

White paper

The new standard of compliance: Real-time, explainable, preventative

Unlock shift left to reduce risk, strengthen regulatory resilience and turn compliance into a strategic advantage

Executive summary

Capital markets firms are operating under a fundamental shift in regulatory philosophy. Regulators globally are moving from retrospective oversight toward proactive supervision, shifting controls to the start of the trade lifecycle before breaches occur.

Implementing a "shift left" control architecture requires that firms establish a rigorous methodology for translating regulatory interpretations into operationalized controls. Institutions should leverage a consensus-driven model for these interpretations, ensuring every automated decision remains fully traceable and explainable back to its originating regulatory source.

Drawing on market data, regulatory developments across the U.S., EU/U.K. and APAC, practitioner perspectives and insights from FIS® Capital Markets Compliance Suite (including the integration of the acquired Droit's computational law technology), the paper outlines the key drivers of the shift left, the compliance control framework it requires and the measurable outcomes firms can achieve.

Key themes include:

- Why regulators across global jurisdictions are demanding real-time, explainable compliance decisions, and why the standard is shifting from "have a program" to "show how you detect, investigate and retain evidence"
- How fragmented legacy systems, hard-coded rules and siloed architectures expose firms to rising operational risk and regulatory fines
- The "valid but wrong" data problem: why technically correctly formatted but factually incorrect regulatory submissions create hidden exposure
- Why compressed settlement cycles and rising penalties for trade fails and misreporting make a data-first, upstream approach a business imperative
- What an integrated pre- and post-trade compliance framework looks like in practice, including the continuing role of surveillance for behavioral patterns that can't be caught within a single transaction
- How humans, automation and AI each play a distinct role: humans codify decisions, automation applies them at scale, and AI augments legibility and signal detection under governance



Introduction: The compliance imperative is changing

"Shift left" in capital markets compliance means moving controls earlier in the trade and client lifecycle, from post-trade remediation to pre-trade prevention, and further upstream to client onboarding, new product approvals and legal entity booking model design.

Global regulators, including the SEC, FCA and European supervisory authorities, are shifting from retrospective oversight to proactive supervision, expecting firms to demonstrate that controls are operationally real, not merely documented. Firms must monitor multi-asset class trading behavior across venues and jurisdictions – ensuring every trade complies with evolving regulatory rules, internal policies and risk limits – at a speed that makes human-in-the-loop transaction review increasingly impractical.

The structural problem firms face today is expertise fragmented across the trade lifecycle, point solutions siloed by asset class or regulation, and duplicative update processes that multiply cost and operational risk every time rules change.

Shift left doesn't mean eliminating detective controls or surveillance. What can be caught preventatively should be caught preventatively. What requires pattern detection across transactions must be supported by calibrated, automated surveillance, not manual sampling.



A global move toward proactive supervision

Regulatory scrutiny is extending beyond traditional broker-dealer boundaries to include buy-side firms. The standard of proof has shifted: regulators now expect firms to demonstrate that alerts are appropriately calibrated, investigations are documented, red flags are escalated and controls are operationally effective, not just designed.

Key regulations driving this shift include CFTC, OSC, MAS, ASIC and EMIR Reporting. Firms must assess and adapt to evolving rules in near real time – a pace that makes manual rule management unsustainable. Compliance leaders face direct liability when controls lack a documented, traceable decision lineage.

Regional regulatory pressures

NORAM

- SEC enforcement priorities
- FINRA's extension of Trade Reporting Facility hours to 4:00 a.m. ET (effective March 2026)
- Basel III Endgame capital implications

EMEA

- FRTB implementation timelines
- MiFID II reporting obligations
- The EU's Capital Markets Union simplification agenda
- Coordination of T+1 transition across EU, U.K. and Switzerland targeting October 2027

APAC

- Divergent Basel III implementation timelines across Australia, Singapore and Hong Kong
- India's phased T+0 rollout for the top 500 stocks
- The growing complexity of cross-border compliance in fragmented markets

The cost of non-compliance

The key drivers of regulatory exposure include fragmented systems, manual workflows, hard-coded rules that go undetected when regulations change, and the "valid but wrong" data trap, where legacy systems accept technically correctly formatted data that's factually incorrect (for example, timestamp errors caused by biannual clock changes that pass format validation but report the wrong time).

Without a centralized decisioning layer, firms must choreograph updates across dozens of applications and workflows, often requiring external consultants and significant management bandwidth, while still carrying the risk that a system somewhere wasn't updated. By the time post-reporting audits identify a problem, often years after a regulation's implementation, the regulator already has the incorrect data. Remediation by then is reactive, expensive and reputationally damaging.

Why legacy compliance models are failing

Fragmentation as a structural weakness

The typical compliance architecture comprises siloed systems for surveillance, reporting, pre-trade controls and employee oversight operating independently, often by asset class, region or trading application. Fragmentation creates inconsistency: different data sources, conflicting decision logic and gaps in cross-jurisdictional coverage. When rules change, updates must be choreographed across multiple systems, creating risk of missed or inconsistent implementation.

Firms that embedded regulatory logic directly into individual trading applications face a specific vulnerability: as developers move on and regulations change, hard-coded rules can go undetected for years, millions of trades executed under an outdated version of a regulation. Mid-sized banks now account for half of all supervisory findings, compared to 25% in 2016 (Oliver Wyman, 2025), reflecting the disproportionate burden fragmentation places on institutions without large compliance teams.



Manual processes and the cost of scale

Traditional trade and transaction reporting processes require manually loading files and waiting on static spreadsheets or PDFs, which makes this appoach untenable at scale. Firms must process millions of compliance decisions daily across multiple asset classes and jurisdictions. The volume and speed of electronic trading has eliminated the time window for human review within the transaction flow.

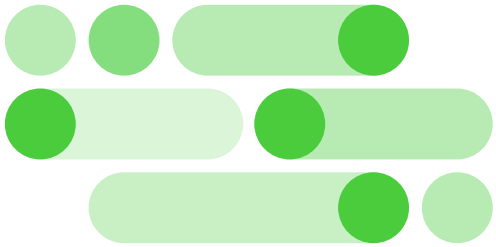
Banks have whole teams dealing with the symptoms of incorrect upstream data: control breaches, trade breaks and reporting errors. A data-first approach applied at the point of client onboarding or product setup would prevent many of these issues from arising. Personal liability for business leaders increases when decisions lack a documented, traceable audit trail, making it impossible to demonstrate defensible, operationally effective controls to regulators.

The shift left framework: What preventative compliance looks like

Embedding controls at the point of decision

Preventative compliance integrates automated controls directly into trading workflows so that breaches are identified and addressed before execution, and further upstream, at the point of client onboarding, new product approvals and legal entity booking model design.

The data-first principle is central: capturing the right data upfront at the start of the lifecycle prevents a cascade of downstream operational issues, breaks, reconciliation work and reporting errors, which otherwise require expensive technology and headcount to resolve. Regulatory logic is applied to every trade decision in real time, with explainable outcomes traceable back to the source regulatory text. Unlike statistical ex-post sampling, preventative controls are applied upfront on every trade.



Summary: Compliance is moving upstream. By unlocking embedded real-time, explainable controls earlier in the trade and client lifecycle, firms can reduce remediation, improve auditability and strengthen regulatory resilience.

By leveraging the FIS-patented Adept platform, which sits at the forefront of computational law, institutions can embed regulatory logic and internal policy mandates seamlessly across the entire enterprise. This capability spans the complete client and trade lifecycle, resolving the structural weakness of fragmented, siloed architectures divided by geography, asset class, or specific trading systems.

Computational law technology converts regulatory text into executable decision logic, structured data representing the law, enabling millions of precise, real-time decisions daily. Legal and compliance experts review, verify and codify the consensus interpretation of regulatory obligations before any logic is deployed in production. Once that judgment is codified, automation applies it consistently at the point of the trade.

Every decision carries a unique identifier linking back through a visual decision tree to the exact provision of the underlying regulatory text or internal policy, enabling firms to answer a regulator's query without complex, expensive trade reconstruction.



Now is the time to shift left: assess where compliance controls can move upstream, automate decisioning at scale and build a stronger, more defensible operating model.

Learn more

Money at rest. Money in motion. Money at work.™

Our technology powers the global economy across the money lifecycle.

Money at rest

Unlock seamless integration and human-centric digital experiences while ensuring efficiency, stability, and compliance as your business grows.

Money in motion

Unlock liquidity and flow of funds by synchronizing transactions, payment systems, and financial networks without compromising speed or security.

Money at work

Unlock a cohesive financial ecosystem and insights for strategic decisions to expand operations while optimizing performance.

About FIS

FIS is a financial technology company providing solutions to financial institutions, businesses and developers. We unlock financial technology that underpins the world's financial system. Our people are dedicated to advancing the way the world pays, banks and invests, by helping our clients confidently run, grow and protect their businesses. Our expertise comes from decades of experience helping financial institutions and businesses adapt to meet the needs of their customers by harnessing the power that comes when reliability meets innovation in financial technology. Headquartered in Jacksonville, Florida, FIS is a member of the Fortune 500® and the Standard & Poor's 500® Index. To learn more, visit FISGLOBAL.COM. Follow FIS on LinkedIn, Facebook and X (@FISglobal).

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