

# Realizing the benefits of agentic AI-powered financial crime compliance

Overcome FCC-related challenges with innovative technologies and a seamless, structured approach to data-modernization

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The transformation of financial crime compliance technology from basic rules to agentic AI represents a significant shift in the industry. Compliance is now smarter, faster and more proactive, helping financial institutions stay one step ahead of ever-evolving threats.

By implementing strong governance, agentic AI can greatly improve the way banks and other financial institutions defend against financial crime. It combines human insight with machine accuracy to safeguard the financial system and foster enduring customer trust.

To fully capitalize on this opportunity, innovators, regulators and financial crime experts must work together to ensure that AI is used both responsibly and ethically. Those who take the lead will not only achieve better compliance results and operational efficiency but also contribute to a safer and more resilient financial landscape.



# Fighting financial crime with AI



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**Agentic AI: It's the next compliance breakthrough.** While generative AI (GenAI) has transformed the industry by automating content creation, summarizing data and supporting decision-making, agentic AI goes a step further. Unlike GenAI, which relies on human prompts to generate outputs, agentic AI can perceive, reason and autonomously act within defined guardrails. This allows financial institutions (FIs) to proactively monitor, detect and respond to threats in real time — a critical capability for staying ahead of increasingly sophisticated risks.

To do so, banks and other FIs must adopt advanced technologies to modernize their financial crime compliance (FCC) frameworks. It's a necessary step, with the continuing escalation of financial crime tactics such as synthetic identity fraud, insider trading and targeted cybersecurity vulnerabilities. Synthetic identity fraud alone is the fastest-growing financial crime in the US, accounting for up to

20% of credit losses and costing lenders an estimated \$6 billion annually.<sup>1</sup> Financial services in general continue to be a strong target for cyberattacks. Totalling 23% of all incidents in 2024, it is the second-highest-hit industry behind manufacturing.<sup>2</sup>

As threats intensify, regulators are responding with unprecedented scrutiny. In the past year, regulators imposed over \$19 billion in financial crime-related penalties globally, as compliance failures and AI-enabled cybercrime drove enforcement actions.<sup>3</sup> The US Securities and Exchange Commission (SEC) in 2023 filed 784 enforcement actions, including a record number of insider trading cases, resulting in \$5 billion in financial remedies.<sup>4</sup> That same year, global anti-money laundering (AML) fines soared to \$5.1 billion, a 50% increase over the previous year.<sup>5</sup>

## Financial crime compliance opportunities

With FIs racing to modernize in the face of evolving fraud and regulatory demands, the FCC business process services market is expected to grow at 18–22% annually, reaching \$5.6 billion by 2025.<sup>6</sup> For financial organizations leveraging AI, the result can be significant operational efficiency gains. AI helps reduce the time needed to analyze billions of transactions from weeks to days. It also enables faster detection of financial crime with minimal customer disruption. Research shows that almost 70% of banking leaders believe that GenAI significantly enhances their fraud detection capabilities by analyzing transaction patterns and detecting anomalies that could signal fraud.<sup>7</sup> For example, HSBC Bank, which has publicly embraced AI in its financial crime program, reported a 60% reduction in false-positive cases after implementing AI solutions.<sup>8</sup>

Organizations that have fully implemented security AI and automation report \$1.88 million lower average breach costs than those without such technologies.<sup>9</sup> At the same time, 83% of consumers say they would immediately stop doing business with a company following a security breach.<sup>9</sup> Together, these trends highlight the urgent need for robust monitoring, modernization of financial crime compliance and a strong commitment to customer trust.

The complex journey to FCC maturity requires overhauling legacy systems and integrating innovative solutions. As digital banking expands, FIs know that data-modernization is the key to remaining viable in competitive markets. The pressure is on to streamline both operations and costs. By using agentic AI, FIs can achieve greater efficiency, agility and resilience in their FCC operations.

## 4 modernization challenges

Financial institutions face four key challenges when modernizing financial crime compliance-related activities. Each challenge underscores the need for intelligent automation and optimized solutions.



**Rapid technological changes:** Failing to keep up with technological advancements can lead to operational inefficiencies and increased risk of noncompliance. Financial institutions must integrate advancements into their FCC systems to stay compliant and competitive.



**Cybersecurity risks and fraudulent activity:** Banks face greater vulnerability to sophisticated cyberthreats, such as phishing, credential theft and ransomware. To counter these threats, they must implement robust security measures and maintain 24x7 monitoring.



**Resource and talent gaps:** A shortage of talent slows the implementation of effective FCC measures and increases reliance on manual processes, which often results in errors and inefficiencies. Banks need expertise in advanced analytics and data science to design and develop solutions that can interpret complex financial crime patterns.



**Globalization and cross-border transactions:** International regulations and cross-border transactions complicate FCC activities. Financial institutions must navigate these challenges to strengthen governance and management.

By using AI, FIs can not only address the current challenges but also protect their FCC operations against emerging threats.



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# AI revolutionizes financial crime compliance



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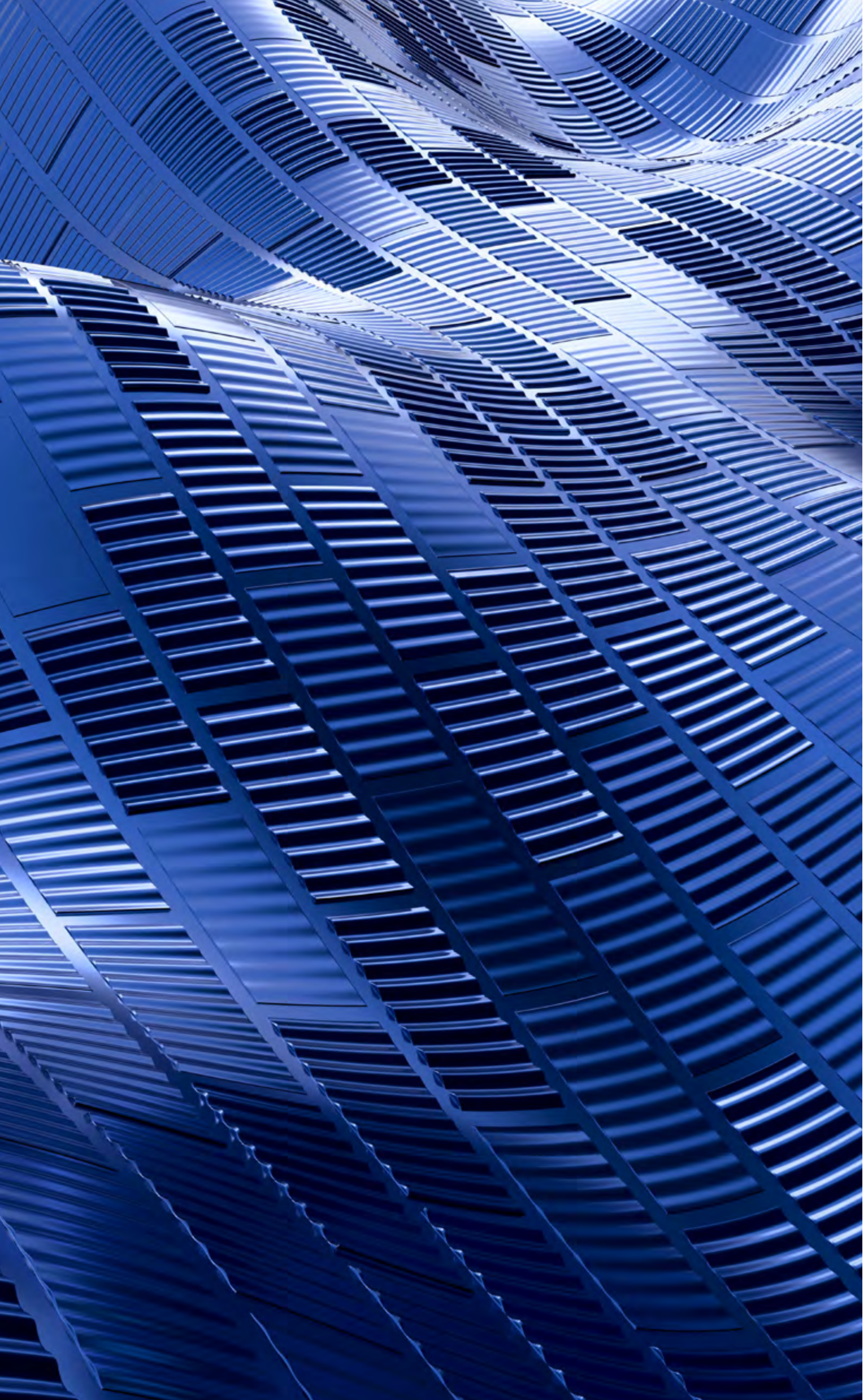
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Financial institutions are entering a new era in the fight against financial crime. What began as rule-based monitoring has evolved through machine learning and generative AI. Now, agentic AI is redefining the landscape. This shift isn't simply technological; it's a strategic transformation in how banks detect, investigate and prevent illicit activity in a complex regulatory environment.

**Rule-based systems:** Early compliance systems used static rules to flag suspicious transactions. These systems effectively identified known threats, but they lacked flexibility, generated high false positives, and forced teams to conduct heavy manual reviews.

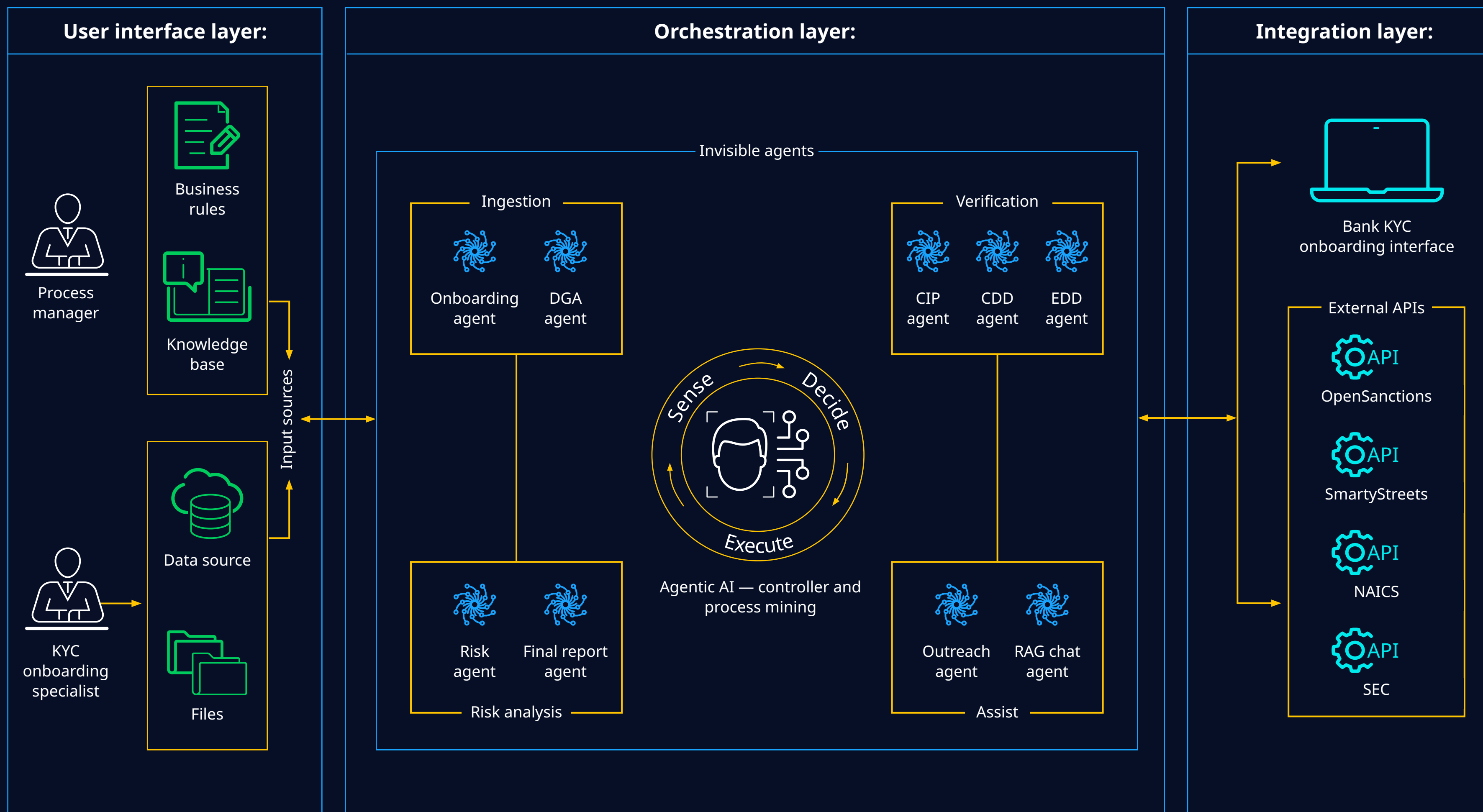
**AI and machine learning (ML):** ML introduced pattern recognition and anomaly detection, reducing false positives and uncovering emerging risks. However, these models remain reactive, constrained by historical data and predefined indicators.

**GenAI:** Because it streamlines documentation, client onboarding and risk assessments, GenAI can draft suspicious activity reports (SARs), summarize unstructured data and assist with case triage. However, it still relies on human prompts and faces explainability, bias and regulatory trust challenges.

**Agentic AI:** A leap forward from GenAI, agentic AI is capable of perceiving, reasoning and acting with minimal human input. It delivers real-time alerts, recommends actions and can auto-execute tasks within guardrails. Agentic AI integrates internal data, regulatory sources and external intelligence to monitor entire networks, not just isolated transactions. This capability makes it especially powerful for AML and fraud prevention in a global, fast-moving threat landscape.

As financial crime grows more sophisticated, agentic AI offers a proactive, adaptive and autonomous approach to compliance. But with greater capability comes greater responsibility. FIs must balance innovation with regulatory rigor.

## Example AI agent architecture: Know Your Customer (KYC) onboarding use case



### Agentic output

**User interface layer:** Provides KYC onboarding analysts with a dashboard for accessing key information and streamlining the completion of onboarding tasks via the agent orchestration layer

**Orchestration layer:** Serves as the engine of agentic AI, where each agent LLM performs specific functions and works together to retrieve information in an accurate, timely and coordinated manner

**Integration layer:** Connects to external data sources such as internet news feeds and internal databases to retrieve information for the agents in the orchestration layer in order to process user requests



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## Critical concerns in AI deployments

As banks adopt AI in compliance, they face growing regulatory scrutiny around fairness, transparency, privacy and accountability. Addressing these concerns is essential to ensure both regulatory alignment and ethical AI use.

**Bias and fairness:** AI models may unintentionally reinforce historical biases, such as over-flagging certain regions or demographics. Banks can mitigate this risk by using diverse training data and applying fairness-aware techniques to detect and correct bias.

**Transparency and explainability:** Regulators require FIs to ensure that AI decisions — especially those in high-risk areas like AML — are transparent and explainable. Black-box models are insufficient. Institutions must adopt explainable AI (XAI) frameworks that clearly justify risk scores and compliance actions.

**Data privacy and security:** AI systems process sensitive financial data, making privacy a top concern. To comply with GDPR, CCPA and the EU AI Act, FIs must use techniques like data minimization, federated learning and synthetic data to protect customer information.

**Accountability and AI governance:** Despite automation, banks remain accountable for AI decisions. With a human-in-the-loop (HITL) approach, human analysts oversee critical actions (like SAR filings), maintaining regulatory trust and operational control. HITL means that, even though AI systems can process data and make recommendations, a person always reviews and approves important decisions before they are finalized. This ensures that expert judgment and oversight remain part of the compliance process.



# Structured approach to AI governance



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Although regulatory scrutiny remains high, the benefits of agentic AI far outweigh the challenges — provided AI is deployed responsibly. To achieve the full benefits of agentic AI while complying with regulators, FIs must follow a structured approach to AI governance and deployment.

**Use centralized data platforms.** High-quality data is essential for creating and operating GenAI models, which serve as the foundation for agentic AI systems. Reliable data also underpins the analytics and insights that drive effective agentic AI frameworks and strong AI governance. By centralizing, synchronizing and scaling their data pipelines, organizations enable their AI agents to perform accurately and efficiently across all operational workflows. Doing so supports both day-to-day activities and long-term compliance.

**Adopt a robust AI architecture.** Hybrid cloud architectures offer scalability while maintaining control over sensitive data. This ensures that FIs follow appropriate data privacy and security policies and regulatory requirements.

**Implement strong AI governance frameworks.**

A dedicated AI risk and compliance committee can oversee AI deployments to ensure alignment with firm and industry standards. The committee should conduct bias audits, explainability testing and ongoing model validation.

**Maintain human oversight and ethical AI practices.**

HITL compliance processes, where AI supports but does not replace human judgment, provide expertise and oversight throughout workflows. Additionally, firms should adopt explainability and interpretability tools to make sure regulators and internal stakeholders understand AI-driven decisions.

**Engage with regulators and industry leaders.**

By participating in regulatory sandboxes, firms can test AI solutions in collaboration with regulators, stay up-to-date on the latest regulatory guidance and show they are proactive. Additionally, it is important to match AI models with new rules and frameworks, including the EU AI Act, US Treasury guidelines and Financial Action Task Force (FATF) recommendations.

# The benefits of integrating agentic AI in FCC



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**Banks stand to gain significantly as agentic AI becomes more integrated across financial crime compliance. With rising regulatory complexity and increasingly sophisticated threats, AI offers FIs a way to stay ahead. It not only improves accuracy and responsiveness, it also reduces costs. Across the AI maturity spectrum, key benefits include:**

**Fraud detection and prevention.**

Agentic AI excels at real-time risk detection and response. Unlike static rule-based systems, it continuously adapts to evolving fraud tactics and enables proactive threat mitigation. GenAI simulates fraud scenarios and generates synthetic data to stress-test detection models. Together, these technologies reduce false positives and increase accurate threat identification, delivering smarter, faster fraud prevention.

**Automated compliance workflows.**

Agentic AI streamlines repetitive tasks like transaction screening, case triage and SAR drafting. GenAI enhances document creation and summarizes regulations, while agentic AI improves workflows and frees teams to focus on higher-value activities.

**Improved regulatory reporting.**

Regulatory reporting is data-heavy and time-consuming. While GenAI helps draft narratives and flag inconsistencies, agentic AI automates data aggregation and formatting — boosting accuracy, speed and compliance.

**Proactive risk management.**

AI/ML continuously monitors regulatory changes and identifies compliance gaps. GenAI complements this by simulating regulatory impacts, enabling institutions to adapt early. This proactive approach reduces risk exposure and improves readiness.

**Better investigation capabilities.**

Traditional systems overwhelm teams with false positives. AI/ML improves detection through pattern recognition and anomaly analysis. Agentic AI adds context and prioritizes alerts, while GenAI pulls relevant data for faster, more focused investigations.

**Improved regulatory change management.**

With evolving global regulations, AI helps track and interpret changes. Agentic AI maps transactions across jurisdictions, ensuring global AML compliance with minimal manual effort.



# Client success story: Agentic AI cuts onboarding time by 40% and saves \$9M annually for financial institution

## Business need:

A financial institution was grappling with the inefficiencies of traditional know your customer (KYC) processes, including:

- **Manual document handling:** Onboarding required extensive manual collection and verification of documents.
- **Complex data analysis:** Analysts were overwhelmed by the volume and complexity of entity-related documents and reports.
- **Sub-optimal outcomes:** High costs and long processing times hindered agility and customer satisfaction.

The organization sought NTT DATA's assistance in using agentic AI to streamline onboarding, reduce costs and improve customer experience.

## Solution:

Our team built an agentic AI plug-in solution that integrates directly with the organization's existing onboarding and contract lifecycle management (CLM) systems. It improves and accelerates KYC and AML processes. The solution uses a multi-agent framework to automate key tasks and support human analysts with intelligent, real-time assistance. Notable features include:

- **Document gap analysis** to identify and fill in missing customer identification program (CIP) and customer due diligence (CDD) documentation.
- **Intelligent insights** that analyze transactions and customer data for faster risk assessment.
- **Automated outreach** to engage customers and collect missing information with fewer requests for information (RFIs).
- **Screening** to flag sanctions, as well as politically exposed persons (PEPs), Office of Foreign Assets Control (OFAC) and negative news hits.
- **Case summaries** to draft risk narratives and summaries for analyst review.
- **Continuous monitoring** to track external data for profile changes and alerts.

## Outcomes:

- **40%+ reduction** in onboarding time
- **Better customer experience**
- **60%+ increase** in document processing speed
- **Improved risk tracking and management**



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# Shaping a safer financial ecosystem



The evolution of FCC technology from simple rules to agentic AI marks a true paradigm shift. Compliance is becoming smarter, faster and more proactive, enabling financial institutions to stay ahead of increasingly sophisticated threats. With robust governance, agentic AI can significantly strengthen banks' defenses against financial crime. It augments human judgment with machine precision to protect the integrity of the financial system and build lasting customer trust.

Seizing this opportunity requires close collaboration among innovators, regulators and financial crime experts to channel AI's potential both responsibly and ethically. Organizations that lead the way will not only achieve superior compliance outcomes and operational efficiency but also help shape a safer, more resilient financial ecosystem for the future.

## About the authors

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Nick is a leader in data and AI with a proven track record of architecting and delivering end-to-end data and AI solutions. He has experience leading enterprise transformation programs at global financial institutions.

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## Partner with NTT DATA

NTT DATA is a business and technology service provider uniquely capable of supporting your entire AI journey — from strategy to infrastructure. We help clients identify their highest value use cases, fortify the enabling data foundation, and then create, deploy, power and manage the solutions. Our global scale, full-stack transformation portfolio and strong alliances with hyperscalers like Microsoft Azure, Amazon Web Services and Google Cloud Platform mean we can integrate and manage technology solutions seamlessly across business operations.

Our deep banking and financial services industry expertise, spanning cards and payments, lending, wealth management, capital markets and regulatory and compliance, helps our clients keep pace with market and technology trends and achieve competitive advantage.

Backed by NTT Group's \$3.6 billion annual investment in research and development, we are at the forefront of technology innovation, using our decades of experience in AI and GenAI to build powerful platforms, tools and accelerators that speed the delivery of results — ethically and sustainably.

[Learn more about how NTT DATA can help you tackle FCC.](#)

[\*\*Contact us to schedule a 30-minute agentic AI readiness assessment.\*\*](#)

List of abbreviations

| Abbreviation | Meaning                         |
|--------------|---------------------------------|
| AI           | artificial intelligence         |
| AML          | anti-money laundering           |
| BAU          | business as usual               |
| CCPA         | California Consumer Privacy Act |
| CDD          | customer due diligence          |
| CIP          | customer identification program |
| CLM          | contract lifecycle management   |
| FATF         | Financial Action Task Force     |
| FCC          | financial crime compliance      |
| FI           | Financial institution           |

| Abbreviation | Meaning                            |
|--------------|------------------------------------|
| GDPR         | General Data Protection Regulation |
| HITL         | human in the loop                  |
| KYC          | know your customer                 |
| ML           | machine learning                   |
| OFAR         | Office of Foreign Assets Controls  |
| PEP          | politically exposed person         |
| RFI          | request for information            |
| SAR          | suspicious activity report         |
| SEC          | Securities and Exchange Commission |
| XAI          | explainable AI                     |

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