

CAPCO

Next Level Compliance:

AI in Payments Transaction Monitoring
and Financial Crime Prevention

Part 3

**AI-driven opportunities in
financial crime prevention**

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AI is transforming compliance and transaction monitoring in payments from labour-intensive regulatory obligations into strategic drivers of value. By fostering innovation, enhancing collaboration and ensuring robust regulatory frameworks, AI not only improves the efficiency and effectiveness of monitoring processes but also unlocks new capabilities, new business models and new revenue opportunities for financial institutions.

In this third and final part of our Next Level Compliance: AI in Payments Transaction Monitoring and Financial Crime Prevention series, we explore how AI is reshaping the compliance landscape, what opportunities lie ahead and how institutions can prepare for the next generation of intelligent payments oversight.

The real business opportunity lies not only in performing existing tasks faster or cheaper, but in enabling entirely new capabilities: anticipating risks before they arise, protecting customers more intelligently and simplifying the complexity of ever-growing regulatory expectations.

AI-powered transaction monitoring: from rules to predictions

Traditional transaction monitoring is built on fixed thresholds and simple scenarios. This approach is increasingly insufficient in a digital world where criminal behavior adapts rapidly. AI enables a decisive shift from static detection to dynamic predictive monitoring.

Machine learning models can learn what normal behavior looks like and flag anomalies with far greater precision. HSBC, for example, reports significant reductions in false alerts (60%) and improved detection accuracy after implementing machine learning based monitoring.¹ These improvements directly translate into lower operational costs and better coverage of financial crime patterns.

However, the true business opportunity lies in what AI enables next. Monitoring will evolve from reactive flagging to anticipatory risk intelligence. Instead of waiting for suspicious transactions to occur, models will forecast emerging laundering networks, unusual customer behavior shifts and high-risk corridors before issues materialize. This predictive capability will allow institutions to act early, allocate resources more effectively and demonstrate proactive risk mitigation to regulators.

Fraud prevention as a growth and trust engine

In fraud prevention, AI offers benefits that reach far beyond loss reduction. Accurate real-time decisioning reduces false declines, directly increasing approval rates, merchant revenue and customer satisfaction. Visa and Mastercard already use AI to block tens of billions of dollars in fraudulent transactions annually, with Mastercard's graph-powered generative AI doubling the detection rate of compromised cards.²

Looking to the future, fraud defenses will become behaviorally intelligent. AI models will recognize subtle signals of manipulation or duress such as unusual timing, device behavior, hesitation during a session or scripted language in customer interactions. This allows institutions to intervene before a customer completes a scam-initiated transaction.

This shift from transaction intelligence to human-aware intelligence will differentiate leading institutions through superior customer protection and trust.

Federated learning: a shared shield against complex fraud

Fraudsters increasingly operate across multiple banks and payment providers. Individually, each institution sees only part of the picture, making sophisticated schemes difficult to detect. Federated learning solves this without compromising privacy.

In this model, institutions collaborate by training shared AI models without exchanging customer data. Each participant keeps data locally; only model patterns, not raw information, are shared and aggregated.

The outcome is powerful: institutions gain access to fraud detection capabilities informed by patterns observed across the entire network, not just their own customer base. This allows earlier identification of mule accounts, synthetic identities and multi-bank scam networks.

Federated learning could evolve into a regional or global standard, encouraged by regulators and industry bodies. It offers a rare combination of enhanced detection, stronger privacy and lower cost - a true win for the entire ecosystem.

AI-driven compliance-as-a-service (CaaS)

A transformative new business opportunity is emerging: compliance-as-a-service. Instead of each institution running its own monitoring and KYC infrastructure, leading banks or tech-driven providers can offer AI-based compliance services to others.

Agentic AI systems make this model economically viable. These systems can execute multi-step compliance tasks, autonomously gathering data, performing checks, drafting cases, preparing regulatory documentation, while human experts focus on supervision and escalation.

For providers, CaaS unlocks scalable revenue streams and positions them as compliance hubs within the ecosystem. For smaller banks and fintechs, it offers access to cutting-edge compliance capabilities at a fraction of the cost of in-house operations.

CaaS could reshape the industry much like cloud computing reshaped IT, by enabling shared infrastructure, lower costs, better performance and faster innovation.

Real-time cross-border payment monitoring

Cross-border payments are notoriously complex, involving multiple intermediaries, currencies and regulatory regimes. Traditional compliance checks struggle to keep pace.

AI makes real-time, end-to-end visibility possible. Models can learn typical flow patterns for specific currency corridors and instantly flag unusual routes, suspicious speed profiles or atypical sender-receiver behaviors. This also enables immediate sanctions screening, embargo detection and tax-risk assessment.

In the future, institutions may offer premium 'risk-

optimized' cross-border payment products, where AI dynamically routes international transfers based on risk, speed and cost. Such services create new value for corporate customers and differentiate providers in a crowded global payments landscape.

Agentic AI: reinventing compliance operations

Agentic AI systems, i.e. AI agents capable of reasoning and performing multi-step tasks, will radically change internal compliance operations. Instead of teams of analysts manually gathering evidence and composing lengthy case summaries, AI agents will autonomously handle data collection, analysis, narrative drafting and exception escalation.

Human experts will shift from doing the work to orchestrating and validating it. This leads to faster case handling, consistent quality, complete audit trails and scalable operations without proportional increases in headcount.

Agentic AI will eventually support investigations, internal audits and even continuous control testing, transforming compliance into a forward-looking, intelligence-led function.

AI and blockchain/DLT: new risk and revenue models

The combination of artificial intelligence and blockchain or distributed ledger technology (DLT) opens a set of business opportunities that neither technology can deliver alone.

DLT creates shared, tamper-proof transaction ledgers; AI provides the intelligence to analyze them. Together they offer unprecedented transparency and automation across financial ecosystems.

Financial institutions could use AI to analyze on-

chain data for AML, fraud detection and cross-border tax compliance with far greater accuracy. Smart contracts (programmable agreements on the blockchain) can embed compliance rules directly into payment flows, allowing automatic checks and reporting. AI can monitor exceptions, adapt rule sets, analyze risk patterns across the ledger and detect anomalies across an entire network rather than one institution's data.

This unlocks new products such as automated regulatory reporting for digital assets, AI-powered risk scoring of tokenized instruments and shared industry utilities for on-chain transaction monitoring. In the long run, AI-enhanced DLT networks may become the backbone of trusted global value movement.

Using AI to predict payments flows and operational stress points

Payments are increasingly real-time: transfers are instant for end users, with near-immediate settlement, leading to more tightly coupled payment ecosystems. As speed increases, so does operational fragility. AI offers institutions the opportunity to predict where stress will emerge before outages occur. Models trained on historical payment flows, customer behavior and external factors could forecast transaction surges, liquidity shortages or unusual routing patterns hours or days ahead.

For corporate payments and treasury operations, this predictive capability is already emerging. Some fintech platforms use AI to predict invoice payments, improving working capital planning and freeing cash tied up in uncertainty. But future opportunities go further. Imagine an AI system that advises a payments provider how to dynamically route transactions across rails to optimize cost, speed and risk, automatically shifting volumes between instant payment networks, card schemes and account-to-account rails to maximize efficiency. This becomes not just a risk management tool, but a revenue optimization engine.



The emerging future: autonomous, unified risk management

Across the domains described in this article, a clear trajectory is emerging. AI is driving financial institutions toward a world where fraud, AML, sanctions and operational risk are managed as a unified, real-time capability. Risk becomes predictive rather than reactive. Compliance shifts from manual workflows to intelligent automation. Cross-bank collaboration and blockchain/ DLT integration create transparency beyond organizational boundaries.

AI is still a long way from being widely used in compliance-related processes at financial

institutions, but it will play an increasingly significant role in the future. This makes it even more important to use AI's possibilities competently in compliance and to build up the necessary specialized knowledge as well as enhancing tools and processes.

The institutions that succeed will be those that combine innovation with responsibility, balancing advanced analytics with explainability, fairness and strong governance.

How Capco can help

Successfully adopting AI in transaction monitoring, fraud prevention and payments compliance requires more than deploying technology. It demands a strategic vision, robust data foundations, responsible governance and redesigned operating models.

Capco offers deep expertise in payments, regulatory transformation and AI-driven business design. We help institutions identify the highest-value opportunities, build scalable and compliant AI architectures and implement solutions

that deliver measurable impact. Whether designing collaborative monitoring platforms, developing compliance-as-a-service offerings, embedding AI into cross-border payment rails or connecting AI with blockchain ecosystems, Capco guides organizations end-to-end.

AI has evolved from an efficiency tool into a true strategic differentiator. Contact us to discuss how with Capco as a partner, your institution can turn this technological shift into sustainable competitive advantage.

References

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About Capco

Capco, a Wipro company, is a global management and technology consultancy redefining transformation across the financial services and energy industries. Capco leverages the power of AI and our deep domain expertise to help our clients move faster, make smarter decisions, and drive greater impact. Our award-winning Be Yourself at Work culture and diverse talent drive bold, forward-thinking ideas and lasting change.

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