Approaching the Tokenization Tipping Point

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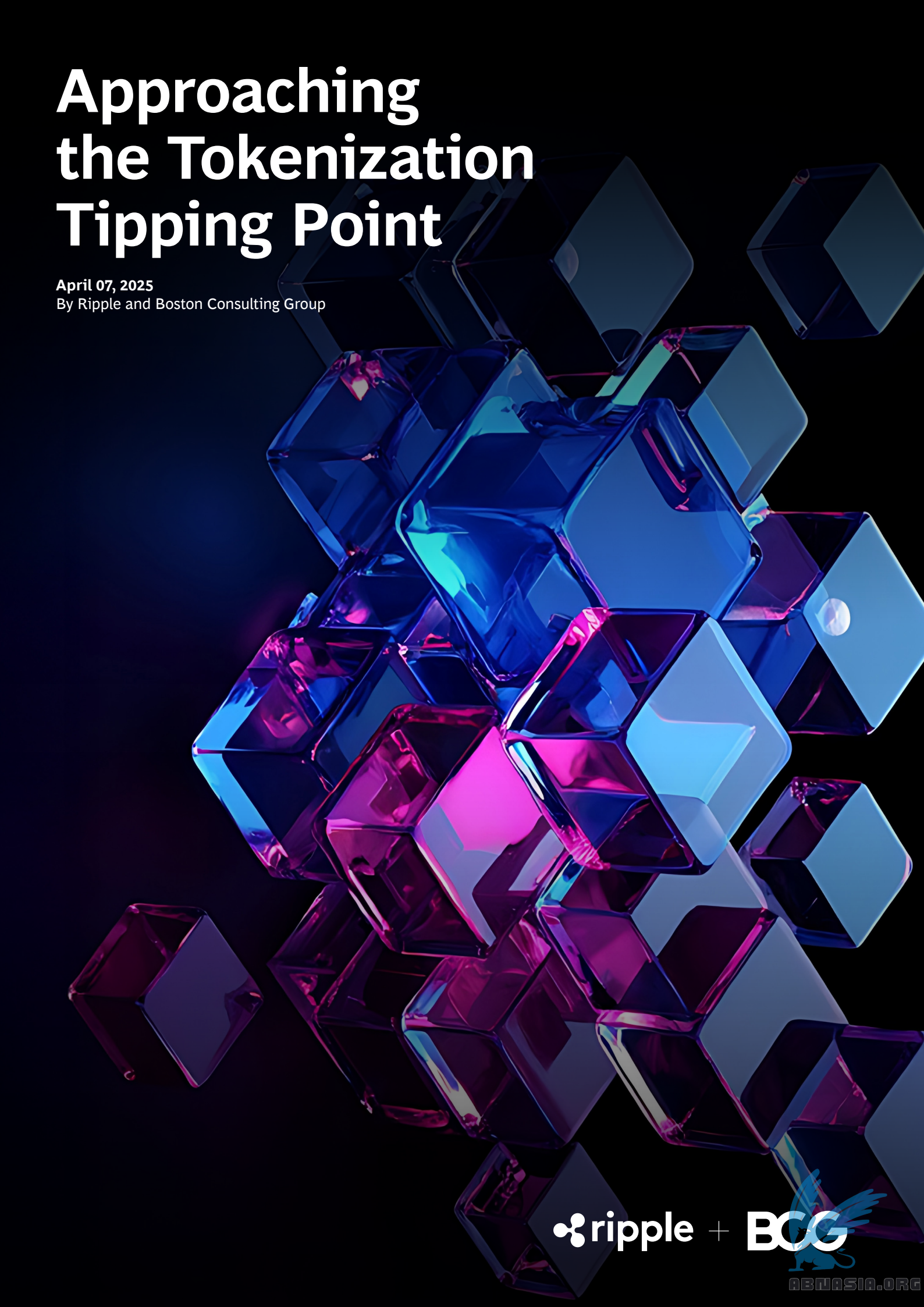
By Ripple and Boston Consulting Group



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A system on the brink of reinvention

The shift to a tokenized economy is turning financial assets from static instruments into dynamic software. Tokenization isn't a digital overlay or an addition to the global financial system. It's a redesign of the infrastructure layer that financial institutions have depended on for years. The promise: a financial system that's programmable, interoperable, always on, instant, and broadly accessible.

Global finance has run on infrastructure built decades ago. It is fragmented, partly slow, and increasingly out of sync with how markets, clients, and capital behave nowadays. With tokenization, the ownership of an asset and its value are recorded in a shared digital ledger and transferable 24/7. Tokens can represent a financial (or a non-financial) asset—securities, property, funds—and enable fractional ownership, instant transaction settlement, and embedded compliance. As tokenization scales globally, it reduces intermediaries, accelerates transaction cycles, and unlocks broader market access.

The technology based on blockchain, which was introduced in 2008, is no longer new. What's novel is the realignment: shifts in maturity of technology, advances in regulation, and a growing recognition of transformative potential that leads to institutional commitment. The infrastructure is finally catching up with the vision.

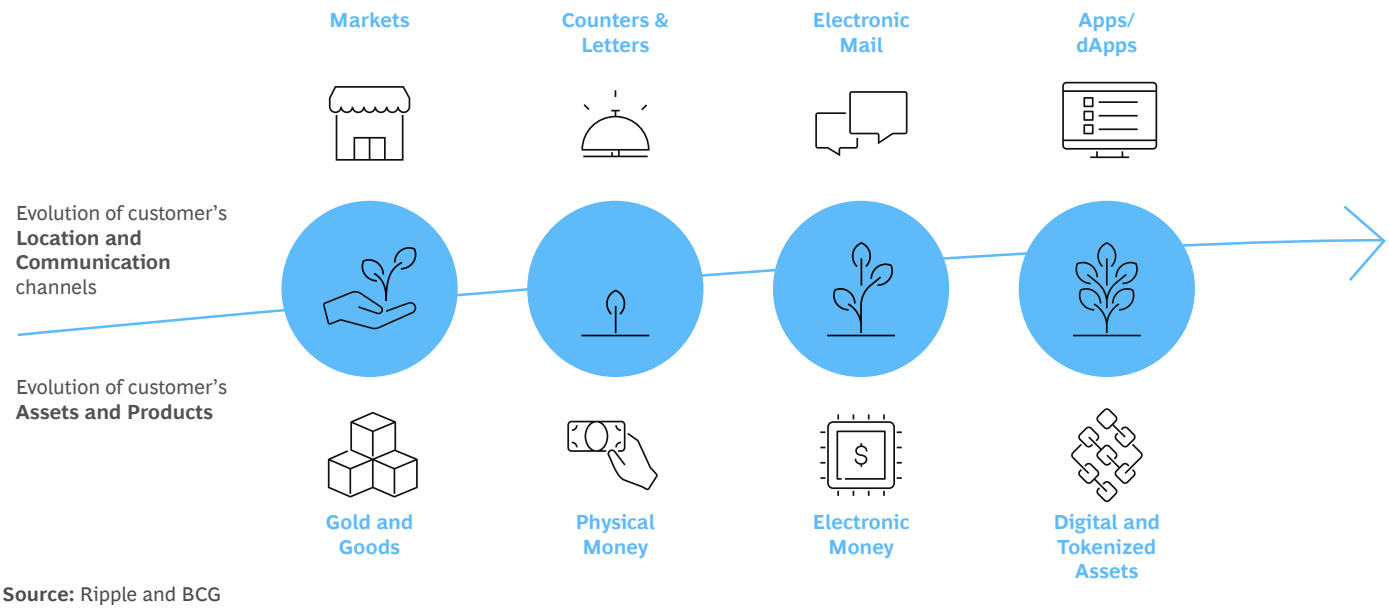
Institutions that act now will gain more than just cost savings. By embedding token-based models into their operations, they unlock new revenue streams, reach new client segments, and stay relevant to the most advanced users in the market.

This report, by Ripple and Boston Consulting Group, lays out the state of tokenization today, where it's heading in the next five to eight years, and why now is the moment to act—before the pace is set entirely by early movers, many of whom are already shaping the market. We cut through the hype to examine what's working, what's not, and how institutions can move from pilot projects to scale. For financial institutions, tokenization is no longer a side project. It is increasingly emerging as a strategic path and a likely next step in the evolution of finance, as illustrated in Exhibit 1.

"There's a time for competition and a time for collaboration," says Jorgen Ouaknine, Global Head of Innovation & Digital Assets at Euroclear, a global financial market infrastructure provider. "Without industry alignment on shared infrastructure, we risk creating more silos and fragmentation—the very challenges we aim to overcome."

EXHIBIT 1

Evolution of Tokenized Financial Services



Source: Ripple and BCG

The prospects of exponential growth

The market of tokenized assets has fluctuated over the years. When it was first introduced, these assets were seen as one of many forms of digital currency. In 2022, after the collapse of several high-profile blockchain projects, momentum stalled temporarily. Since early 2023, the market value has seen a double-digit CAGR.

"Tokenization is advancing at different speeds across asset classes—fastest where it delivers real efficiencies and where conditions allow for secondary markets to emerge," observed Laurent Marochini, CEO Luxembourg, Standard Chartered.

Many overlapping structural and market forces are contributing to the growth:

Regulation, technology, and infrastructure readiness:

- Expanding regulatory clarity, as more jurisdictions move towards comprehensive legal frameworks for digital assets;
- Blockchain-related technology has matured into enterprise-grade infrastructure—with integration into the core banking stack and wallets, custody platforms, and token standards fit for institutional use;
- Technological advances, including user-friendly infrastructure (such as wallet integration on mobile phones) are lowering adoption barriers.

Institutional adoption, strategic investment, and platform integration:

- Blockchain adoption by global banks for cross-border payments and settlement automation;
- Scaling by some Tier 1 financial institutions, moving from pilots to live platforms—for example, JPMorgan's Kinexys has processed over USD 1.5T in tokenized transactions since launch, with daily volumes exceeding USD 2B;
- Fintech and technology M&A, with banks and major financial institutions acquiring startups to accelerate tokenization capabilities.

Market behavior, asset expansion, and investor demand:

- Follower effect, where market leaders attract further issuer and investor participation in tokenized instruments;
- Learning effects, with first movers refining their implementation strategies and disseminating knowledge;
- The rise of tokenized commodities, including gold, oil, and agricultural products;
- Demographic-driven demand from younger investors, who show a strong preference for digital assets, and whose interest is fueled by their rising incomes and generational wealth transfer to them.

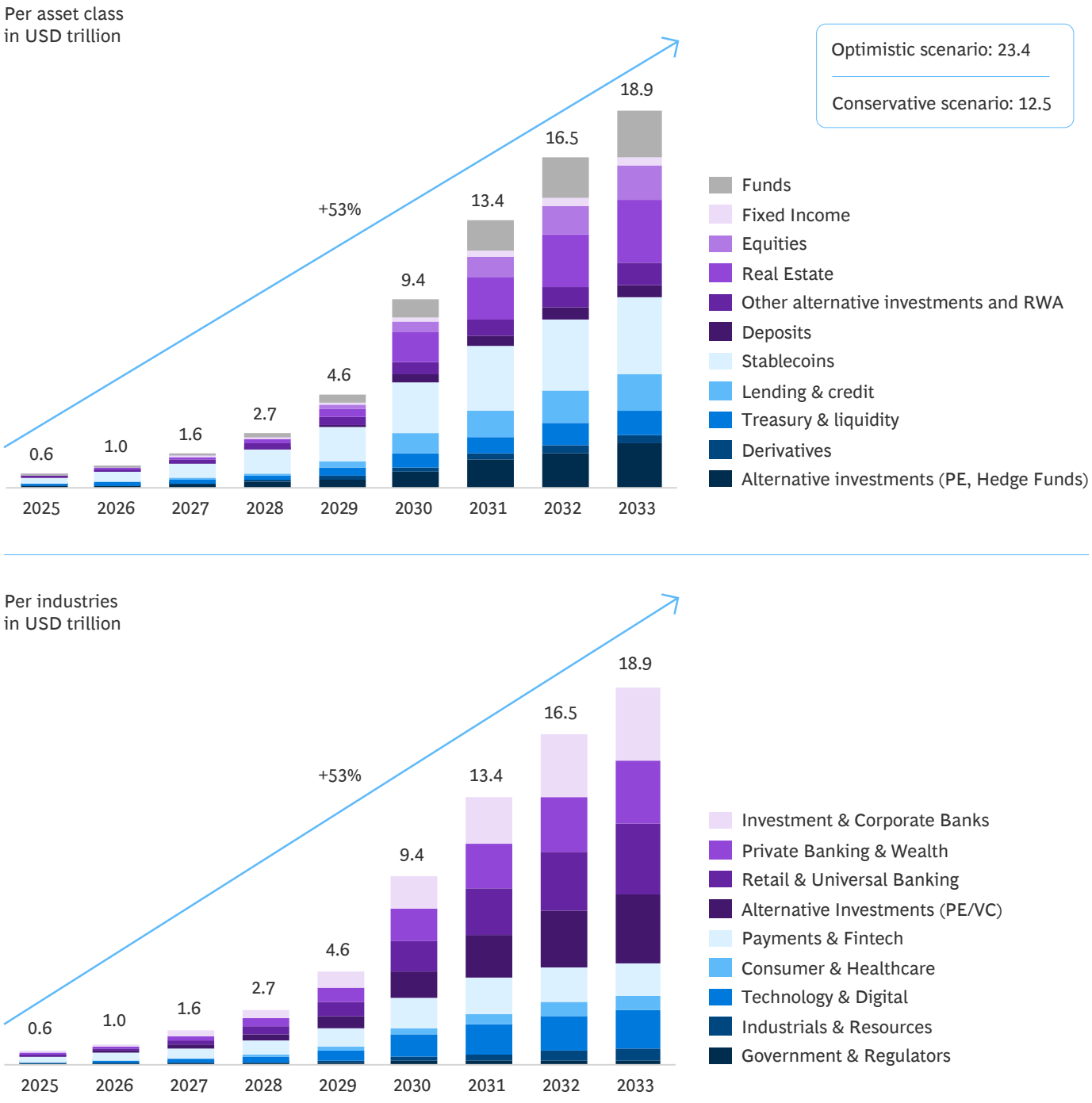
Estimated market growth by asset classes, industries, and geographies:

Tokenization of real-world assets is projected to grow from around USD 0.6T in 2025 to USD 18.9T by 2033 in the midpoint scenario, representing a 53% compound annual growth rate. Exhibit 2 shows projected tokenization volumes by asset class and estimates their market value by 2033, based on current valuations and forecast growth rates. It also breaks down expected volume by the industries initiating tokenization.

The sizing focuses on real-world asset classes with high tokenization potential and relatively stable valuation profiles. Cryptocurrencies are excluded due to their high speculative use, while CBDCs are omitted as monetary policy instruments that do not necessarily rely on blockchain infrastructure. Market forecasts for China and Russia are not included due to regulatory restrictions and limited market accessibility.

EXHIBIT 2

Estimated Growth in Tokenization Through 2033



Source: Ripple and BCG

Exhibit 2 also shows the volume of assets being tokenized, segmented **by the industries** that initiate the tokenization process (to avoid double-counting across the value chain). In the early years, financial institutions will lead by tokenizing instruments like bonds and funds. From 2029 onward, tokenization by corporates in consumer goods, industrials, and tech will begin to scale. The projections assume no major economy will issue bonds beyond sandbox initiatives during the analyzed period.

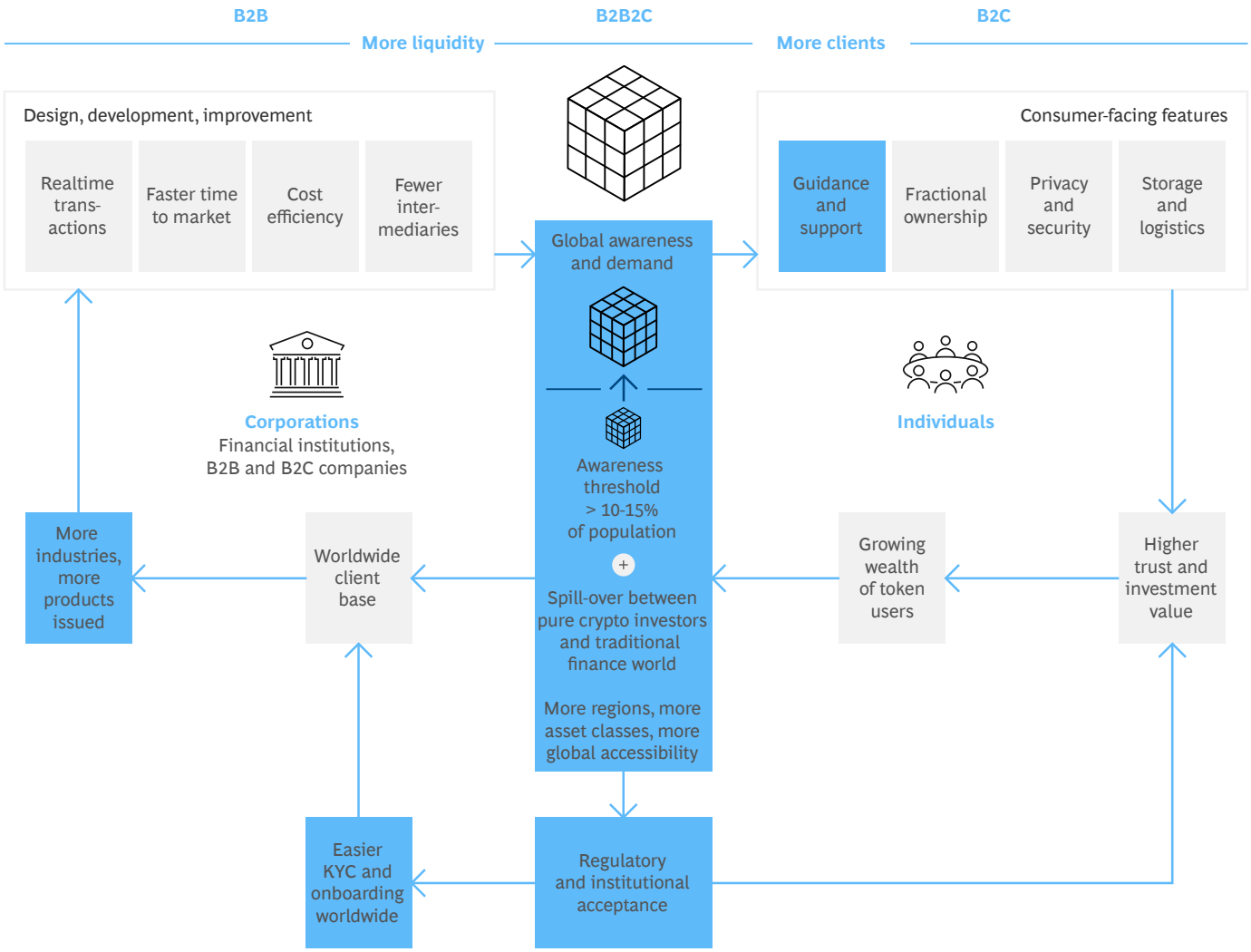
The global landscape for tokenized assets is advancing at different speeds, shaped by geographical differences in adoption, regulation, and use cases. The United States is scaling tokenized funds, treasuries, and collateral, bolstered by recent steps toward regulatory clarity. Europe is moving forward under the MiCA framework, which lays the groundwork for harmonized adoption across the region. Switzerland remains ahead with one of the earliest and most comprehensive legal frameworks for tokenized securities and DLT infrastructure. In the Middle East, tokenization efforts are concentrated in real estate and private credit, enabled by aligned policy and sovereign backing. Across Asia-Pacific, leading jurisdictions (Japan, Singapore, and Hong Kong) are piloting tokenized funds, bonds, and structured products through regulatory sandboxes and industry consortia. Latin America, led by Brazil, is expanding via fintech-driven platforms and tokenized USD-denominated assets. In Africa, adoption is gaining traction in remittances and inflation-resistant instruments, supported by mobile-first infrastructure and stablecoin rails.

Innovation and the self-reinforcing flywheel effect:

As with many innovations, the dynamic between technological development and market response is crucial, often triggering a self-reinforcing cycle of adoption. Exhibit 3 shows the system of organic growth that follows for tokenization. Essentially, this represents the interaction of two self-reinforcing cycles: two flywheels of activity that propel each other forward, where improvements on the supply and demand side work together and are self-nurturing. Innovation adoption takes off when 10-15% of market participants of an industry or clients are familiar with the new technology (as found in E. Rogers' research)—and tokenized assets are hitting that point now.

EXHIBIT 3

The Twin Flywheels of Tokenization Market Adoption



On the left is a cycle of increasing corporate involvement and process innovation. Financial institutions, consumer-facing companies, and B2B enterprises are investing in the design, development, and improvement of tokenized asset offerings. They are speeding up time-to-market for new tokenized assets, offering real-time transactions, bringing down costs, and reducing the number of intermediaries—further accelerating the market adoption shown here as "global awareness and demand." These benefits, in turn, help expand their worldwide client base, providing more capital for investment. The number and scale of tokenized asset offerings increase.

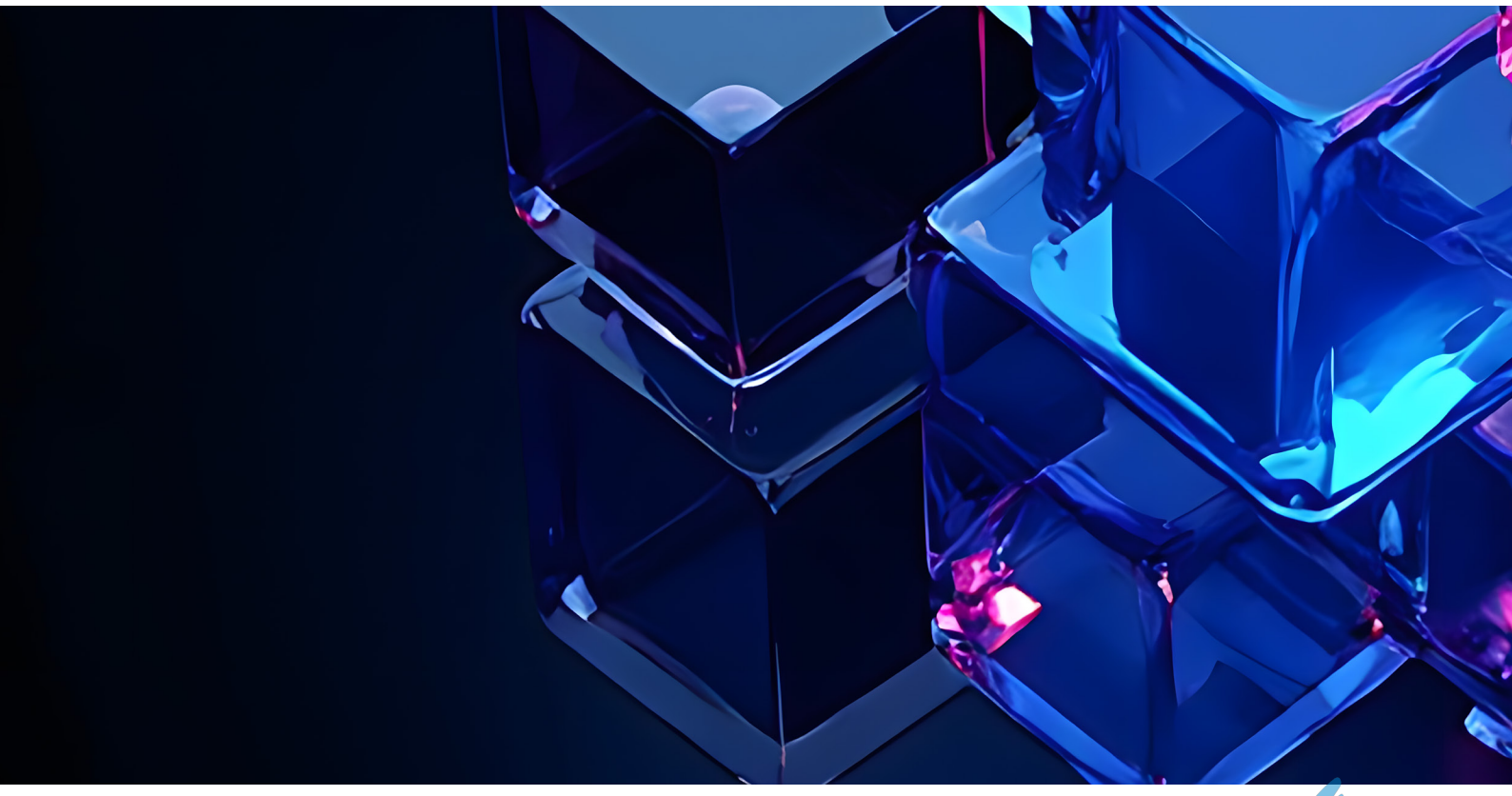
Simultaneously, on the right-hand side that illustrates customer adoption, individuals and enterprises benefit from continually enhanced features such as fractional ownership options, improved privacy and security, and logistic advantages. These improvements build higher trust and investment value in the ecosystem, which in turn attracts more individual consumers, who see their wealth grow—and thus the cycle continues to accelerate.

The core driver of the flywheel is the growing number of asset owners and customers who adopt tokenization, thus attracting others to the system. An education process, shown here as "guidance and support," conveys the advantages of tokenization. Financial planners (and AI agents in the near future) can talk about the use cases currently active, which demonstrate the enhanced liquidity and operational efficiency that tokenization offers.

"So far, there is limited interlinkage between tokenization in the financial industry and tokenization in crypto," said Yue Hong Zhang, a Managing Director and Partner at BCG Hong Kong. "With the recent growth of RWA, people outside the crypto industry routinely ask [about] tokenized assets' potential to address historically underpenetrated segments. Global adoption is poised to grow exponentially."

The platform gains further momentum through regulatory and institutional acceptance, as shown at the bottom of the exhibit. More effective Know Your Customer (KYC) processes raise the credibility of tokenized asset transactions, and more accessible worldwide onboarding makes it easier for these innovations to reach people in emerging economies, who may have the greatest need.

In many cases, customers will not realize that their transactions take place through tokenized assets or wallets. The practices and legal frameworks will remain out of sight. These customers will, however, appreciate the benefits: easier access to high-reward investment opportunities, lower transaction costs, and more rapid turnaround. In other cases, digital assets will play a strategic role in diversified investment portfolios—used not only as collateral for credit activities like low-interest loans, but also to broaden exposure across asset classes, geographies, and risk profiles.



The three phases of tokenized asset adoption

Tokenization adoption is progressing through three phases, reflecting market maturity more than technical readiness. The path is shaped by regulation, institutional appetite, and the development of scalable infrastructure. Most firms are in Phase 1 or entering Phase 2.

Phase 1: Low-risk adoption

The first phase focuses on institutional onboarding via tokenization of familiar, regulated instruments (e.g., money market funds, corporate bonds) where operational gains are immediate and compliance is relatively straightforward. These early efforts help institutions stand up in-house infrastructure for custody, issuance, and settlement.

BlackRock's tokenized US dollar institutional money market fund, launched in 2023 on the Ethereum blockchain, marked a key milestone: a fully regulated, on-chain product offering 24/7 settlement and investor access through digital wallets. The Bank for International Settlements (BIS) has included tokenization in key initiatives like Project Guardian, reflecting its role in future regulated financial infrastructure.

The objective in Phase 1 is not scale—it's institutional readiness. Most pilots are limited in scope but crucial for building foundational capabilities. This perspective is echoed by Vid Hribar, Blockchain Hub, Raiffeisen Bank International AG. "Banks have different size, focus and ambitions in digital assets and smaller banks might not be the ones establishing the standards. However, they should prepare by conducting pilots, establish a dedicated team, build the necessary infrastructure, and develop a clear understanding of the current regulatory options."

Phase 2: Institutional expansion

In Phase 2, institutions begin tokenizing higher-yield, more complex assets such as private credit, structured finance, and corporate bonds. These products demand flexible compliance logic, secondary market infrastructure, and broader investor access. Unlike Phase 1, which focused mainly on efficiency gains, this stage is about unlocking broader value: liquidity, composability, and yield.

Firms are beginning to move from private to permissioned-public blockchains, a shift that enables greater liquidity and interoperability. Recent examples include Société Générale and Citi.

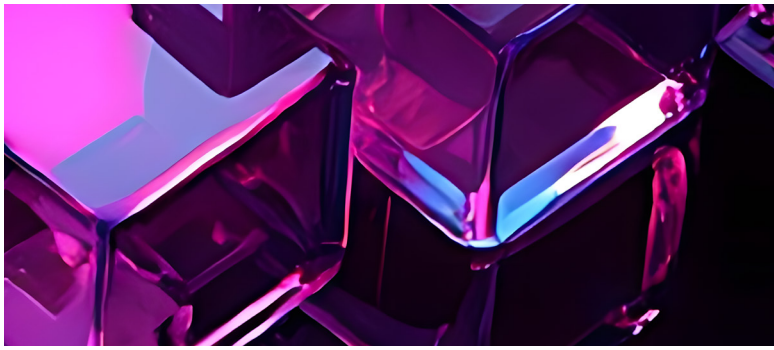
Some institutions also experiment with tokenized real estate and infrastructure assets, often structured via Special Purpose Vehicles (SPVs) or fund wrappers to navigate regulatory requirements. This phase accelerates as demand grows for yield, regulatory progress, and maturing platform capabilities. Momentum also depends on clearer regulation of tokenized debt, structured products, and digital custody—areas where progress is accelerating today, but is still uneven across jurisdictions. Yet many institutions remain hesitant to move beyond contained pilots—not because of technical constraints, but because new models challenge existing revenue streams. Instead of collaborating to reshape the market, too many are focused on defending legacy business lines that may not survive the transition.

Phase 3: Market transformation

Phase 3 is a system-level shift. Tokenization extends further to illiquid asset classes—private equity, hedge funds, infrastructure, and real estate-backed debt. While the timing varies by the asset class, the transition requires sufficient secondary market liquidity, acceptance of tokens as collateral in key financial workflows, regulatory frameworks supporting full lifecycle servicing (issuance, distribution, compliance), and institutional infrastructure capable of supporting custody, pricing, KYC practices, and accounting of tokenized holdings.

No single firm can build this alone. Industry-wide coordination among custodians, issuers, exchanges, and regulators is essential.

Profitability, efficiency, and innovation all drive further adoption during this phase. Tokenization enables new business models, distribution channels, and market access. Institutions that lead in building this infrastructure will define how the next generation of finance operates.



From hype to hard value: five tokenization use cases

A growing number of financial institutions have moved from pilot to production, using tokenization to solve specific frictions in issuance, settlement, and capital access. Yet scaling remains constrained by fragmented infrastructure and regulation, requiring coordinated execution to move forward.

Exhibit 4 provides a high-level summary of the efficiency potential enabled by tokenization for five core use cases—two commercially viable today and three poised to scale once key enablers are in place. Following this overview, detailed deep dives for each use case are presented below.

EXHIBIT 4

Efficiency Potential Enabled by Tokenization

Investment-grade Bonds

Savings of

USD 40M-60M

Annually, for USD 100B in issuance, by reducing intermediaries and automating issuance, settlement, and compliance through smart contracts.

Real Estate

Savings of

USD 100M-150M

Over 5 years, for a real estate fund with USD 5B in AUM, by reducing admin costs through automation. Additional USD 500M - 1B in new capital possible via fractional ownership and broader investor access.

Collateral & Liquidity Management

Savings of

USD 150M-300M

Annually, for a global bank with USD 100B in daily repo volume, by reducing idle collateral and accelerating settlement cycles.

Trade Finance & Working Capital

Savings of

USD 2B-4B

Annually, for a firm processing USD 50B in trade volume, by accelerating invoice settlement and programmable payments. Additional reduction of financing costs by USD 20M - 50M achievable through tokenized receivables.

Treasury & Cash Management

Savings of

USD 55M-140M

Annually, for a multinational company managing USD 1B in idle cash and 10B in payments, by boosting yield, reducing FX and processing costs, and improving liquidity efficiency through tokenized money.

Use cases gaining traction now

Beyond **stablecoins**, at least two use cases—**investment-grade bonds** and **real estate**—have shown meaningful early traction. They are being pursued by a growing number of financial institutions in regions with supportive regulation and early platform maturity. These are no longer one-off experiments, yet significant limitations remain: settlement is siloed, secondary markets are thin but slowly deepening, and legal frameworks vary by jurisdiction and remain incomplete.

Ultimately, the value proposition is clear: faster time-to-market, lower costs, and new investor access. Institutions that have made early investments in digital asset custody, compliance integration, and token issuance are already seeing operational gains. What differentiates leaders is not the use case—but the readiness to operate across digital and traditional rails.

1. Investment-grade Bonds

The USD 140T global bond market is burdened by high issuance costs, slow settlement, and heavy reliance on intermediaries. Tokenization addresses these frictions head-on—cutting operating costs by 40–60%, enabling near-instant settlement, and reducing systemic risk through smart contract automation.

Banks such as ABN AMRO, HSBC, and European Investment Bank have issued tokenized bonds on public blockchains. An issuer with USD 1B in annual volume can achieve USD 2M-3M in savings. A deeper secondary market infrastructure and integration of blockchain-based issuance into conventional workflows will take this use case even further. Europe seems to be advanced in these use cases, but we expect higher volumes soon from the US, given its dominance in capital markets and its new regulatory stance.

2. Real Estate

With more than USD 300T in global asset value, real estate remains one of the most illiquid and opaque asset classes. Tokenization is taking off with institutional-grade assets—such as commercial real estate, infrastructure, and large-scale property funds—enabling fractional ownership and broader investor access over time.

Because legal frameworks vary, most real estate tokenization today uses SPVs or REIT-like wrappers to create compliant digital securities. In countries like Switzerland and the UAE, fund managers and platforms are already attracting global investors through tokenized property offerings. For a USD 5B real estate fund, tokenization can unlock up to USD 500M in new capital inflow by lowering access thresholds, expanding distribution and reducing annual admin and compliance costs by USD 100M-150M over five years through automation (although these gains are partially offset by legal structuring and regulatory complexity in early deployments). As secondary markets deepen, tokenized real estate becomes more attractive by reducing illiquidity discounts and improving exit pricing.

Use cases that rely on functional markets

Three other areas—**collateral and liquidity management**, **trade finance**, and **treasury operations**—represent the current wave of tokenization. The upside is significant, and unlocking it depends on more than technology. It requires the connective tissue: custody models, liquidity providers, data standards, and clear compliance guardrails.

3. Collateral & Liquidity Management

The USD 16T global repo and collateral markets are hindered by fragmented settlement and slow asset mobility. Tokenization enables on-chain collateral pledging, real-time transfers, and smart contract-based margin management.

A global bank managing USD 100B in repo could save USD 150M-300M annually by reducing idle collateral, accelerating trade cycles, and achieving T+0 settlement. If the industry is to scale tokenization, it needs interoperable token standards, common margin rules, and regulatory clarity on rehypothecation.

4. Trade Finance & Working Capital

Despite exceeding USD 10T in volume, global trade finance is mired in paperwork and manual reconciliation. Tokenization enables real-time invoice settlement, programmable payments, and access to liquidity for SMEs and large corporations alike.

A firm processing USD 50B in cross-border trade could unlock up to USD 2B-4B in working capital and reduce annual financing costs by USD 20M-50M, while cutting end-to-end transaction times (from document processing to payment settlement). Achieving this at scale requires standardized digital documentation, legally recognized smart contracts, and integration with logistics and banking infrastructure. Digital documentation remains a key bottleneck—without it, tokenized instruments cannot replace traditional trade flows. The path forward lies in embedding tokenized workflows into existing infrastructure, not replacing it outright.

5. Treasury & Cash Management

Most corporations hold significant idle cash in low-yield accounts. Tokenization allows treasurers to deploy cash into money market funds, perform instant FX via stablecoins, and automate intraday liquidity—all while maintaining control and auditability.

A multinational managing USD 1B in idle cash and USD 10B in annual cross-border payments could gain USD 15M–25M in additional yield, save USD 3M-12M in FX and payment processing costs, and unlock USD 35M-100M in liquidity and working capital savings by reducing excess liquidity buffers and automating internal transfers. These gains stem from lower capital lock-up, faster access to cash across entities, and reduced reliance on short-term borrowing. Achieving this requires wallet infrastructure, programmable stablecoin rails, and real-time internal treasury systems.

Challenges and integration risk

Transforming tokenization into a financial system standard requires solving a foundational challenge: The alignment of infrastructure, custody, and regulation across the ecosystem. Institutions that move early won't just participate in the next wave of finance but will help define its architecture.

1. Adoption needs infrastructure to scale

Pilot projects have shown promise, but most remain isolated. Adoption has outpaced infrastructure. The next phase of growth will depend on alignment: interoperable solutions and ledgers, as well as unified onboarding for investors.

As soon as a few large players commit to coordinated token issuance, distribution, and settlement frameworks, we'll see liquidity deepen and network effects take hold. Until then, tokenized assets will remain efficient in isolation—but underutilized at scale.

While market activity and institutional experimentation are increasing, large-scale adoption still depends on solving infrastructure fragmentation and enabling interoperable custody.

2. Institutions must align where it matters

Too many firms are trying to build their own settlement systems or token rails. However, the strategic value lies in what is built on top, not the plumbing beneath. The institutions that succeed will be those that collaborate on core infrastructure, and then compete where it counts: on product design, client reach, and service quality.

Another consideration is control. Delegating wallet infrastructure can limit flexibility and tie the firm to a third party's roadmap. Some institutions accept this for compliance or scale; others retain custody to preserve control over asset behavior and integration.

3. Regulatory progress is real, but still fragmented

Several jurisdictions (Switzerland, Singapore, the UAE, the EU, and the UK) have made meaningful progress in regulating tokenization. Others, like India, are advancing more cautiously, still refining the legal treatment of smart contracts, digital custody, and asset classification.

This isn't paralysis; it's a transitional period. Institutions that invest in regulatory engagement now may help shape rules that lower barriers later. Legal clarity will emerge fastest in markets where industry and policymakers work together.

4. Interoperability is the weak link

Issuance is no longer the hard part. The constraint is cross-platform settlement—specifically, enabling delivery-versus-payment (DvP), where asset and cash transfer simultaneously on-chain. Most platforms lack interoperability, and the cash leg often settles off-chain, limiting distribution and preventing tokenized markets from scaling.

Smart contracts also lack standardization. Token contracts are often custom-built and difficult to interpret across systems, creating friction in integration, compliance, and secondary trading. Industry groups have begun addressing this with open frameworks, but adoption is still early and fragmented.

5. Trust will follow functionality

Skepticism lingers, and understandably so. Early token projects sacrificed some trust when they were overhyped, underregulated, or poorly executed. Tokenization has since moved into institutional finance, where transparency, auditability, security, and compliance are core requirements.

Trust in tokenization won't be fully developed through education campaigns. It will be built through performance: when clients experience tokenized assets that settle faster, cost less, and integrate cleanly into their existing portfolios.

6. Costs are falling—and increasingly strategic

Launching a focused tokenization use case can cost USD 2M or less. Full integration—across custody, trading, compliance, and multiple asset types—can require USD 15M–20M for a mid-size bank and up to USD 100M for a Tier 1 financial institution. These are not experimental budgets. They are strategic investments in infrastructure that will support new business models and future revenue streams.

Over time, the economics are likely to reverse: tokenization platforms will cost less to run than legacy systems, especially as interoperability and scale improve.

7. The system needs to be built for what comes next

Tokenization is not the endpoint—it's the base layer for what's coming. Future markets will be built around on-chain collateral, programmable liquidity, and AI-managed assets. Institutions that build flexible systems now will be able to adapt quickly as these functions come online. Those that delay may find themselves locked into yesterday's rails while competitors shape tomorrow's.

When tokenization works and when it doesn´t

Skeptics point out that tokens have not been reliable financial vehicles in the past. Regulators were dismissive over the last year, especially in the United States where most of the liquidity globally is stored. Moreover, as with any disruptive innovation, some firms base their business model on being intermediaries. They will naturally see tokenization as a threat.

As in all major technological transformations, the skeptics have a valuable perspective to offer. While the tokenized asset technology has been proven to address problems inherent in current financial systems, it does not apply to all use cases. It should be used for assets that suffer from liquidity constraints, inefficiencies in trading, lengthy go-to-market timelines, and high transaction costs. However, tokenization may not be suitable for markets where traditional structures already provide sufficient efficiency.

Some of these barriers will fall during the next few years. In the meantime, these five questions can help firms decide whether a particular use case represents a good opportunity:

1. **Does this tokenized asset opportunity provide significant (ideally global) access to new asset classes?**

   For example, tokenization can open up investment in container ships, which were traditionally inaccessible. A tokenized share of the ship could also be used to incentivize the crew to maintain it while in operation.

2. **Does tokenization massively reduce costs and increase efficiency?**

   Structured products, such as custom-tailored combinations of securities and derivatives, often benefit from tokenization because they streamline the process of managing multiple intermediaries, cut the costs of processing and reconciliation, and allow for greater transparency.

3. **Does tokenization allow fractional and easy transferable ownership?**

   Real estate, commodities and rare collectibles dealers now have a much larger potential investment market.

4. **Does tokenization provide an advantage for settlement and logistics?**

   Tokenized assets can settle automatically - for instance, in insurance premiums or bond sales. In supply chains, tokenization can track asset provenance, location, and custody - streamlining ownership transfers without moving physical assets.

5. **Do tokenization and on-chain assets bring more trust to an asset class?**

   In the diamond industry, long challenged by opaque pricing, inconsistent grading and unverifiable provenance, blockchain enables authentication, standardized certification, and a traceable record from mine to market, making diamonds more investable and attractive as an alternative asset class.

The road ahead: a strategic playbook for competing in tokenized finance

The case for tokenization is now well understood. The benefits—faster issuance, lower operating costs, broader investor access, and real-time asset servicing—are already visible in early deployments. As Martijn Siebrand, Digital Assets Program Manager at ABN AMRO Bank points out, "The conditions for broader adoption are aligning. Technology is ready, regulation is evolving, and foundational use cases are in the market."

The next phase is about execution. Institutions must now define their position within the emerging market infrastructure.

Track 1: System builders—shaping the infrastructure layer

System builders—global banks, custodians, and financial market infrastructure (FMI) firms—have the opportunity to shape the foundations of tokenized finance by addressing the strategic questions that will define market access, pricing, and client experience:

- What role will public blockchains play?
- Who aggregates liquidity across tokenized instruments?
- Who provides custody infrastructure that enables secure asset movement across platforms and jurisdictions?
- Who controls wallet infrastructure?
- Who owns distribution and client access?
- Who operationalizes compliance and identity across tokenized networks?

Track 2: Scalers and integrators—driving adoption through access and agility

Mid-sized and regional institutions won't define the new architecture, but they can move early to secure relevance within it. Their priorities at this stage should be as follows:

- **They should build on what they already do well:** tokenized funds for private banking clients, tokenized real estate products for affluent investors, or trade-related tokenization for exporters with large receivables. The best entry point lies at the intersection of commercial fit, operational readiness, and regulatory feasibility.
- **In deciding which layers of the value chain to control,** they should consider future priorities. For example, they will need access to blockchain (for tokenization), custody, and distribution. Some firms may be tempted to outsource custody, with a supplier providing the wallets that store tokens. This may be a limiting move, especially if reliable custodians become scarce.
- **They should move quickly toward modular integration.** It's best to find partners for issuance and infrastructure while retaining control over client relationships, token custody, or data layers where trust, economics, and regulatory responsibility converge.

Examples of institutions already acting include Standard Chartered (expansion into tokenized finance with activity across issuance and custody), DZ Bank (digital custody for Germany's cooperative banks), and BBVA Switzerland (tokenized investment access for private banking clients).

Fast, standards-aligned integration will allow institutions to access tokenized liquidity, serve new segments, and stay commercially relevant without overextending on infrastructure build-out. As Ripple Senior Vice President Markus Infanger puts it: "The market is transitioning from tokenized assets simply sitting on-chain to integrating into real economic activity - collateral, trade finance, and beyond."

Where the tracks converge: collective action

Tokenization will not scale through isolated efforts nor through institutions building in parallel to protect legacy economics. What's needed now is alignment—across custody, issuance, compliance, and distribution—and a collective global effort led by Tier 1 players to establish shared infrastructure the market can build on. One that's punctuated by top-layer products built on blockchain, smart assets powered by new and improved rails, and 24/7 operations and reach. Institutions that move now and coordinate early will shape the pathways that others follow and position themselves to capture this new wave of value creation.

Appendix

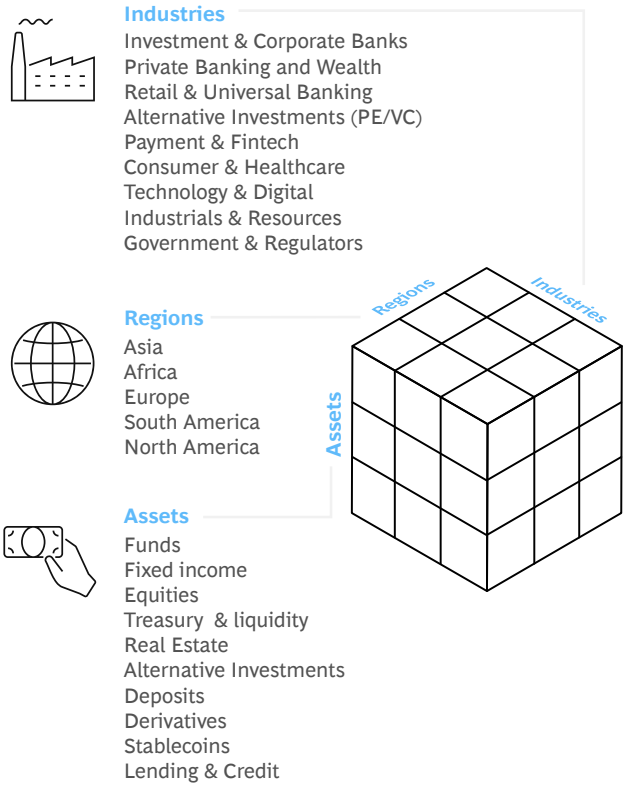
Calculation remarks: The exhibit below illustrates the analytical framework employed to estimate the current volume and future growth trajectory of tokenized assets up to the year 2033. Using a three-dimensional "tokenization cube," the analysis first assesses today's distribution of tokenized assets across three core dimensions: asset classes, industries, and geographic regions.

The first dimension, Assets, includes various asset classes such as investment funds, fixed income securities, equities, real estate, and other relevant financial instruments. The second dimension, Industries, categorizes key stakeholders into three groups: financial institutions (e.g., banks, asset managers, and financial service providers), corporates (including consumer-focused businesses, technology, and industrial companies), and regulatory authorities. The third dimension, Regions, provides a comprehensive global view, spanning North America, South America, Europe, Africa, and Asia.

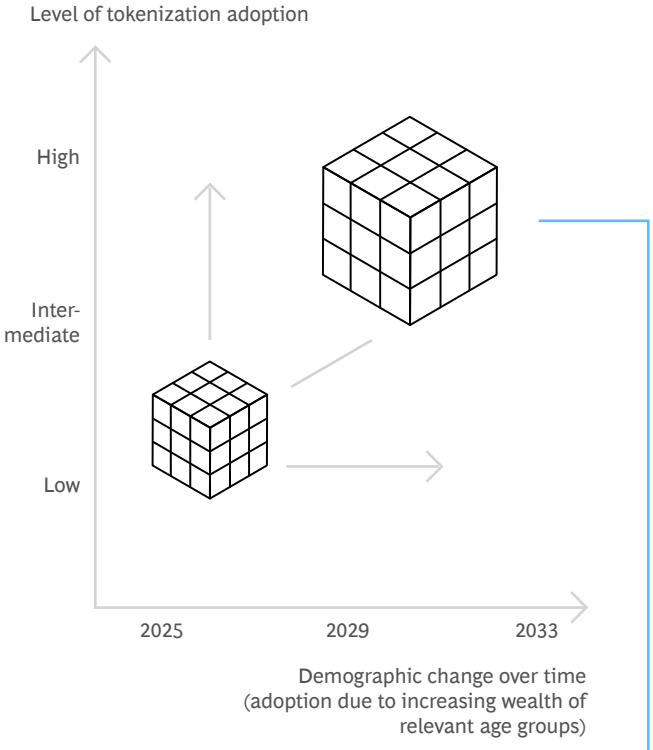
EXHIBIT 5

Methodology: Two Estimations of Growth Until 2033

Tokenization cube...



...which changes over time...



...and is distributed among various target groups

B2B, e.g., for lending, capital markets, internal settlements

B2C, e.g., for access to real estate, private equity, art

B2B2C, e.g., for enabling retail clients to invest in tokenized assets via banks, fintechs etc.

To project the growth of the tokenization market to 2033, the analysis considers two primary growth drivers. Initially, the tokenization cube expands significantly due to technological advancements, improved market infrastructure, and broader adoption across industries and regions. Additionally, the cube experiences further enlargement driven by demographic shifts and wealth effects, specifically because younger generations are accumulating greater wealth and exhibit a higher propensity to invest in tokenized assets.

Moreover, tokenization adoption patterns are differentiated according to business models. Business-to-business (B2B) applications are anticipated to dominate sectors like lending, capital markets, and internal financial operations. Simultaneously, business-to-consumer (B2C) models are expected to experience strong growth within consumer-driven markets such as real estate, private equity, and art.

Furthermore, the hybrid business-to-business-to-consumer (B2B2C) model is projected to increasingly enable retail investors' access to tokenized assets through intermediary platforms provided by banks and fintech companies.

In summary, the tokenization cube methodology effectively captures both the current state and the multifaceted growth dynamics of the tokenization market, emphasizing the importance of technological and demographic factors in shaping future adoption patterns across different asset classes, industry segments, and geographic regions.

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