid Cloud & AI adoption trends)", 2024

5. Kyndryl and Broadcom investor reports (IT modernization benchmarks)



## EXHIBIT 1

# Experiencing Frictions of Current Financial Infrastructure



Source: BCG

Just as the internet shifted computer power from centralized physical servers to cloud infrastructure, enabling the adoption of more sophisticated algorithmic services, blockchain could spark a comparable transition in finance. Economic value and data would then move from fragmented, centralized systems to shared, programmable networks. Blockchain and DLT offer some unique advantages over earlier financial systems:

- **Shared, decentralized execution layer:** Multiple parties interact on a common infrastructure while retaining their own risk and compliance controls.
- **Programmability:** Financial logic can be codified in smart contracts, reducing manual intervention and errors.
- **Transparency:** Parties with appropriate permissions can access data at any point in the value chain, and the systems follow transparent governance protocols, reducing information asymmetry while preserving confidentiality of sensitive flows through fine-grained access controls.

- **Global, always-on common infrastructure:** Value moves easily across borders on a shared, immutable ledger, with fewer intermediaries and limited reliance on batch processes.

Onchain will become a new standard. In early 00's we used to say online, we don't say that anymore. Everything is online today.

**CHRISTOPHER GRILHAULT DES FONTAINES**  
Co-CEO & Co-Founder, Dfns

The term “onchain,” coined among blockchain-native players, refers to the execution and recording of transactions on blockchain infrastructure. The ownership, transfer histories, and governing rules are stored on the shared ledger and enforced by the network's code – not by a bank, clearing house, or other central authority.

As onchain adoption scales, interacting with blockchain-based financial services may become as natural and seamless as being “online” is today. Eventually, the distinction between onchain and offchain could fade in importance for end-users, even as it remains crucial for regulators, risk managers and technology teams. Ultimately, hybrid financial services firms, formed by merging traditional finance (TradFi) incumbents with blockchain-native upstarts (built from the ground up on blockchain infrastructure) could become a new industry standard.

Blockchain technology isn't new. It was introduced in 2008. Only recently, however, have we observed signals suggesting it is an inflection point for financial services operations, with value beyond cryptocurrency.

- **The technology is reaching maturity.** DLT has moved far beyond isolated pilots. Large-scale deployments exist in cross-border payments, fund settlement, collateral management and money-market operations, demonstrating that blockchain-based solutions can operate reliably and address friction at scale. Leading institutions are integrating DLT into core workflows rather than treating it as a peripheral experiment.<sup>6</sup>
- **Regulators are moving forward.** We remain distant from a global, coordinated, harmonized regulatory regime, but several jurisdictions – including the US, Europe, Switzerland, the UAE, Singapore, and Hong Kong – have taken steps to clarify their rules on digital assets, tokenized securities, and stablecoins. This progress is prompting other regulators to consider or propose dedicated frameworks, aiming to protect financial stability while promoting innovation and competitiveness. As a result, traditional financial (TradFi) institutions and blockchain-native firms have a broader path to participate in onchain finance within regulated constructs.<sup>7</sup>
- **Early movers are beginning to realize commercial benefits.** They are parleying their use of DLT into P&L value and commercial viability. Institutions operating production-grade onchain solutions report revenue uplift from new products and client segments, along with cost efficiencies from improved capital utilization, reduced reconciliation, and lower transaction costs.<sup>8</sup> These outcomes are driving renewed investment, partnerships and ecosystem development.

6. The Block, “JPMorgan rolls out programmable payments via JPM Coin”, 2023; Nasdaq, “Citi Develops New Digital Asset Capabilities for Institutional Clients”, 2023; BlackRock, “BlackRock Launches Its First Tokenized Fund, BUIDL, on the Ethereum Network”, 2024; Franklin Templeton, “Franklin Templeton Announces the Franklin OnChain U.S. Government Money Fund Surpasses 270 Million in Assets Under Management”, 2023

Taken together, these developments create a compelling case for moving from isolated pilots to systematic strategies, paving the way for the next chapter in the evolution of the financial system. Electronic money was good enough for the era of electronic mail. However, in the coming era of agentic commerce and smart applications, the transformation of onchain financial systems is poised to accelerate further in 2026.

Historically, finance has followed one rule: maximize capital efficiency – making more out of less. Onchain finance is the next chapter in that story, reducing capital idle time even more.

#### CLARISSE HAGÈGE

Co-CEO & Co-Founder, Dfns

Today, digital asset adoption means connecting traditional finance to the emerging onchain world. Linking blockchain networks to existing banking systems and payment rails is the first step toward gradually replacing legacy processes with onchain technologies.

#### SIMON VOGEL

Global Leader, IBM Digital Assets

7. World Economic Forum, “Digital Assets Regulation: Insights from Jurisdictional Approaches”, 2024; PwC, “PwC Global Crypto Regulation Report 2025”, 2025

8. Forbes, “Fintech Giant Revolut Boasts First-Ever Annual Profit After Crypto Boom”, 2023; Andreessen Horowitz (a16z crypto), “State of Crypto Report 2024”, 2024

# The Onchain Future of Finance

Being a hybrid institution - combining the best of traditional and onchain finance – gives institutions a good chance to lead the industry in this new era. Blockchain enables intermediaries in financial services to do two things at once:

- 1 Deliver existing products on new infrastructure. TradFi offerings such as deposits, payments, trade finance, money-market funds, securities, and other real-world assets can be migrated onto tokenized, programmable infrastructure. This can simplify operations, shorten settlement times, enhance liquidity, enable fractionalized ownership and improve transparency, while preserving familiar risk, legal and accounting structures.
- 2 Design entirely new onchain offerings. Various financial services are now available to broader clientele with DeFi: composable liquidity pools, programmable yields, and granular access to previously illiquid exposures.

Across the product shelf and the technology stack, there are varying degrees of potential for beneficial disruption.

Payment and settlement processes are already being altered through onchain experimentation. Custody, collateral management, and asset servicing are close behind. Over time, more complex offerings such as structured products, lending and risk transfer will follow.

Exhibit 2 shows how these products, services and offerings could coalesce into the onchain bank of the future. New blockchain-based entrants to the industry will also appear. Blockchain-native players may overtake incumbents with a more rapid pace of innovation. They may completely re-imagine how traditional finance products are engineered

and delivered. Concepts such as smart contracts, initial coin offerings (ICOs) and yield farming could soon lead clients to question how their TradFi equivalents – trade finance, ECM and B2B lending – are delivered.

A hybrid onchain financial institution can assemble the strengths of TradFi and blockchain-native innovation. From traditional finance, it would inherit capabilities in risk management, compliance, balance sheet management, client coverage and regulatory engagement. These are critical for safeguarding stability, trust and resilience at scale. From blockchain, it would gain programmability, composability, 24/7 global reach, and the ability to innovate quickly on shared infrastructure. It could thus develop new forms of capital formation, liquidity provision and user experience.

Taken together, these developments create a substantial commercial opportunity, with tokenized funds alone projected to reach \$600 bn AUM by 2030.<sup>9</sup>

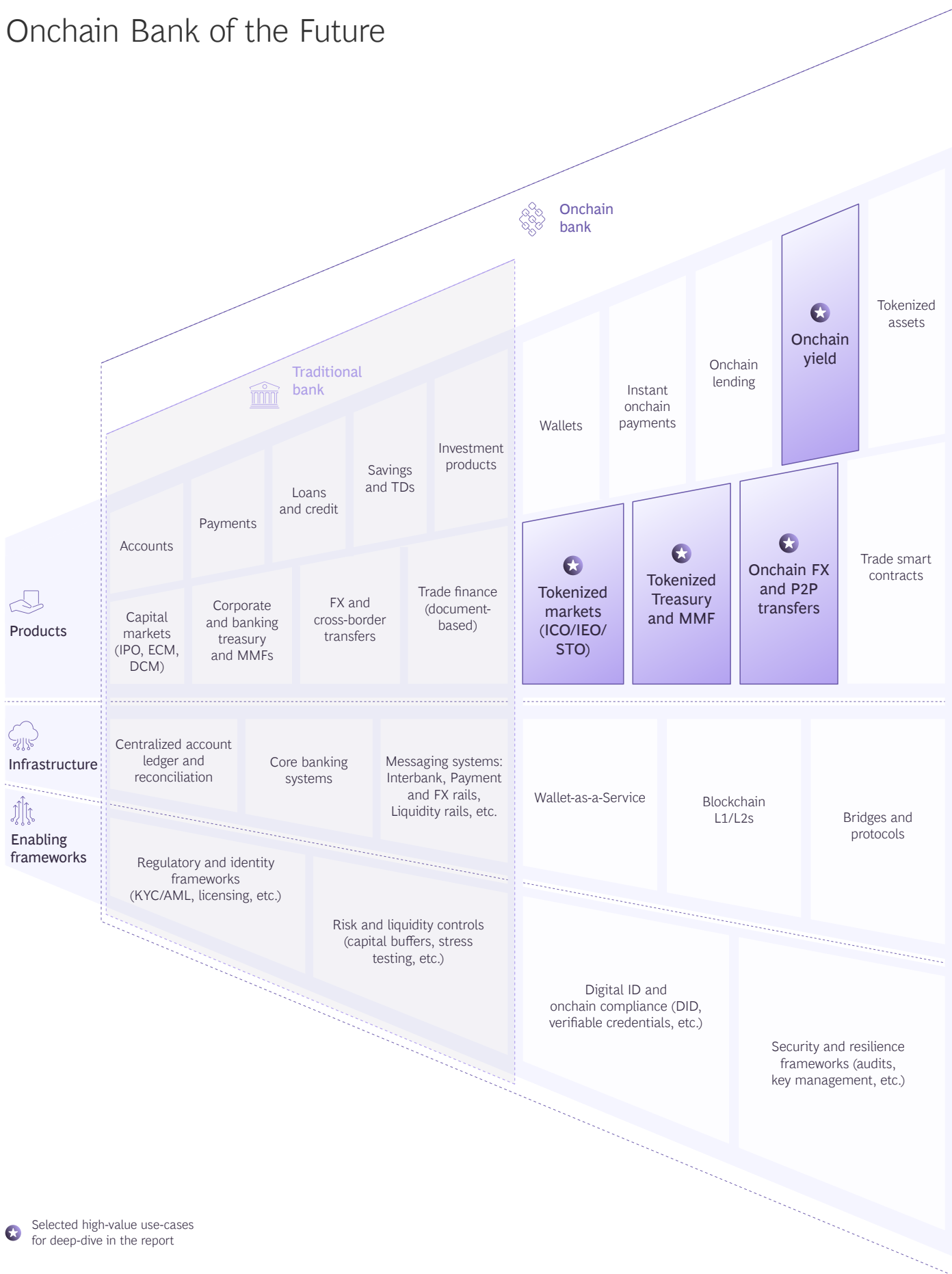
Hybrid products and services would be more competitive along several dimensions, illustrated by the following, non-exhaustive examples:

- **Faster.** Treasury managers could access tokenized money-market funds (MMFs) with real-time settlement and intraday liquidity, improving their operations.
- **Cheaper.** Expat workers could send onchain peer-to-peer (P2P) cross-border payments at a fraction of today's fees, with near-instant delivery to their families.
- **More efficient.** Global asset managers could deploy client assets productively and offer competitive yield through onchain liquidity pools.
- **More inclusive.** Mid-sized business owners could raise capital through tokenized equity, giving their enterprises access to new, more flexible financing options.

9. BCG, "Tokenized Funds: The Third Revolution in Asset Management Decoded", 2024

## EXHIBIT 2

# Onchain Bank of the Future



Source: BCG

## Faster: Tokenized Money Market Funds

Tokenized money-market funds (TMMFs) are emerging as a core building block of next-generation collateral and liquidity infrastructure. TMMFs are digital tokens that represent shares in regulated MMFs on a distributed ledger. They combine the programmability, 24/7 transferability and composability of crypto assets with the yield profile, diversification and investor protections of traditional money-market funds. As more high-grade assets move onchain, treasurers and market infrastructure leaders are coming to view TMMFs as the “onchain cash” of choice.

Exhibit 3.1 illustrates the operational benefits. At left, the upper Now panel shows a traditional repurchase agreement (repo) process. The trade agreement triggers a series of confirmation steps spread across multiple systems, each with its own deadline. If an agreement is made at 10 am, the cash and securities might not actually change hands until around 9 am the following morning.

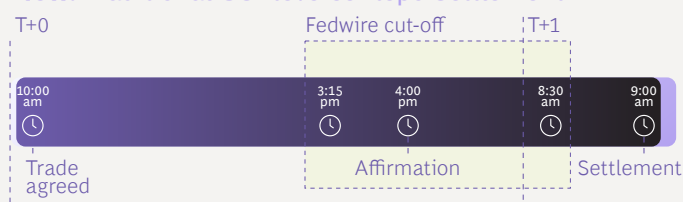
By contrast, the Future panel shows the same transaction using TMMF shares as collateral. The entire sequence—execution, confirmation, and settlement—can be completed through automated code within minutes of the original agreement. Features such as continuous margining through smart contracts, automated top-ups and recalls, and the absence of end-of-day cut-off windows all help reduce counterparty and operational risk while freeing intraday liquidity and lowering processing costs. Over time, these efficiencies can translate into narrower spreads and lower all-in financing costs for corporate treasurers and, where passed on in pricing, lower fees or higher net yields for end investors.

The bottom panel illustrates a potential adoption path for TMMFs, scaling to US\$ 0.6 tn by 2030. For this scenario to materialize, several factors need to be in place: Clear, consistent regulatory treatment that recognizes tokenized fund units and their use as collateral, robust institutional infrastructure, and a few scaled high-value use cases that bring meaningful balances onchain.

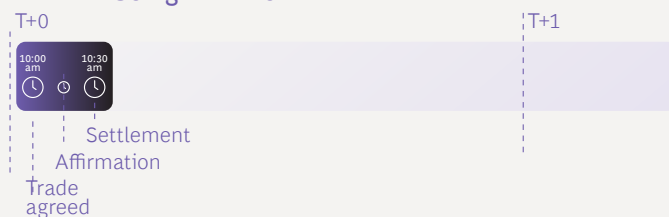
### EXHIBIT 3.1: TOKENIZED MONEY MARKET FUNDS (MMF)

#### Process for repurchase agreement (repo) settlements

##### Now: Traditional US Reverse Repo Settlement



##### Future: Tokenized US Reverse Repo Settlement Using TMMFs



#### Potential path for scaling up adoption of TMMFs

##### Opportunity Size US\$ trillions



Sources: Citi GPS; BNY; rwa.xyz; BCG Global Asset Management report, 2025

## Cheaper: P2P Transfers

Peer-to-peer transfers over public blockchains are increasingly viewed as a compelling alternative to traditional cross-border payment systems, particularly for low-value cross-border remittances where fees and delays are most costly for users.<sup>10</sup>

Exhibit 3.2 contrasts today’s bank-based remittance with an onchain wallet-to-wallet transfer. The Now panel shows a conventional payment - from an expatriate worker in Madrid to a family member in Lima – running through

complex correspondent banking rails: from the payer’s bank to its US\$ correspondent, the payee bank’s US\$ correspondent, and finally the payee bank, all linked by international messaging networks and operating under Swift’s ISO 20022 standard. Each step adds fees: FX spreads, outgoing and incoming transfer charges, and per-message fees. For a US\$ 1,000 transfer, the total effective remittance cost is around 4.4% of the ticket size.<sup>11</sup> Only about US\$ 956 reaches the recipient.

10 U. Bindseil, “Regulatory responses to the financial stability implications of stablecoins”, 2025

11. Andreessen Horowitz (a16z crypto), “State of Crypto Report 2024”, 2024



By contrast, the bottom panel shows the same US\$ 1,000 sent as an onchain payment from wallet to wallet over a widely adopted ETH L2 blockchain. The transaction travels directly via the network, settles within seconds, and incurs a gas fee (the fee charged for blockchain compute) of less than US\$ 0.10. The total fees are roughly 90% cheaper than the traditional route.<sup>12</sup> This striking difference in economics creates an imperative for payment operators to invest in onchain systems - or risk being disrupted and left with significantly smaller volumes.

The timing of adoption remains uncertain. As shown in the bottom panel, if the market continues to follow its current 7-10x annual adoption rate, this would produce 200 million active users by 2030. So far, this adoption rate has been primarily driven by tech enthusiasts and early adopters. If the process is embedded in established financial infrastructure, that number could rise more quickly.

For example, if half of the users of traditional cross-border remittances switch to blockchain-enabled remittances, the number of monthly active P2P users might rise to 240 mn. If a major messaging platform such as Telegram provides blockchain-enabled transfers, following the example of Asian players with digital payments, more than 320 mn people might regularly use onchain P2P transfers by 2030.

The era of bundling banking and payments may be coming to an end – and that's where the real disruptive opportunities will emerge.

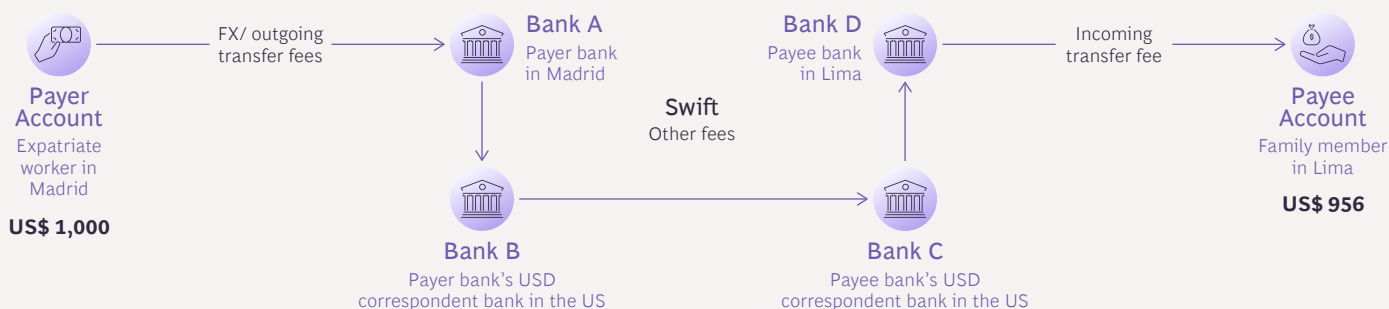
**GEOFFREY GOODELL**

Computational Economics and Finance,  
University College London

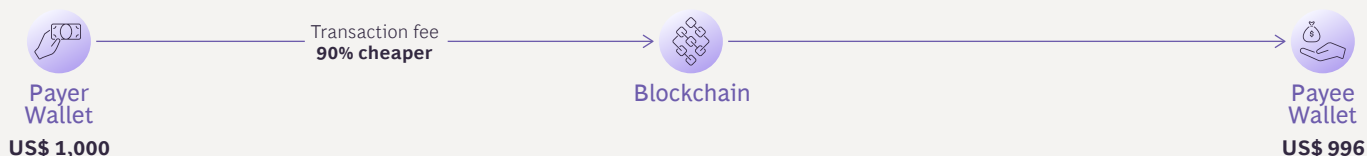
### EXHIBIT 3.2: P2P ONCHAIN PAYMENTS

#### Benefits from Switching to P2P Onchain Payments

##### Now: Traditional Cross-border Payment

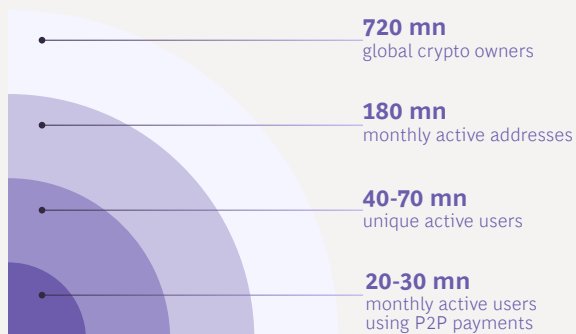


##### Future: Onchain Payment



#### Projected Adoption Rates (# of users)

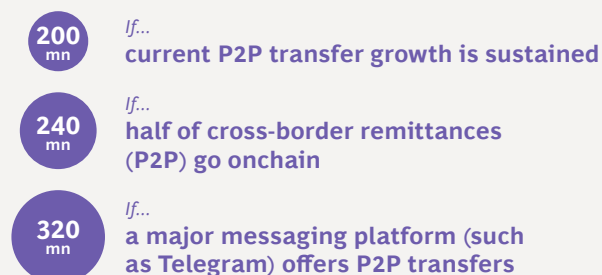
##### 2025 (estimated)



Sources: Allium; a16z State of Crypto 2025, 2024; BCG

##### 2030 (projected, under alternative scenarios)

##### ▲ Monthly active users



12. Andreessen Horowitz (a16z crypto), "State of Crypto Report 2024", 2024

## More Efficient: Stablecoin lending

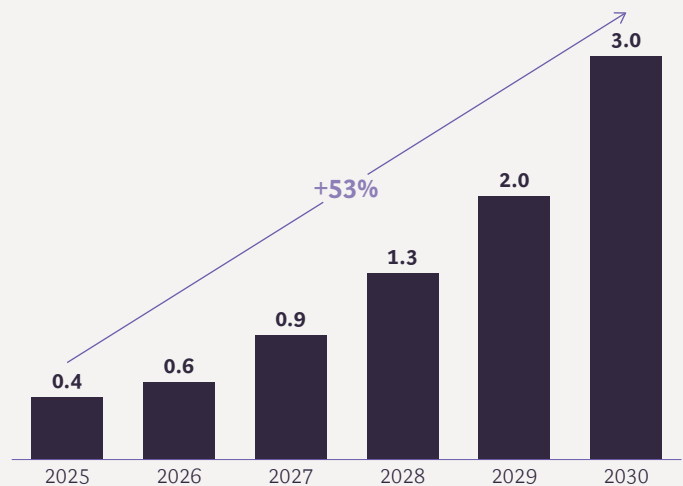
Stablecoin lending protocols on public blockchains are increasingly viewed as a parallel credit system for onchain dollars. They offer 24/7 access to funding without relying on traditional bank balance sheets. Savers supply stablecoins into lending pools and earn yield, while borrowers post collateral and draw loans that are automatically managed by code rather than by a credit committee.

Historically, stablecoin lending has been a niche activity, typically deployed as a proof-of-concept experiment or a liquidity use case. It will likely become a critical means deploying capital effectively in the digital economy. With the amount of stablecoin rising from US\$ 30 bn in 2020 to US\$ 300 bn today, and projected to reach US\$ 3 tn by 2030, these lending protocols are gaining system-wide significance.<sup>13</sup>

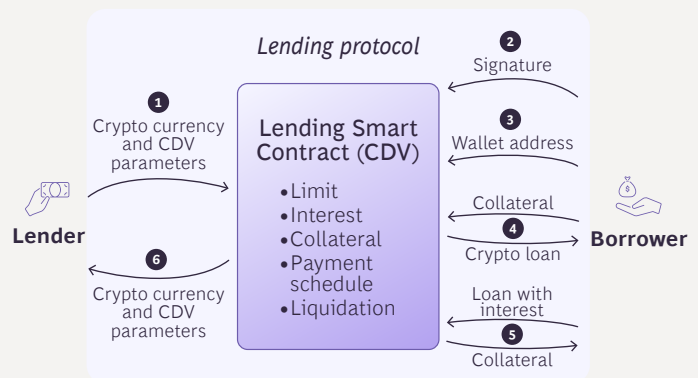
Exhibit 3.3 depicts the practice of stablecoin lending. At the center sits a smart contract that encodes the credit line limit, interest rate, collateral requirements, repayment schedule and liquidation logic. The lender, shown on the left, deposits crypto assets and specifies the desired parameters; the contract records the lender's wallet address and begins accruing interest. The borrower, shown at right, connects a wallet, signs the loan agreement, posts collateral and receives a stablecoin loan. If the borrower repays on time, the collateral is returned and the lender receives principal plus interest. If collateral values fall below predefined thresholds, the contract can automatically liquidate positions and repay lenders. The result is a globally accessible, transparent and collateralized lending market governed by the protocol.

### EXHIBIT 3.3: STABLECOIN LENDING

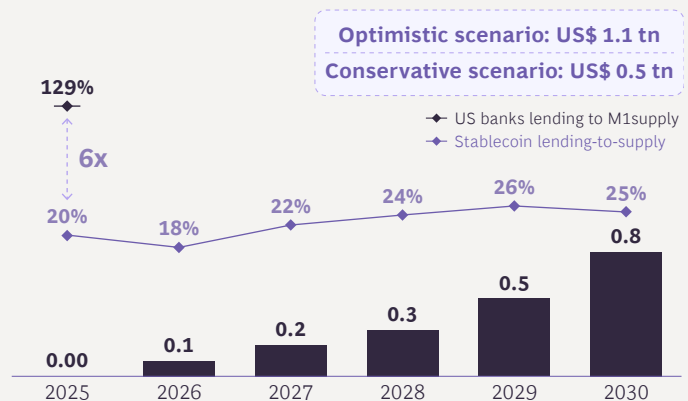
#### Stablecoin market capitalization projections, US\$ tn



#### Stablecoin Lending Benefit



#### Opportunity Size, US\$ tn



Sources: Allium, BCG

The real breakthrough will come when real-world assets are tokenized and could serve as instant collateral for secured lending. That is what will truly expand banking, credit availability and, ultimately, economic growth.

#### SAURABH TRIPATHI

Managing Director & Senior Partner, Global FI Lead, BCG India

13. State Street, "The stablecoin moment", 2025; U.S. Secretary of the Treasury, 2025

Stablecoin lending resembles commercial bank lending in many respects. One striking difference is the macro-level ratio of lending to the supply. Fiat-system banks lend 129% of the total M1 money supply, whereas for stablecoins, the lending-to-supply ratio is only 20%.<sup>14</sup> This ratio reflects the market's early stage in its life cycle. Lending, however, is still volatile, correlating with the volatility of crypto market cycles. To date, the dominant use case for stablecoin lending has been providing margin financing on crypto exchanges, so activity is closely tied to trading volumes and leverage in those markets. For example, during the crypto winter of 2022-2023, the ratio dropped from 20% to below 5%. As institutional ownership of stablecoin grows, however, margin financing will likely

decrease its share of lending use cases, and cyclicalities will flatten.

This indicates that the stablecoin lending market will be driven, in part, by the increase in stablecoin supply. With supply growing to US\$3 tn and the lending-to-supply ratio 25% ratio, outstanding stablecoin loans could increase to about US\$0.8 tn by 2030. The main uncertainty is not whether the technology works, but how quickly institutional users, treasurers, and market-makers will choose to shift a meaningful share of their short-term dollar funding into these programmable, collateralized lending rails.

## More Inclusive: Onchain Equity

Today, public equity markets are effectively off-limits for most mid-sized companies. Going public typically entails working with investment banks, incurring multimillion-dollar underwriting and advisory fees, and complying with stringent requirements for listing, disclosure, and liquidity. With industry IPO costs averaging ~7-10% of the proceeds<sup>15</sup>, going public with a capital raise of US\$ 100 mn would cost a company US\$ 7-10 mn and, for such smaller-ticket transactions, would still be limited to more developed markets. As a result, a mid-sized firm operating in a jurisdiction with insignificant capital markets with US\$ 0.2 bn turnover and an EBITDA margin at 5% would have to sacrifice a full year's profit to go public, and also cover incremental recurring costs such as auditing, corporate action and investor relations, financial reporting, and regulatory compliance. Beyond costs, mid-sized companies in such jurisdictions face fragmented investor pools, insufficient liquidity, and the regulatory and reporting burdens of being public, often without scalable solutions available in more developed markets.

Blockchain has already proven that it could be a tool for capital formation. However, investors learned it the hardest possible way. Between 2018 and 2025, crypto utilities (such as SOL, AVAX, SUI, BNB, and many others) raised more than US\$ 1 tn in net equity in primary and secondary markets.<sup>16</sup> Onchain ownership of utility tokens for major blockchain enterprises has become prevalent. In 2018 alone, there were more than 1,250 Initial Coin Offerings (ICOs) and Initial Exchange Offerings (IEOs)<sup>17</sup>. Although ICOs have proven themselves effective for raising capital, they have not succeeded in preserving value. Limited by the lack of regulated, compliant intermediary, opacity, governance issues, and holders' link to cash flows and broader rights, ICOs failed to preserve value.

By 2020, most of the tokens minted in 2018 were no longer traded in secondary markets, resulting in losses for early investors and a 10% survival rate. Furthermore, ICO-related abuses have sparked an ongoing debate about whether crypto markets are inherently prone to fraud and scams. The most infamous case – the BitConnect scheme – defrauded investors of an estimated US\$ 2.6 billion, becoming one of the largest ICO-linked scams to date.<sup>18</sup>

Capital markets require more investor protection than ICOs offer. However, to get to markets that are currently underserved and excluded from access to equity at scale, we could undertake the homework that had not been done until the 2018 “ICO summer”. A hybrid at the center of this dilemma could be onchain equity, combining the features of ICOs with the trustworthiness and compliance offered by IPOs.

Exhibit 3.4 shows how such onchain equity could be positioned in comparison to traditional stocks and crypto-assets.<sup>19</sup> While the concept of onchain equity has been to date largely theoretical, there are already a few projects and proposals that foreshadow the next chapter of capital markets. Within the Solana ecosystem, for example, projects are demonstrating how KYB, dividends, splits/reverse splits, voting & proposals and M&A events could work onchain. In parallel, within the Ethereum ecosystem, a proposal for an automated token revenue sharing standard (ERC-7254) is circulating among the network's community. Onchain equity could offer reduced issuance and administrative costs, global investor reach, improved liquidity through secondary markets, transparency, programmability, and governance executed by smart contracts.

14. Federal Reserve Bank of St. Louis (FRED), series TLAACBW027SBOG (Total Loans and Leases, All Commercial Banks) and M1SL (M1 Money Stock), 2025; Visa Onchain Analytics (Allium – Average Stablecoin Supply, Stablecoin Loan Volume), 2025

15. Investopedia, “How an Initial Public Offering (IPO) Is Priced”, 2025

16. CoinMarketCap, 2025

17. CryptoRank, “ICO Analytics: Fundraising Activity (Monthly Raise and Number of Token Sales incl. Private Rounds)”, 2025

18. ICO Bench, 70+ ICO Statistics You Need to Know in 2025, 2025

19. In the table described as onchain utilities

## EXHIBIT 3.4: ONCHAIN EQUITY COMPARED TO OTHER FORMS OF PUBLIC EQUITY

| Security Token Offerings Benefit |                                                |                                                 | Opportunity Size, US\$ tn                    |
|----------------------------------|------------------------------------------------|-------------------------------------------------|----------------------------------------------|
|                                  | Traditional Stock (IPO)                        | Onchain Equity (ETO)                            | Onchain Utility (ICO / IEO)                  |
| Primary Market Venue             | Stock exchange                                 | CEX / ETO Platform                              | Issuer wallet / DEX                          |
| Instrument                       | Equity                                         | Equity token (security)                         | Native token (utility)                       |
| Subscription Form                | Fiat currency                                  | Hybrid forms                                    | Crypto currency                              |
| Issuing Counterparty             | Investment bank                                | Dedicated player                                | Crypto exchange                              |
| Holder Link to Cash Flows        | Based on dividend policy                       | Token-embedded pay-offs                         | Narrative-based / Airdrops                   |
| Holder Rights                    | Statutory rights                               | Auto-executable rights                          | Limited to PoS model                         |
| Governance & Corporate Action    | AGMs, Proxy and Voting, Periodical Disclosures | Potential for legally recognized onchain voting | Informal, often non-binding token governance |
| Access Barrier                   | High (capital, fees)                           | Low                                             | High (technology)                            |

**US\$ 0.4 tn**

If...  
**1-2% of the capital gap is addressed by onchain equity**

**US\$ 0.7 tn**

If...  
**2-4% of the capital gap is addressed by onchain equity**

**Sources:** World Bank; EC, EIB; BoS – US; CoinMarketCap, BCG

While whether such an asset class will go mainstream anytime soon remains unclear and depends on multiple factors, there is a strong potential demand for it. Per BCG's analysis, the global equity gap for mid-sized businesses is expected to increase from US\$16 tn in 2025 to US\$24 tn in 2030 and is concentrated mainly in the developing and emerging markets. If 1-2% of that gap were addressed with onchain equity, this new asset class could reach a global total value of US\$0.4 tn by 2030.

For this to happen, we would need to see an alliance between blockchain-native companies and traditional financial institutions, orchestrated within a clear regulatory framework. Financial institutions would need to recognize the value-creating potential of onchain equity, and see it as comparable to public equity and ETO-to-IPO funding. This change would probably need three enablers: an underwriting framework with a trusted party, a reliable set of frameworks for onchain governance, reporting and corporate action, and scalable infrastructure and distribution models.

Each of these four offerings creates value for individual users and investors. Together, they represent a movement toward a more inclusive, efficient, profitable, global digital-ledger-based infrastructure. Other offerings will also be unlocked once a connected and uninterrupted onchain ecosystem is deployed at scale.

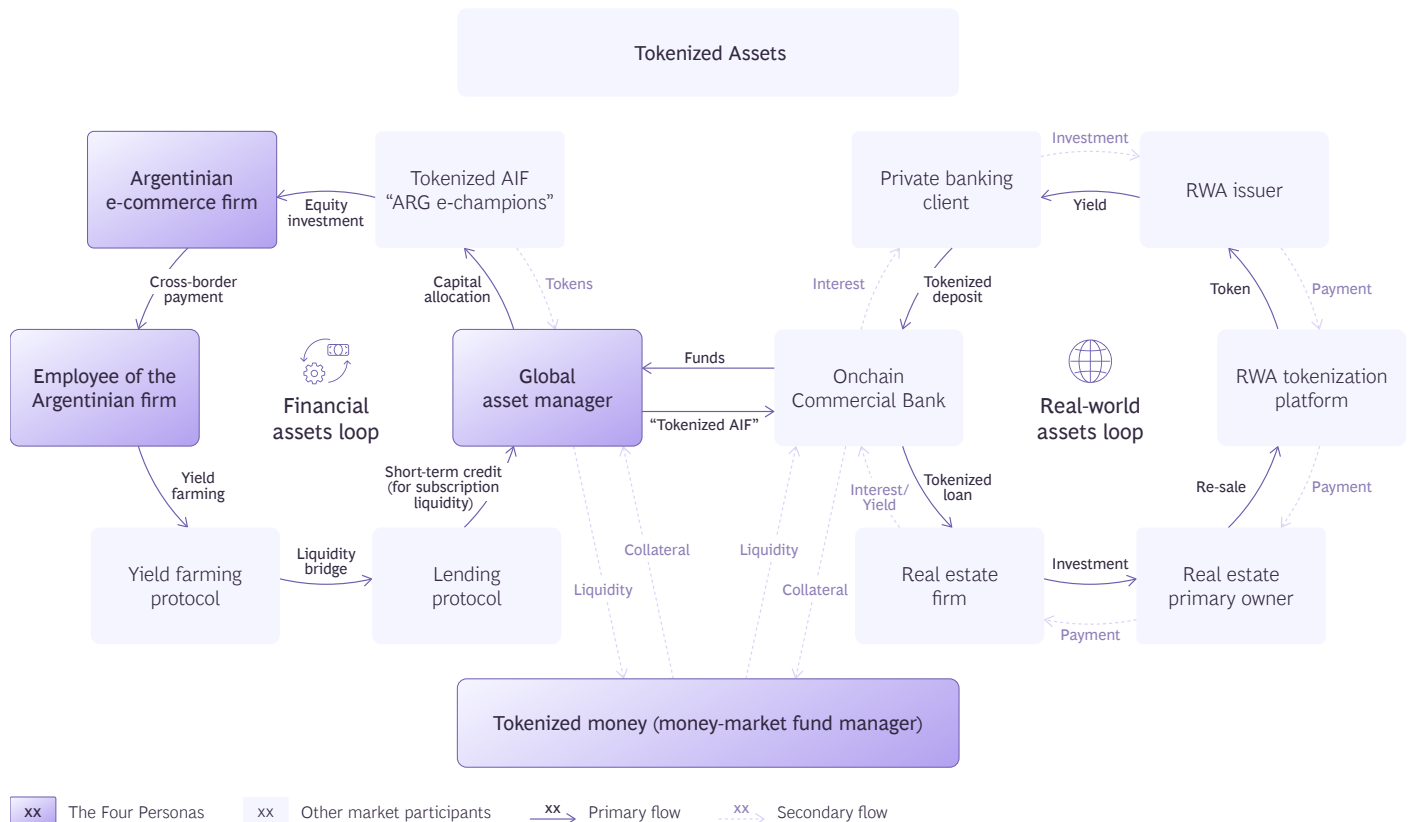
However, as the technology scales, adoption will accelerate. This type of technological change often becomes a flywheel: a set of reinforcing systemic cycles in which diverse aspects of the onchain system automatically add to one another's value.

There is already evidence of the transformative potential of the onchain finance ecosystem. As with many cases of exponential growth, adoption of onchain finance will seem slow at first. For example, many DLT applications still rely on frequent on-ramping (transferring value from bank accounts into digital tokens) and off-ramping (converting tokens back to traditional accounts). Each move fragments liquidity, restricts the extent to which onchain value can compound, and introduces friction, cost and risk.



## EXHIBIT 4

# The Onchain Flywheel Effect - Value Moves and Compounds Onchain



Source: BCG

Exhibit 4 shows the compounding effect on financial and real-world assets when all the flows remain end-to-end onchain. Three overall reinforcing effects are likely to emerge:

- **Recirculation:** Financial assets move seamlessly among onchain products – from payments to lending to investment – without leaving the ecosystem. This keeps value in motion and increases depth.
- **Liquidity:** Capital shifts instantly across chains and use cases, improving overall system liquidity and resilience. Market-makers and liquidity providers can operate more efficiently with transparent, shared settlement data.
- **Network effects:** Each additional asset, protocol, or participant increases the financial system's connectivity, data richness and viability for new products, attracting more users and capital.

# The Many Paths Forward

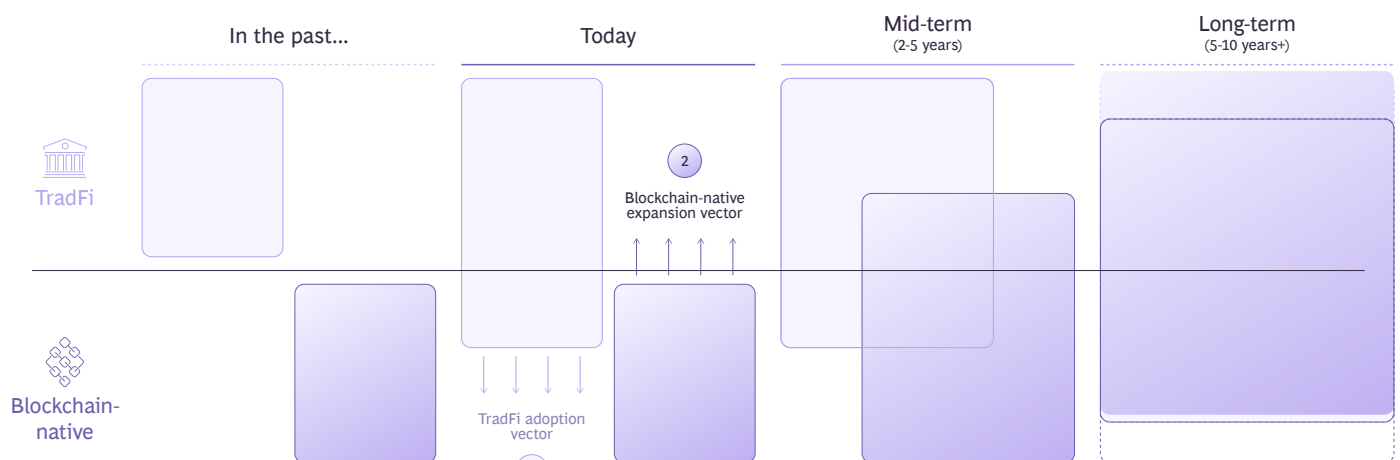
The advent of blockchain-based finance is most likely to continue. However, there are several alternative scenarios for the relationship between TradFi and blockchain-native players.

Historically, TradFi and blockchain-native players have operated in distinct segments, with different cultures, technologies, and regulatory contexts. Now, those boundaries are blurring. Banks, asset managers, and market infrastructure leaders are entering onchain ecosystems, while blockchain-native firms are seeking licenses, bank partnerships, and institutional-grade governance. The future will almost certainly involve convergence and coexistence.

The scale of opportunity is significant. IDC projects the global blockchain services market to exceed \$20 billion by 2026, driven by financial services modernization and regulatory clarity.<sup>20</sup>

## EXHIBIT 5

### Gradual Convergence of Tradfi and Blockchain-native Players and a Hybrid Future



20. IDC MarketScape, "Worldwide Blockchain Services Vendor Assessment", 2024

21. Casper Labs, "State of Enterprise Blockchain Adoption", 2023

22. Proskauer Rose LLP, "Kraken Becomes First Digital Asset Company to Receive U.S. Bank Charter", 2025

**Enhanced coexistence** would involve a scenario in which institutions from both worlds offer products and services that address the same needs through different designs, economic models, and delivery arrangements. End customers could obtain the same loan from either an incumbent TradFi bank or a blockchain-native player. If the TradFi institution brokered the deal, it would remain the creditor and might contract with a blockchain-native player to tokenize the collateral, but it would not be required to do so. If the customer went to the blockchain-native player, then that company would act as the creditor, earning yield from interest paid by the customer, with algorithmic risk management execution and tokenized collateral monitoring.

The details of convergence and coexistence could take multiple forms. Consider these four illustrative use-case scenarios for onchain finance, each reflecting a different interplay between TradFi and blockchain-native players:

**1. The onchain bank of the future.** Traditional institutions successfully adopt DLT, embedding blockchain into their core products and infrastructure. They brand themselves as onchain banks, at least in select parts of their value chains. They integrate tokenized assets, onchain payments and programmable finance into their existing channels, leveraging their licenses, balance sheets and client trust. Blockchain-native players collaborate with them as technology providers and innovation catalysts. Together, the two types of entities provide the infrastructural backbone of the new financial system, either augmenting or partially replacing the previous rails.

**2. Open-internet money.** Complacent TradFi institutions still retain a meaningful share of existing clients, but they react too slowly to defend their exclusive position as a central point of the financial system. They are no longer the only customer front-end. As TradFi resists adoption, blockchain-native players use that window of opportunity to claim certain parts of the value chain, offering superior economics as they leverage macroeconomic and regulatory tailwinds. This is the same dynamic that Clayton Christensen observed in the Innovator's Dilemma. Services that were the prerogative of banks for centuries are now unbundled. For example, smart contracts largely complement trade finance services.

**3. Two-lane highway.** TradFi and blockchain-native players grow in parallel, with relatively limited integration. Tokenized and onchain finance remain a separate track, used by specific segments such as crypto-savvy retail, blockchain-oriented investment funds, and tech companies. Mainstream finance continues to operate on traditional rails. Interoperability improves over time, but regulatory constraints and limited risk appetites prevail. Legacy systems slow convergence. Customers meet their needs through coexistence: choosing products from either TradFi or blockchain-native players, but rarely together.

**4. Marginal change.** Regulatory pushback, repeated market disruptions, or black swan events eradicate the progress achieved since 2022. Plausible black swan events include the failure of a prominent stablecoin, the abandonment of a critical technology (perhaps involving a crypto fork war), or a major cyberattack resulting in severe retail losses. Political decisions could also trigger this scenario. Blockchain remains on the periphery of financial services, used for niche applications such as cryptocurrency trading or certain cross-border payments, without fundamentally reshaping financial systems.

A common theme we hear from corporate clients is their preference to step into the onchain world through a bank they already know and trust

#### VID HRIBAR

Blockchain Hub, Raiffeisen Bank International

We may end up with two worlds competing: a free-flow internet-based and bank-controlled finance – a Blu-ray versus HD-DVD moment – before someone becomes the "Netflix of onchain finance" that connects them.

#### YUE HONG ZHANG

Managing Director & Partner, Head of Web3, BCG APAC

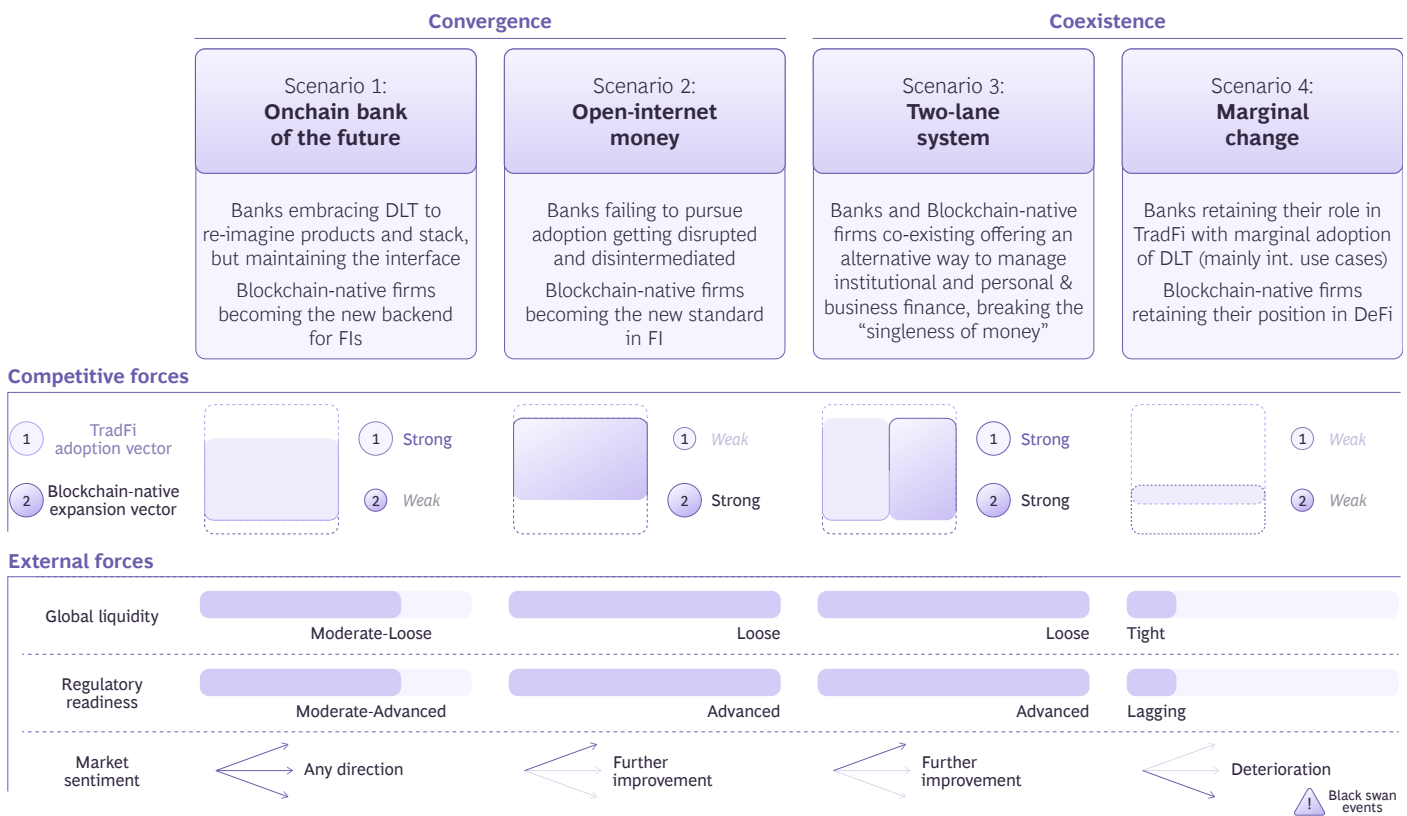
To be sure, the actual outcome will likely combine elements from several of these scenarios, with variations across regions and market segments. For example, some markets may exhibit strong bank-led ecosystems on the chain, whereas others remain dominated by open-source protocols.

Moreover, convergence and coexistence may interact differently across different parts of the financial services value chain. For example, while we might see convergence in treasury and liquidity management, there could still be coexistence in retail investments and deposits, giving customers options to choose between TradFi and blockchain-native providers.

The adoption horizon for onchain finance could be rapid or delayed. It depends on how quickly institutions can modernize their underlying foundations.

## EXHIBIT 6

# Four Scenarios for the Future of Finance



It is widely expected that meaningful elements of these scenarios could unfold within a decade, though the pace and scale will vary by jurisdiction and segment. The critical constraint is not technology. It is the business model, organizational, and regulatory readiness.

In the long run, large parts of the financial industry will be onchain – traditional banks and blockchain-natives alike. The real question is which institutions manage the transition, and which ones disappear along the way.

### KAJ BURCHARDI

Managing Director, Global Blockchain Lead,  
BCG Platinion

To realize the potential of onchain finance, both sides of the ecosystem must change how they operate. The greatest challenges concern business models, risk management, and corporate governance.

Traditional finance players need to:

- **Rethink business models and incentives**, moving away from closed, highly intermediated architectures towards more open, interoperable value chains. This will be challenging. It will require significant trade-offs, abandoning closed systems and some proprietary information flows to remain competitive. On the other hand, it will rapidly enhance a TradFi firm's competitive advantage in the market.
- **Adapt risk management and control frameworks** to offer smart contracts, code-driven processes, onchain data, and new counterparty constellations.
- **Upgrade infrastructural foundations** to support real-time, programmable value flows, including modern core systems, APIs, and integration with blockchain networks.
- **Accelerate innovation at scale**, shifting from small pilots to platform plays and product roadmaps aligned with client demand.

Blockchain-native players need to:

- **Build robust risk-management and compliance** capabilities that align with financial-industry standards, including KYC/AML, market abuse prevention, and operational resilience.
- **Establish clear governance**, guardrails, and escalation paths for protocol changes, incident management and client communication.
- **Develop the skills and processes required to work with institutional stakeholders** such as regulators, pension funds, asset managers, insurers and public-sector entities.
- **Invest in user experience** to make onchain products intuitive for non-expert users and institutional clients.
- **Invest in branding** and education to convince a broader audience that these upstarts are as trustworthy as TradFi institutions.

Seamless experience is key – when customers don't even know they're making a blockchain payment, the business impact is undeniable.

**MUHAMMAD MALIK**

Head of Strategic Projects, First Abu Dhabi Bank

The real barriers are not technical. They are inertia, embedded behaviours, incentives and network effects.

**INDERPREET BATRA**

Managing Director & Senior Partner, Global Head of Payment and Fintech, BCG



# Infrastructure for the Future of Finance

The onchain future of finance requires more than incremental upgrades to existing systems. Legacy architectures were not built for programmable, 24/7, real-time value flows across multiple chains and jurisdictions. Onchain finance introduces a dedicated digital-asset operating layer that integrates with, rather than replaces, the traditional banking stack, allowing digital assets to be consumed as a native asset class by existing channels, services, and cores. To make it work, new components are required. Rather than a standalone “crypto-stack”, these components will gradually be embedded in existing systems and, over time, will run horizontally in the backend of tomorrow’s financial infrastructure, enabling multiple use cases across organizations.

To ensure these new components are both scalable and future-proof, institutions should design the future infrastructure according to five guiding principles:

- **Use-case driven.** The architecture is defined by concrete client journeys and business outcomes, with custody, orchestration, and connectivity shaped around those needs;
- **Private by design.** Data is collected, stored, and shared with built-in privacy and access controls so that sensitive client and transaction information is only available to permitted parties.
- **Modular and regulation-aware.** Key functions are organized into loosely coupled, configurable components, so the same set of building blocks can serve different regulatory regimes, deployment models and asset types.
- **Open and network-agnostic.** Onchain components are designed to operate across multiple blockchains and token standards and to interoperate with external providers, thereby limiting dependence on any single network.
- **Secure by design.** Security, governance, compliance and operational resilience are treated as core

The underlying infrastructure of the financial system is increasingly going to be built on blockchain. It’s similar to 25 years ago when people were asking whether every company would be on the internet.

## AMIRA VALLIANI

Head of Strategic Partnerships, Solana

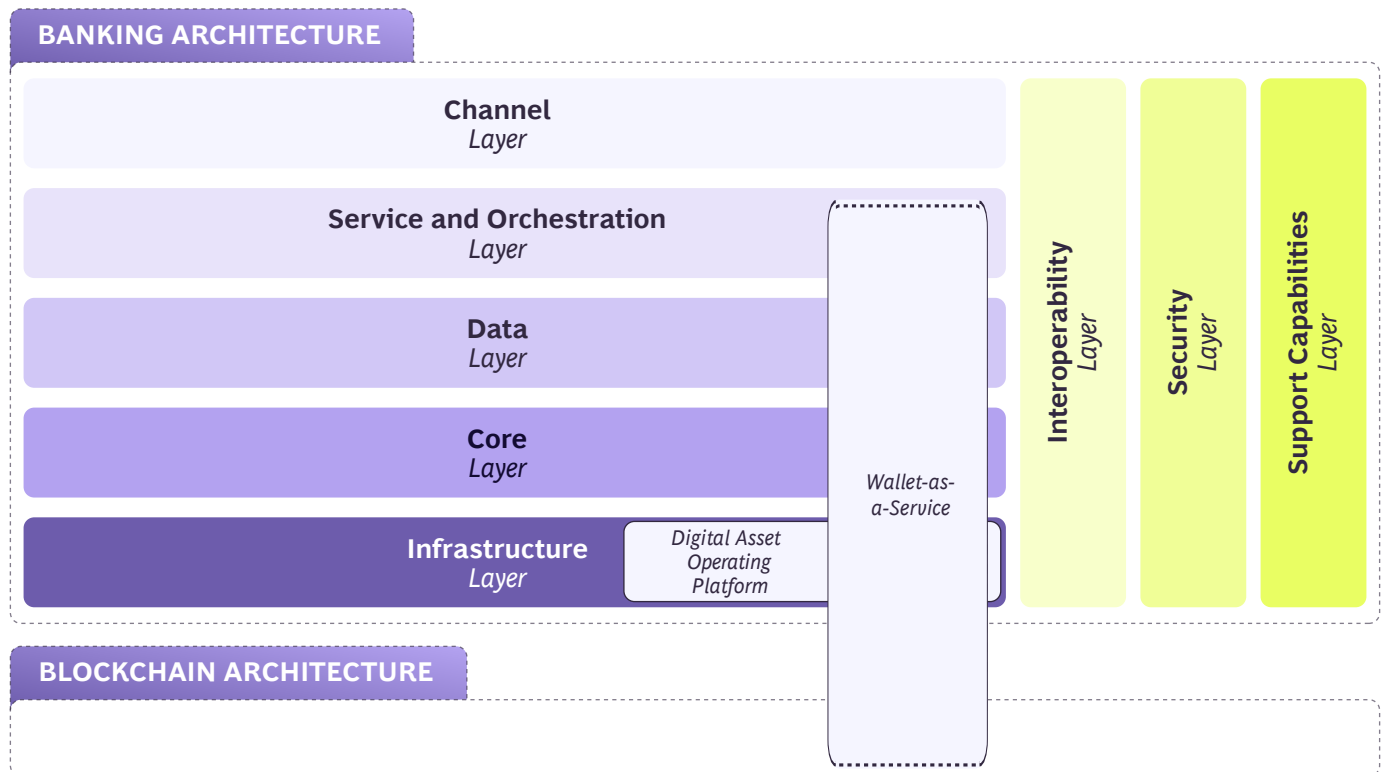
architectural properties rather than optional add-ons.

Grounded in these principles, such components will:

- Orchestrate complex, multi-party workflows across chains, digital asset specific (3rd party) services, and organizations, structured around concrete use-cases and business outcomes;
- Protect sensitive data end-to-end through strict control over how onchain and offchain information is shared and accessed, maintaining confidentiality of client and transaction data across the lifecycle;
- Allow institutions to respond to a fragmented and evolving regulatory landscape through modular components, configurable policies, and deployment models that can be adjusted as regulatory rules evolve;
- Ensure interoperability between different blockchains and traditional financial rails, while remaining network-agnostic;
- Securely manage digital identities, keys, and assets at an institutional scale, meeting stringent requirements on security, compliance and resilience.

## EXHIBIT 7

# Reference Architecture for Onchain Banking of the Future



Source: BCG X

This infrastructure will not replace all existing systems overnight. Instead, it will sit alongside them and gradually integrate with them, creating hybrid architectures in which onchain and offchain components interact fluidly.

Privacy is the key unlock for institutional adoption. It isn't just another feature, it's the foundation for uniting traditional finance and crypto.

### YUVAL ROOZ

Co-Founder and CEO, Digital Asset

Exhibit 7 illustrates how digital assets integrate with a familiar banking architecture. Rather than embedding blockchain logic directly into existing systems, institutions introduce a dedicated digital-asset operating layer that integrates cleanly across services, data, and core banking systems. This approach allows digital assets to be consumed as an additional asset class, while isolating the unique operational, security, and execution requirements of onchain finance.

- **Channel Layer.** Aggregates all customer-facing touchpoints across web, mobile, mail, chat and assisted channels to deliver a consistent client experience for both traditional and onchain financial products;

- **Service and Orchestration Layer.** Coordinates processes and business rules across systems, including wallet and tokenization, automating journeys end-to-end;
- **Data and Privacy Layer.** Manages and distributes trusted onchain and offchain data for operations, analytics, and reporting, with built-in privacy and access controls to ensure that sensitive data is only shared with permitted parties;
- **Core Layer.** Provides core banking and financial-product capabilities across lending, payments, trading, deposits, and digital assets;
- **Infrastructure Layer.** Provides the foundational technology stack for blockchain networks and nodes, combined with cloud and on-prem infrastructure;
- **Interoperability Layer.** Connects systems and partners through APIs and cross-chain / onchain-to-TradFi bridges and workflow intents;
- **Security Layer.** Ensures identity, access, key and wallet security, fraud prevention and protection of data and transactions;
- **Support Capabilities.** Enables delivery and operations through DevSecOps, incident management, governance, and business continuity.

Within this broader architecture, the Infrastructure layer does much of the heavy lifting in making onchain finance

production ready. To harness the benefits of blockchain technology, financial institutions will need to deploy Digital Asset Operating Platform, which provides a secure and scalable environment for operating digital asset services, and includes Wallet-as-a-Service (WaaS), which provides a secure transactional edge for interacting with onchain assets and protocols.

## Digital Asset Operating Platform

The Digital Asset Operating Platform infrastructure is the unified, programmable control plane that powers regulated digital-asset operations and use cases at scale. It extends an institution's existing stack without requiring changes to core systems, while centralizing execution, governance, and security for onchain activity.

The platform combines Wallet-as-a-Service (WaaS) with:

- **Enterprise orchestration and integrations for rapid deployment.** Central control point that integrates and orchestrates digital-asset services such as staking, yield, compliance, on/off-ramps, and liquidity providers, enabling multi-issuer and, over time, multi-custody set-ups;
- **Transaction and data management.** Standardised transaction lifecycle services and consolidated onchain/offchain data for operations, risk, finance, and regulatory reporting;
- **Programmable policy-driven governance and workflows.** Policy and workflow engine that mirrors institutions' internal processes, enforcing segregation of duties, approvals, limits, whitelists/ blacklists, jurisdiction-specific rules, and multi-party approvals across chains;
- **Confidential computing and technical assurance.** Protection of end-to-end processes and workflows, not just cryptographic keys, using hardened and isolated execution and MPC/HSM-backed key controls to minimize privileged insider risk and provide end-to-end technical assurance that configured policies are actually enforced;
- **Air-gapped cold signing aligned with regulator expectations.** Policy-driven, locked-down, timer-based offline-signing models that preserve regulatory intent and offline security while enabling automated, scalable, and out-of-hours execution, with reduced insider and coercion risk.

Taken together, these capabilities make the Digital Asset Operating Platform the backbone for regulated digital-asset operations, enabling institutions to run a broad range of use cases securely and at scale while managing a controlled transition from today's traditional infrastructure toward a hybrid onchain-enabled future.

## Wallet-as-a-Service (WaaS): The Digital Asset Operating System

Wallet-as-a-Service is the execution and control layer of the Digital Asset Operating Platform. It provides a standardized, policy-enforced interface for interacting with onchain assets, allowing institutions to treat digital assets as another asset class within their existing stack.

For regulated financial institutions, WaaS encompasses:

- **Onchain–TradFi integration:** Connector between onchain networks and traditional financial systems, integrating multiple blockchains and token protocols with core banking, payment systems, and other traditional rails;
- **Secure custody:** Hardware-backed or MPC-based key management, policy-driven transaction approvals, and segregation of duties;
- **Identity and access:** Role-based access control, strong authentication, and integration with enterprise identity systems;
- **Governance:** Configurable approval workflows, limits, whitelists/blacklists, and audit trails aligned with regulatory expectations;
- **Interoperability and bridging:** Support for multiple chains, asset types, and protocols, enabling institutions to route, sign, and monitor transactions at scale.

By abstracting onchain complexity behind a hardened execution layer, WaaS enables banks, asset managers, fintechs and corporates to adopt digital assets without fragmenting their architecture or operating model.

Existing banking infrastructure will increasingly blend with blockchain-native interfaces, creating a new 'payment web' where traditional institutions and blockchain-native players are more likely to partner than to compete.

### TINA TARQUINIO

Chief Product Officer, IBM Z and LinuxONE

## Conclusion

Blockchain and DLT represent a structural opportunity to make the financial system faster, cheaper, more efficient, and more inclusive. Future financial institutions will likely combine elements of what are currently viewed as TradFi and onchain firms. Rather than replacing today's rails, onchain capabilities will sit alongside and progressively integrate with existing infrastructure, creating hybrid architectures that leverage the best of both worlds.

While it won't be a standalone prerequisite, providing scalable, institutional-grade infrastructure will be critical to enabling widespread adoption and allowing DLT to realize its full potential. Financial institutions that integrate wallets, blockchain networks, bridges, and protocols will be one step ahead in delivering a superior customer experience at optimized cost.

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# About the report

This BCG report co-developed with Dfns and IBM reflects a joint perspective on the future of onchain banking from Dfns, IBM and BCG.



## About IBM Digital Asset Haven

In 2025, IBM launched IBM Digital Asset Haven, a comprehensive solution for financial institutions, governments, and corporations to securely manage and scale their digital asset operations. Banks and governments now have a single solution to manage their digital asset lifecycle – from custody to transactions to settlement – that helps them meet compliance obligations while being integration-ready. IBM Digital Asset Haven incorporates Dfns technologies as one component of IBM's overall solution architecture, which is currently available as SaaS and Hybrid SaaS offering.

### Key features include:

- Transaction Lifecycle Management supports the blockchain transaction process, from automation and routing to monitoring and settlement, across more than 40 connected public and private blockchains.
- Governance and Entitlement Management via a unified framework for wallet access, policy enforcement, and transaction approvals. It's supported by multi-party authorization workflows configurable for a broad range of operational scenarios.
- Integrated Third-Party Solutions designed to accelerate deployment with pre-integrated services for identity verification (KYC), financial crime prevention (AML), yield generation, and more. Clients can implement additional integrations via developer-friendly REST APIs, SDKs, and tools. This strategy positions partners and developers to integrate their solutions with IBM Digital Asset Haven to accelerate innovation.
- Holistic Security and Key Management is built on IBM's infrastructure for secured digital asset operations, including support for Multi-Party Computation (MPC) and Hardware Security Module (HSM)-based signing using the IBM Crypto Express 8S HSMs, embedded in IBM Z, and IBM Offline Signing Orchestrator (IBM OSO) for secured cold storage operations.

Get started or book a meeting:

<https://www.ibm.com/products/digital-asset-haven>.



## About BCG

Boston Consulting Group partners with leaders in business and society to tackle their most important challenges and capture their greatest opportunities. BCG was the pioneer in business strategy when it was founded in 1963. Today, we work closely with clients to embrace a transformational approach aimed at benefiting all stakeholders—empowering organizations to grow, build sustainable competitive advantage, and drive positive social impact. Our diverse, global teams bring deep industry and functional expertise and a range of perspectives that question the status quo and spark change. BCG delivers solutions through leading-edge management consulting, technology and design, and corporate and digital ventures. We work in a uniquely collaborative model across the firm and throughout all levels of the client organization, fueled by the goal of helping our clients thrive and enabling them to make the world a better place.

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Together, we believe that onchain finance represents both a challenge and an opportunity. The challenge lies in rethinking long-standing assumptions about products, infrastructure and risk. The opportunity is to build a financial system that is faster, more efficient and more inclusive – one that better serves institutions, businesses and individuals in the digital economy.

The time to start this new chapter is now.

