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The journey toward
dynamic settlement

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Our observations of T+1

- T+1 may feel like it is coming too soon for widespread adoption of true digital technological improvements to existing operational processes.
- Market participants have not perceived T+1 or accelerated settlement as a growth opportunity; it has instead been regarded as an operational and regulatory burden.
- While firms will be able to “cross the finish line” by expanding their operational presence, and relying on existing operational processes, T+1 may have an impact on contemporary operations and technology functions.
- Dynamic settlement is the next logical step and may be challenging without broad, unified operational and technological change across capital markets.
- There are innovative solutions available today for organizations to leverage and future proof against further settlement acceleration.
- Firms should consider shifting their perceptions of accelerated settlement—those firms that are able to offer true dynamic settlement may find themselves at a competitive advantage.

Executive summary

Recent events have brought disruptive change to financial services.

Over the past 18 months, the US financial markets have experienced unprecedented regulatory pressure to modernize and safeguard operations. This is expected to continue as the Securities and Exchange Commission (SEC) Market Structure¹ and Treasuries Central Clearing² are just a subset of the introduced rules with which firms must now contend.

Moving to a T+1 settlement cycle is perhaps the most significant regulatory change in recent years. Historically, the industry has seen success in transitions from T+5 to T+3, and from T+3 to T+2; however, T+1 demands changes that pose challenges to both human capital and the technological landscape.

Accelerating settlement cycles provides firms the opportunity to modernize infrastructure and prepare for the move to real-time or T+0 settlements. However, due to cost and timing, it appears that some of the market participants chose not to modernize existing legacy infrastructure and instead added more human capital to meet requirements.

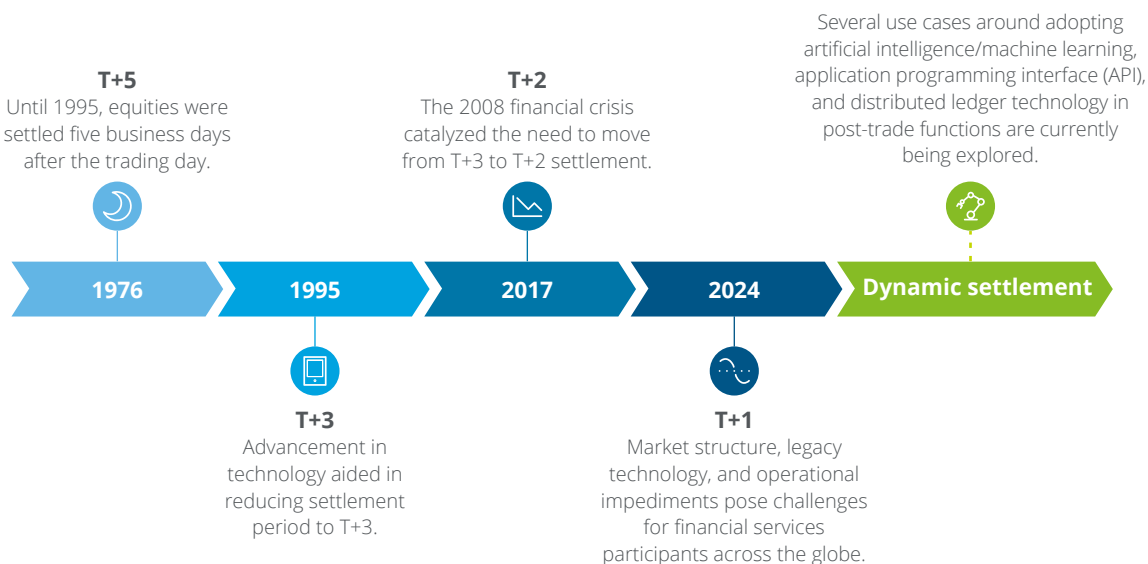
Ultimately, the parameters of T+1 and the macroeconomic realities did not provide the time necessary for firms to embrace the new, powerful technologies enabling T+0 and real-time settlement demands.

From our perspective, the US securities market has strong digitization potential as it looks to further remove systemic and operational risk. To accelerate settlement beyond T+1 without embracing these digital opportunities may likely be a prohibitively expensive and strategic mistake.

As regulators move to further de-risk industry utilities, agreements on standardized communication layers and data exchange formats must replace today's batch sequencing. There are solutions today that will allow for US firms to move beyond these existing limitations and enable true dynamic settlement.

With over a decade of experience in digital ledger and tokenization capabilities, Deloitte understands the potential of these technologies. In collaboration with our alliances, Digital Asset and AccessFintech, this paper serves to provide a distinctive lens into the next generation of operations within the US financial services industry in which human capital concerns and settlement timelines are a thing of the past.

Figure 1: Historical transformation from T+5 to T+1



T+1 is a missed opportunity

Some firms may have missed the opportunity for broad operational and technological change as participants have viewed this transition through the lens of cost—choosing to focus on how they can transition at the lowest cost, with the lowest acceptable amount of risk.

- The economic climate, an expected increase in regulatory complexity, and a reduced expected time frame were significant impediments to firms' transformational efforts across the T+1 settlement transition.
- In lieu of taking advantage of the opportunity to modernize infrastructure and deploy modern solutions to operational bottlenecks, many firms largely chose to reinforce existing processes, minimizing short-term cost to meet the operational demands of the transition.
- Increasing operational presence, deploying human capital, and continued reliance on manual processes will continue to hinder firms' ability to take full advantage of the reduction in risk across the US capital markets system.
- The continued reliance on existing operational processes will likely replace the expected reduction in settlement risk with an increase in operational risk.
- Some market participants continue to use disparate data sources and formats to transfer mission-critical data across historically embedded vendor platforms throughout the trade life cycle.
- T+1 settlement could have been an opportunity for a profound transformation, but some firms have so far preferred to focus more on tactically reaching the target state with existing vendors and technologies, rather than taking a longer-term, strategic view of their operational technology investments.
- Firms that view T+1 as a transformative opportunity to drive settlement efficiency and business growth could be the ones who are best positioned to take advantage of the benefits of settlement acceleration to T+1 and into the future.

Reinforcing today's processes is not a solution for addressing tomorrow's challenges or capitalizing on tomorrow's opportunities

Figure 2: T+1 challenges



Technology as a driver of growth and strategic differentiation

Firms increasingly view technological investments as a long-term strategic differentiator. Yet T+1 settlement acceleration was not considered this way—the consequences could be significant.

Settlement acceleration has largely been addressed by reinforcing existing processes and deploying additional resources. It is expected that the move will decrease risk in US capital markets overall, increasing liquidity and driving growth. So why did firms not consider this transition a growth opportunity, and invest in technology to improve settlement efficiency?

Technology may be a key strategic differentiator, not a cost. Investments today could help drive growth tomorrow by enhancing existing capabilities, driving efficiencies, and preparing for future-state market, operational, and technological requirements

Figure 3: Technology as a driver of growth and strategic differentiation

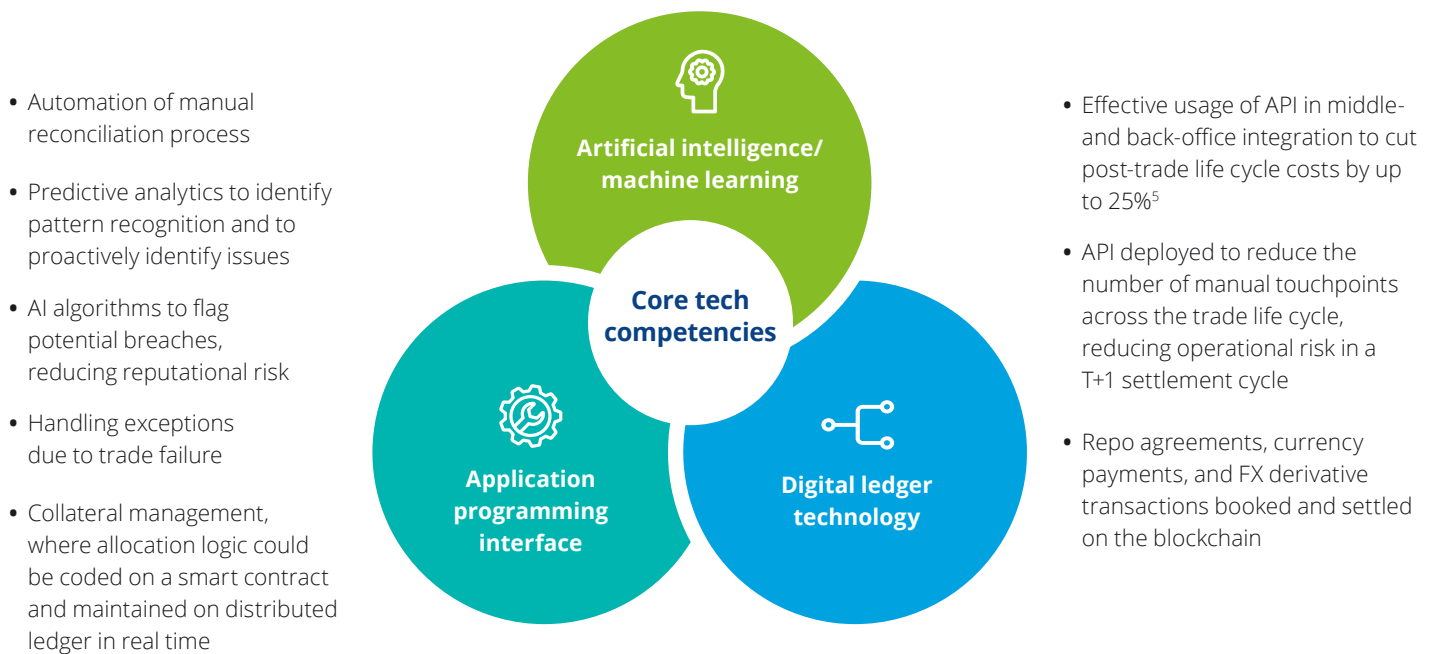


The future of settlement acceleration and regulated operations will be dependent upon technological capabilities

The strategic value of technology in the future of settlement acceleration

Firms have started to prototype solutions to existing processes but should prepare to go further for tomorrow's challenges

Figure 4: Considerations for addressing future growth opportunities



Many firms appear to be considering technology as an investment for tomorrow's challenges, and not an expense for management today

The journey toward dynamic settlement

Allocation and affirmation: Trade clearance is a process traditionally hampered by manual touchpoints and legacy infrastructure. One clearing firm has developed a workflow automation tool for central matching and auto-affirmation—removing the need for additional human capital and increasing operational efficiency.

Corporate actions: A secondary market provider developed distributed ledger technology (DLT)-based electronic voting (e-voting) in which shared register data is held on an immutable, anonymous, and encrypted blockchain.⁶ These processes again remove the requirement for manual touchpoints and reconciliations in election and voting processes, reducing risk of being held liable and lengthy operational disputes.

Securities lending: In a recent bank poll, 80% of respondents expect a shortened settlement cycle to put pressure on securities lending,⁷ while 69% feel the need to automate and standardize client communications. A fintech firm created ISIN-level securities trackers (digital collateral records) from loaned securities. Built on a private-permissioned DLT network, the platform avoids the traditional custody chain and settlement cycle, enabling instant and simultaneous transfers via a delivery versus delivery (DvD) mechanism.⁸



A view from our alliance vendor- AccessFintech

AccessFintech's collaborative approach to accelerated settlement

AccessFintech is a data and insights network that focuses on providing real-time efficiencies to financial markets through its platform, data, and network collaboration. AccessFintech is collaborating with Deloitte to help clients transform their operations across the financial services industry:

- **Optimal data transparency:** Normalization, visualization, and ease of access to many points of data via the Synergy network
- **Business intelligence:** Solutions designed to generate insights that lead to balance sheet benefits and reduced transaction costs, leveraging analytics dashboards and predictive analytics
- **Workflow optimization:** Increased operational and technology capacity culminating in greater workflow optimization, leveraging features such as "Dynamic Static" probability intelligence to reflect the most appropriate matching for future transactions
- **Real-time data visibility:** Local market information availability on T+0 to participants
- **Fails management:** A solution that facilitates data transparency and collaboration through the transaction life cycle, offering transaction data pairing to support enhanced pre-matching and reduce fail rates

Designed for regulated markets

Data insights: Automated investigation of fails, supported by data insight to resolve root cause and avoid repeat exceptions, thus reducing manual intervention and improving operational efficiency

Seamless transition: Supporting operational users' move to a T+0 (fails prevention) workflow from a T+2 (fails management) workflow

Risk mitigation: Interconnected data solution mitigates the risk of increased fails after T+1 transition

Collaboration: Internal/external collaboration and action assignment reduces ambiguity in trade reconciliation, assigning clear actionable steps to counterparties for break resolution

Exception management: Automated, workflow-based error resolution, with the ability to aggregate, normalize, and pair transaction reporting data within and between institutions, investigate discrepancies, collaborate and resolve errors across counterparties, and manage reporting and error reconciliation for regulatory submissions

In-market solution – Synergy

Firms looking to transform their settlement ecosystem need several levers and enablers. In the case of T+1, modern solutions around fails prevention and management, compression (repo pair offs, clearing and netting, etc.), and SSI services are critical success factors.

Functions: Firms must invest in functions such as pre-matching and settlements, T+1, cost and software data reporting and penalty management, SSI, loan data management, clearing securities, cash payment matching, disputes, repo confirmation and pair offs, inventory stock record

Industries: Agent/CSD, executing broker, buy-side, prime broker, custodian

Asset classes: Fixed income and cash equity securities, derivatives, loans

Alliances: AccessFintech has alliances with golden source systems and FMI organizations that include clearing houses, depositories, and messaging platforms; it collaborates with buy-side platforms that provide a range of services, and work closely with management advisory and transformation advisers including Deloitte

To achieve successful transition beyond T+1 to dynamic settlement, firms should consider investing in solutions that offer a data-universe with real-time enhanced transaction data from custodians, prime-brokers, etc., which provides the ability to reduce fails and manual intervention, and enables a flexible infrastructure enabling use of data in preferred user interfaces.

Dynamic settlement should be the aim

The next step in the post-trade modernization journey should not automatically be T+0—it's time for markets to take steps toward dynamic settlement for their customers

Financial markets are witnessing an exponential increase in investor participation. With the rise of online trading platforms, zero-fee trading, and self-directed retirement accounts, markets are becoming more open and democratized. As markets become more accessible, product innovation and customer satisfaction will become strategic competitive advantages. Offering a personalized service differentiates market participants in a saturated and increasingly commoditized market.

The focus of this competitive advantage may reside today in the front office, but it stretches all the way to core operations, including the post-trade world. As settlement cycles accelerate and firms increase their staffing and technology to meet these demands, customizable, dynamic settlement should be seen as the next step.

Dynamic settlement can enable investors to choose settlement cycles for their transactions. These customizable trade life cycles are the logical conclusion of settlement acceleration—the technology enhancement required to reach T+0 settlement in the largest capital markets in the world would be foundational and fundamental.

Dynamic settlement challenges cannot be met simply with additional resources to reinforce existing processes—a complete operational and technological redesign will be necessary to transition to real-time settlement.

Dynamic settlement challenges

- Instantaneous settlement would require trades to be prefunded on an unsecured basis, which could limit market liquidity
- Without netting, the number of transactions to be settled would soar and the number of failed transactions could rise significantly
- Dynamic settlement does not allow for predictive financing, so clients would likely not know their financing needs for a given day until trading has stopped
- A move to dynamic settlement would likely require the development of a real-time reconciliation process and real-time stock records to help comply with regulations
- Implementing real-time gross settlement would require that all transactions be paid in full by investors
- Smaller and medium-size firms would find the cost of technological upgrades prohibitive and restrict their ability to compete with larger brokers and institutions
- The market would need to decide upon a series of standards for data interoperability to reduce operational friction across the trade life cycle

Barriers to adoption

Aging legacy infrastructure

Operational constraints and complexities to process in real time

• Trade financing

Clients and brokers will likely be increasingly reliant upon real-time cash position availability to finance trading activity

• Cross-border inefficiencies

Holding availability of the same instrument across multiple CSDs increases inefficiencies

• Industry infrastructure

Today's industry clearing and settlement infrastructure will require fundamental redesign

• Settlement inefficiencies

Settlement today requires frequent manual intervention

• Data interoperability

Conflicting and nonfungible data sources across market participants limit data throughput capabilities

• Differing operating hours

Reduced overlap in operating hours and cutoff times reduces the advantage of cross-border transactions

• Competitive advantage

Differences in transition pace between smaller and medium-size firms compared to larger firms could reduce competition

A view from our alliance vendor— Digital Asset

The road to T+1 and beyond

With smart contracts, distributed ledger, and privacy protocols fit for regulated capital markets, Digital Asset provides composable, extensible solutions that allow organizations to manage T+1 today—and enables dynamic settlement. Information and value flow freely across organizational boundaries, reducing operational complexity and risk while improving liquidity and efficiency.

Golden source data: Shared, accurate data enables real-time reconciliation and updates to ownership ledgers needed for faster settlement and efficient post-trade processing. Embedding data on the asset expedites settlement and reduces breaks, improving securities lending and other post-trade processes.

Multiparty workflows: Automated, asynchronous workflows accelerate cross-border transactions to accommodate shorter trading cycles and settlement across organizations, borders, and time zones.

Atomic, committed settlement: Simultaneous (atomic) settlement reduces counterparty and payment risk with true delivery versus payment (DvP). Firms can better predict financing requirements, and settlement can occur at any point during the day with finality, enabling dynamic settlement.

Asset locking: Achieve certainty of settlement, reduce risk, and minimize costly market moves by locking an asset to a transaction. Dynamic settlement is possible when assets are sure to be available.

Transparency and privacy: Permission-based entitlements provide greater visibility plus real-time access for supervisory authorities. Privacy is preserved, and the application owner retains sovereignty.

In-market solutions

Industry players are using Daml and Canton to transform capital markets infrastructure and accelerate settlement. Industry examples include:

- End-to-end tokenization platform that reduces settlement from T+5 to T+60 seconds with cross-chain atomic DvP settlement.
- Expanding access for global investors and asset managers to the equities markets in Asia with an integrated settlement solution for Northbound Stock Connect.
- Bringing transparency, efficiency, and velocity to the global syndicated loan market: More than 1,500 loan facilities and \$900 billion in global loan commitments across 40+ agent banks and 300+ institutional investors.

Designed for regulated markets

The public-permissioned Canton Network is designed to respect privacy and institutional sovereignty. It creates an interconnected network of sovereign blockchain networks suitable for regulated finance. Independent Canton blockchains use a decentralized global synchronizer to interoperate and execute transactions.

In an extensive 2023 pilot, 45 entities composed, executed, and settled atomically more than 350 transactions across 22 sovereign blockchains and applications—delivering interoperability and data synchronization without compromising privacy or control.

Digital asset products

Daml⁹

Build with the leading blockchain platform for regulatory-grade, distributed ledger and tokenization applications that securely synchronize data and workflows to enable real-time, risk-free settlement.

Canton Network¹⁰

Connect across blockchains and applications on the only privacy-enabled network to offer the control and interoperability needed to move assets atomically and power synchronized financial markets.

Today's processes are not equipped to address tomorrow's challenges

A shift in perception on settlement acceleration is required, from cost to investment and opportunity for growth

T+0 should not be viewed as the natural conclusion of settlement acceleration. If firms are looking for the means to create a strategic and competitive differentiation in a crowded marketplace, they should consider how they can leverage technology as the next steps to true dynamic settlement.

Accelerating the US settlement cycle from T+2 to T+1 will undoubtedly expose weaknesses in the underlying infrastructure of capital markets. To address the significant operational and behavioral challenges, market participants have elected to deploy people to reinforce existing processes in lieu of deploying innovative technology solutions. These stopgaps will not be sufficient for the future.

Firms that view this transition as an opportunity to increase their revenue, improve their operational efficiency, and capture market share by investing in their technology infrastructure may be better positioned for the longer term.

Capital markets practitioners around the world are aware of the transformative nature that digital ledger and tokenization technologies are expected to have on securities markets. The prevalence of these strategic technology solutions will likely increase in the longer term, expanding further across the trade life cycle as the technology becomes more readily available to more institutions, not only to structurally significant participants with the resources to be a "first mover" in a new technology strategy ecosystem.

Once the dust from the T+1 transition has settled, all firms should take the opportunity to debrief, and investigate how investing in these technologies and cutting-edge solutions would enable their organization's operational workflows to support the journey to dynamic settlement and a true competitive advantage.

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Deloitte's Banking & Capital Markets practice is a full-service practice, with breadth, depth, and scale to assist our clients' capabilities in front-, middle- and back-office capital markets businesses. We advise and collaborate with our clients to help them navigate complex and important events across their corporate life cycle. Our team has played an active role on critical industry initiatives, providing services designed to help organizations reduce industrywide risk, improve transparency, lead through innovation, and navigate global stress.

About Deloitte's Blockchain and Digital Asset practice

At Deloitte, our people work globally with clients, regulators, and policymakers to understand how blockchain and digital assets are changing the face of business and government today. New ecosystems are developing blockchain-based infrastructure and solutions to create innovative business models and disrupt traditional ones. This is occurring in every industry and in most jurisdictions globally. Our deep business acumen and multidisciplinary capabilities help organizations across industries achieve their blockchain and digital asset aspirations. Reach out to our leaders to discuss harnessing the momentum of blockchain and digital assets, prioritizing initiatives, and managing the opportunities and challenges associated with blockchain adoption efforts.

Endnotes

1. US Securities and Exchange Commission (SEC), "SEC proposals: Market structure," last modified April 3, 2023.
2. SEC, "[SEC adopts rules to improve risk management in clearance and settlement and facilitate additional central clearing for the U.S. Treasury market](#)," press release, December 13, 2023.
3. A-Team Group, "[The T+1 revolution: Technology challenges and opportunities in the US settlement cycle](#)," A-Team Insight blog, May 3, 2023.
4. Securities Industry and Financial Markets Association (SIFMA), Investment Company Institute (ICI), Depository Trust & Clearing Corporation (DTCC), and Deloitte, "[Accelerating the U.S. securities settlement cycle to T+1](#)," December 1, 2021.
5. Muniraj Muniappan, "[How API integration helps drive efficient post-trade settlements](#)," Ionix blog, August 8, 2023.
6. Nasdaq, "[Nasdaq to deliver blockchain e-voting solution to Strate](#)," press release, November 22, 2017.
7. Citigroup, "[Citi survey shows challenges ahead from accelerated settlements](#)," press release, August 22, 2023.
8. BNY Mellon, "[BNY Mellon and Goldman Sachs settle first HQLAx agency securities lending transactions](#)," press release, July 20, 2022.
9. Daml, "[Accelerate tokenization with Daml Finance](#)," accessed May 2024.
10. Canton Network [homepage](#), accessed May 2024.

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