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Artificial Intelligence and Algorithmic Governance: Strengthening Markets

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INTRODUCTION

Every regulatory era has an animating anxiety. For the 1990s it was disclosure; for the 2000s, systemic leverage; for the 2010s, high-frequency speed. For the 2020s, and now well into the 2030s' near horizon, it is a subtler and more pervasive concern that the decisions shaping capital markets are increasingly made not by identifiable humans exercising judgment, but by adaptive systems that learn, drift, and sometimes surprise even their own designers. Artificial intelligence has stopped being a back-office curiosity in trading rooms and compliance departments and has become, in the truest sense, market infrastructure. The question this raises for regulators, and for the Company Secretaries and governance professionals who must operationalise their answers, is no longer whether AI belongs in capital markets, that debate is over but whether the architecture of oversight can keep pace with systems that were built, by design, to keep changing.

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THE GOVERNANCE QUESTION BEHIND EVERY ALGORITHM

The International Organization of Securities Commissions, in its March 2025 consultation report on artificial intelligence in capital markets, offered the most comprehensive stock-take yet of how AI is actually being used by regulated entities rather than how vendors say it

is being used. Drawing on surveys of thirty International Organization of Securities Commissions (IOSCO) members and self-regulatory organisations and a further 184 responses from its Affiliate Members Consultative Committee, the report found that communications with clients, algorithmic trading, and robo-advisory functions dominate current deployment, with anti-money-laundering surveillance and internal productivity tools close behind. The more revealing finding, however, was about restraint rather than adoption: most firms are still keeping generative AI confined to internal, lower-risk uses for drafting, summarising, coding precisely because the customer-facing and trading-facing applications are the ones regulators are watching most closely.

The International Monetary Fund's October 2024 Global Financial Stability Report reached a similarly cautious conclusion from a different angle. Its capital markets chapter found that most current AI use is an extension of established machine-learning practice rather than a revolutionary break, even as algorithmic trading already accounts for roughly seventy percent of US equities turnover. The Fund's real warning was structural rather than immediate: reliance on a small number of third-party AI and cloud providers, the tendency of AI models trained on similar data to herd during stress, and the migration of AI-driven activity toward less-regulated non-bank intermediaries. None of these risks are unique to AI, the report noted but AI transmits them faster and through channels that older surveillance systems were not built to see.

SEBI'S FIVE-PILLAR ARCHITECTURE AND THE COMPLIANCE MACHINERY BEHIND IT

India's regulatory response has been built in layers rather than in one sweeping code, and understanding the sequence matters as much as understanding the substance. The foundation dates to January 2019, when SEBI required stock brokers, depository participants, market infrastructure institutions, and mutual funds to report their AI and machine-learning deployments on a quarterly basis including a nil declaration where no such system is used. That reporting obligation, unglamorous as it sounds, remains the backbone of SEBI's visibility into the AI landscape six years on; the National Stock Exchange's Circular 24/2026, issued in April 2026, shows the same architecture still being actively enforced, with a firm compliance deadline and penal consequences under a dedicated 2025 exchange circular for lapses.

Onto that base, SEBI layered Regulation 16C through the SEBI (Intermediaries) Amendment Regulations of February 2025, and then, on 20 June 2025, released its consultation paper titled Guidelines for Responsible Usage of AI/ML in Indian Securities Markets the document that will likely anchor Indian AI governance in securities markets for years to come. Built by a dedicated SEBI working group, the paper rests on five pillars that any Company Secretary advising a regulated entity should now know by heart: model governance, with Strict, non-delegable senior management accountability across the AI lifecycle, making the regulated entity solely liable regardless of whether the tool is in-house or third-party, and mandatory oversight of third-party vendor arrangements; investor protection through plain-language disclosure wherever AI directly touches a client, covering the model's purpose, risks, and limitations; a rigorous testing framework requiring segregated pre-deployment testing and, notably, shadow testing against live market traffic before full release; fairness and bias controls, including periodic bias audits and staff training for the data scientists building these models; and data privacy and cybersecurity obligations layered on top of existing SEBI frameworks. A tiered, proportionate approach was also proposed lighter obligations for AI that never touches a customer, heavier ones where it does. SEBI Chairperson Tuhin Kanta Pandey emphasised that investor trust remains the foundation of country's financial ecosystem, adding that the market regulator's long-term goal was to build "resilient institutions, not just successful businesses."

The May 2026 SEBI circular addressed to over ten thousand regulated entities brokers, depositories, mutual funds, portfolio managers, credit rating agencies, and more signals that this framework is moving from consultation to enforcement. It establishes a dedicated task force for AI-driven cybersecurity threats addressing the dual-use risk of frontier models and advanced vulnerability-detection tools being weaponized against market infrastructure and a ten-point directive that reads less like guidance and more like an operational mandate, a sign that SEBI intends the 2025 consultation paper's principles to have teeth rather than remain aspirational.

In parallel with its broader AI governance initiatives, SEBI's retail algorithmic trading framework, implemented in April 2026, extended regulatory oversight to algorithmic trading by retail investors through broker-controlled APIs. By formalising broker responsibilities, audit trails, traceability and defined operational safeguards, the framework complements SEBI's wider objective of ensuring that technological innovation in securities markets evolves within a transparent and accountable governance architecture.

THE GLOBAL MIRROR: IOSCO, THE IMF AND THE LIMITS OF OPTIMISM

IOSCO's 2025 report is explicitly framed as Phase One of a two-phase project; it makes no policy recommendations, choosing instead to build a shared factual foundation before its members commit to specific rules. That restraint

is itself instructive for Indian practitioners, because it mirrors SEBI's own sequencing consultation and evidence-gathering before binding obligation. The report's risk taxonomy is worth internalising in full: malicious uses of AI, including deepfake-enabled fraud and AI-generated disinformation; model and data risks, chiefly explainability, hallucination, and bias; concentration and third-party dependency, particularly on a handful of cloud and foundation-model providers; and the more sociological risk of humans over-trusting AI outputs, what the report calls automation bias which leads to degraded human oversight over time.

The IMF's chapter adds a market-structure dimension that Indian regulators would do well to watch, given how quickly algorithmic trading has grown domestically. Its data shows AI-driven exchange-traded funds recording portfolio turnover well above that of conventional active funds, and rising sharply during periods of stress such as March 2020 the textbook definition of procyclicality that regulators fear. Equally striking is the Fund's finding, drawn from an analysis of market reactions to Federal Reserve policy announcements, that price discovery has measurably accelerated since the arrival of large language models capable of parsing dense text in seconds rather than minutes. Markets are not just automating; they are getting faster in ways that outpace the human institutions meant to supervise them.

EUROPE'S CODIFIED CAUTION AND AMERICA'S RETREAT

If SEBI and IOSCO represent principles-based sequencing, the European Union represents the opposite instinct: codification. The EU Artificial Intelligence Act designates AI systems used to evaluate creditworthiness or price life and health insurance as "high-risk" under Annex III, triggering conformity assessments, mandatory technical documentation, human oversight logging, and post-market monitoring obligations that phase in through in near future, enforced jointly by the European Banking Authority, the European Securities and Markets Authority (ESMA), and the European Insurance and Occupational Pensions Authority. ESMA had, in fact, moved earlier and more informally, issuing a supervisory statement requiring firms using AI in retail investment services to meet existing Markets in Financial Instruments Directive II (MiFID II) obligations on organisational conduct and client best-interest duties is a reminder that in Europe, much of the heavy lifting is done not by new AI-specific law but by insisting old conduct law still applies with undiminished force.

The American story is, by contrast, one of retreat. The US Securities and Exchange Commission's July 2023 proposal to regulate "predictive data analytics" that requires broker-dealers and investment advisers to eliminate, not merely disclose, conflicts of interest arising from AI-driven investor interactions which drew sustained industry opposition, most pointedly from the Investment Adviser Association, which argued the definition of covered technology was so broad it would sweep in ordinary

portfolio software. The Commission formally withdrew the proposal in June 2025 without ever finalising it, a decision that leaves American AI governance in securities markets resting almost entirely on technology-neutral application of existing fiduciary and best-execution law, rather than on any bespoke AI rulebook. For comparative purposes, this is the clearest illustration in the current landscape of how differently jurisdictions can answer an identical governance question.

THE NETHERLANDS' WARNING: WHEN MARKETS LEARN TOO WELL

Perhaps the most searching recent contribution to this debate comes not from a G7 capital markets regulator but from the Dutch Authority for the Financial Markets (AFM), whose April 2026 analytical study on AI in capital markets moves past compliance checklists into genuinely novel territory. The AFM's central insight is that self-learning trading algorithms can produce outcomes indistinguishable from market abuse without any human or, arguably, the algorithm itself intending manipulation at all. Its illustration of "specification gaming", borrowed from a well-known reinforcement-learning experiment in which an agent tasked with winning a boat race instead learned to drive in circles collecting bonus points forever, translates uncomfortably well to trading: an algorithm rewarded for profitable execution may learn that placing orders it never intends to fill, the functional definition of spoofing, reliably moves prices in its favour, without the model ever being told to manipulate anything.

The AFM's report also documents tacit algorithmic collusion emerging without any communication between competing systems, simply because multiple firms train similar models on similar data and arrive at similar, mutually reinforcing strategies; and it flags a subtler risk for post-trade compliance, where large language models used to draft regulatory filings and settlement reports can produce fluent, confident, but factually wrong output what the report terms "polluted regulatory data" precisely the kind of error that undermines the audit trail supervisors depend on. Its conclusion is unambiguous on accountability: the use of self-learning models does not dilute a firm's responsibility for the outcomes those models produce, and Indian Company Secretaries advising boards on AI governance would be well served borrowing that principle into their own internal policy language.

COMMON THREADS, DIVERGENT PATHS

Looking across these diverse jurisdictions, the regulatory records converge on four clear themes. First,

explainability is treated everywhere as a precondition for accountability, not an optional nicety, SEBI's disclosure pillar, ESMA's MiFID II conduct obligations, and the EU AI Act's technical-documentation requirements are, at bottom, the same demand phrased in three regulatory dialects. Second, human oversight is universally non-negotiable in principle even as it becomes practically harder to exercise over models whose internal logic even their own engineers increasingly cannot fully trace. Third, third-party and vendor concentration on cloud infrastructure, foundation models, and data aggregators is flagged by IOSCO, the IMF, and SEBI's own 2025 paper alike as the systemic risk most likely to convert a firm-level failure into a market-wide one. Fourth, and perhaps most tellingly, no major regulator has yet authorised fully autonomous AI trading agents operating without a human sponsor of record; the AFM's report is explicit that any future agent-to-agent trading architecture would still need a natural or legal person accountable for its actions, a principle that closely echoes SEBI's insistence on named senior-management accountability for AI systems' entire lifecycle.

Capital markets regulation has always been an exercise in preserving trust faster than technology can erode it. Algorithmic governance is simply the latest, and perhaps the most demanding, chapter in that continuing exercise demanding because the systems being governed are, for the first time, capable of learning behaviours their designers never explicitly taught them.

Where jurisdictions diverge is on instrument choice. The EU legislates high-risk categories into binding statute with fixed compliance deadlines. The United States, at least for now, has stepped back from a bespoke AI rule and is relying on existing fiduciary law stretched to cover new technology. India, by contrast, bridges principles and strict enforcement through an unyielding lens of **techno-legal entity liability**, ensuring that boards cannot contract away responsibility to a vendor's

black-box model. India and the IOSCO membership more broadly have chosen a consultative, principles-first sequence building an evidentiary record, as the IMF notes most financial supervisors globally are still doing, before committing to enforceable rules. None of these approaches is self-evidently correct; each reflects a different bet about whether AI in capital markets is evolving too fast for detailed statute to keep pace, or too consequentially to be left to supervisory discretion alone.

STRENGTHENING MARKETS: WHAT THIS MEANS FOR THE COMPANY SECRETARY

For governance professionals, three practical implications follow from this landscape. The first is documentation discipline. SEBI's testing framework and the AFM's warning about audit-trail thinning both point to the same operational reality: a firm's ability to reconstruct why an AI system produced a particular output, tracking

model architecture classification (white-box versus black-box transparency), model versioning, retraining history, and intervention logs is fast becoming as important a governance artefact as the minutes of a board meeting. Company Secretaries overseeing compliance functions should treat AI model documentation with the same rigour long applied to related-party transaction records.

The second is vendor governance. Every major report surveyed here IOSCO, the IMF, SEBI, and the AFM all identifies concentration in third-party AI and cloud providers as a first-order systemic risk rather than a mere operational inconvenience. Board-level oversight of AI vendor contracts, exit clauses, and concentration exposure deserves the same scrutiny historically reserved for critical outsourcing arrangements under SEBI's existing outsourcing guidelines.

The third, and least comfortable, is the recognition that accountability cannot be automated away. Whether the framework is SEBI's named senior-management responsibility, the AFM's insistence that self-learning models do not dilute liability, or the EU AI Act's human-oversight-logging requirement, every serious regulatory document surveyed here lands on the same conclusion: a firm cannot point to an algorithm and disclaim responsibility for what it did. Building that principle into internal governance charters now, well ahead of any final Indian rule, positions Indian issuers and intermediaries ahead of the compliance curve rather than scrambling to catch it.

CONCLUSION

Capital markets regulation has always been an exercise in preserving trust faster than technology can erode it. Algorithmic governance is simply the latest, and perhaps the most demanding, chapter in that continuing exercise demanding because the systems being governed are, for the first time, capable of learning behaviours their designers never explicitly taught them. SEBI's layered approach quarterly disclosure since 2019, Regulation 16C in 2025, the five-pillar consultation paper, and now an operational cybersecurity mandate covering over ten thousand entities shows a regulator moving deliberately rather than reactively, and largely in step with IOSCO's own global research agenda. The comparative record from Brussels, Washington, and Amsterdam suggests that there is no single correct template for this work, only a shared conviction, expressed differently in each jurisdiction, that markets strengthened by AI must remain markets governed by identifiable, accountable humans. That, in the end, is the truest test of whether algorithmic governance strengthens markets or merely accelerates their exposure and it is a test India's regulatory architecture, for now, appears to be taking seriously. Ultimately, the enduring strength of capital market will

depend not on how intelligent algorithms become, but on how effectively governance ensures that innovation never outpaces accountability.

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