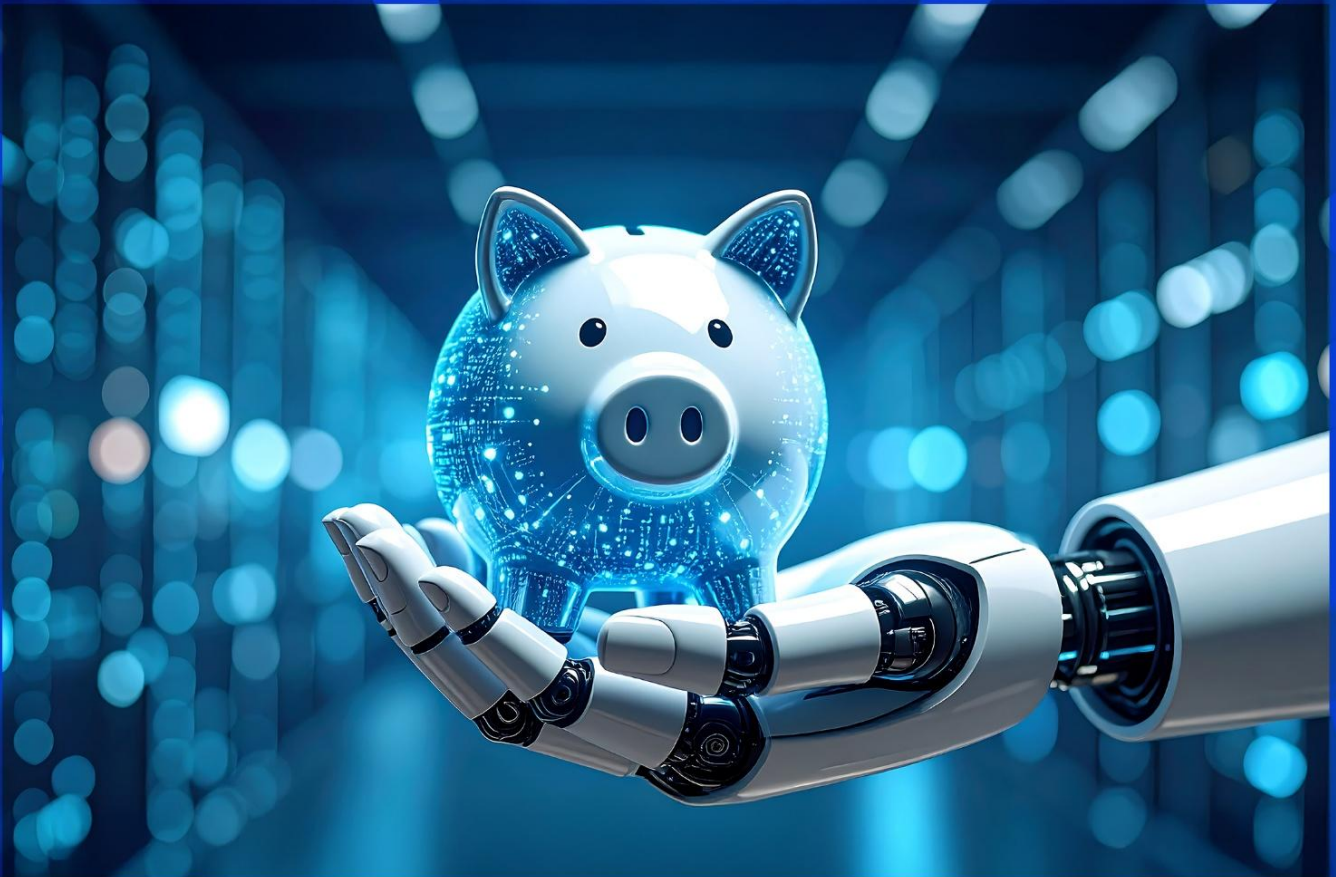




# Transforming financial crime with generative AI

Exploring the right application of autonomous agents to stay ahead!



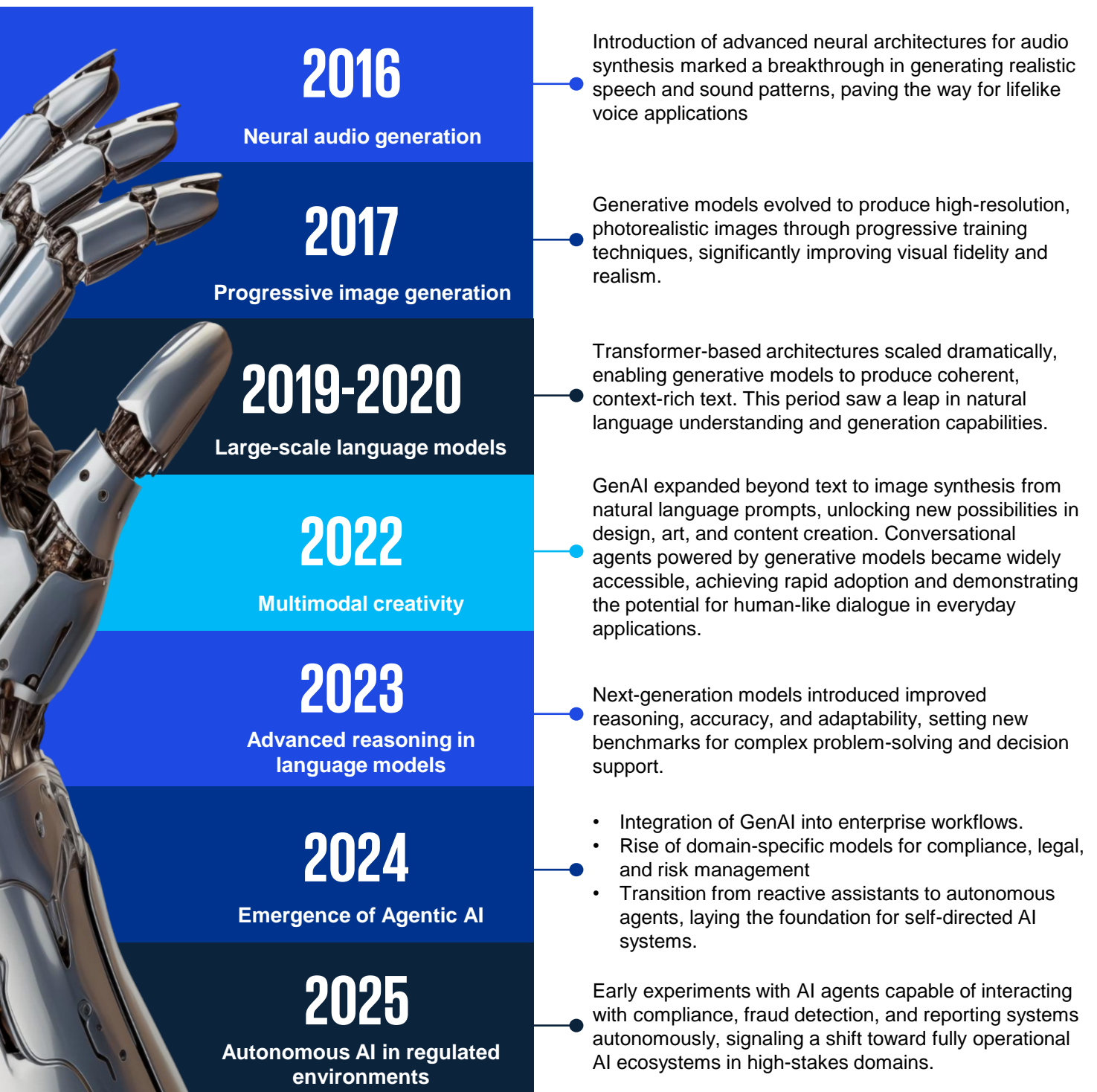
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## A. Introduction

The financial services sector has long embraced emerging technologies and constantly strived towards pushing boundaries for optimal utilisation of its resources. Among the latest evolution in technology, Generative AI or GenAI stands out due to its dynamic and multifaceted nature. This innovative technology has ability to bring in transformative applications within the sector, signaling a new era of efficiency and insight through AI based agents i.e. Agentic AI. Agentic AI, the next evolution, introduces autonomous decision-making, goal-oriented behaviour, and adaptive workflows. Ability to design workflows, initiate actions, collaborate across systems and learn from past actions opens a new paradigm for ushering in efficiency across Financial Crimes Compliance (FCC) value chain.



GenAI refers to a class of artificial intelligence algorithms that generate new, often realistic, data instances from scratch. These algorithms can learn the underlying patterns and structures in a dataset and then using that knowledge to create new, similar data points. The capability of Gen AI algorithms has shown remarkable progress in recent years, with algorithms like Generative Adversarial Networks (GANs) and Variational Autoencoders (VAEs) producing impressive and often indistinguishable outputs from human-created content.

From automated chatbots providing real-time customer support to advanced algorithms optimising investment strategies, the applications of AI in banking and finance are vast and transformative. This technology has already shown promising results in enhancing financial data analysis and decision-making processes.

Currently, the BFSI sector is experimenting with Agentic AI for end-to-end automation without any human involvement. It's being used for fraud detection, risk assessment and portfolio optimisation. Additionally, it's being explored for generating synthetic data to train models while dealing with concerns of data privacy. The growth of GenAI has seen a meteoric rise in the recent times.

As per KPMG LLP, a Delaware limited liability partnership report, '[The GenAI advantage in financial services](#)', it is found that 76 percent of executives plan to use generative in fraud and prevention, 62 percent in customer service and personalisation and 68 percent in compliance and risk. Yet, for now, most banks are moving cautiously — using internal experimentation to learn iteratively and building proof-of concepts around external use cases.

It is estimated that Generative Artificial Intelligence (GenAI) could add \$2.6 trillion to USD4.4 trillion to the global economy<sup>1</sup>. In a recent study by the MIT's Sloan School of Management, it was estimated that generative AI will boost worker productivity by 40 percent.<sup>2</sup>

India distinguishes itself in this trend of adopting new GenAI tools, due to access to abundant data, creative industry and linguistic diversity as reported by the Organisation for Economic Cooperation and Development (OECD).<sup>3</sup>

## B. Global adoption of Gen AI/Agentic AI in financial services industry

The global adoption of General Artificial Intelligence (GenAI) in the Financial Services (FS) sector marks a significant transformative phase across its diverse verticals, including insurance, banking, wealth management, and asset management. In the data-driven insurance industry, GenAI based agents are being employed to improve risk assessment, automate claims processing, and enhance customer service. The banking sector, led by global behemoths, is employing AI to boost operational efficiency, reduce workloads, and hasten turnaround. Specifically, banks in the Americas and EMEA regions are utilising GenAI innovatively,



<sup>1</sup>How generative AI could add trillions to the global economy, World Economic Forum, July 2023

<sup>2</sup>How generative AI can boost highly skilled workers' productivity, MIT Sloan, October 2023

<sup>3</sup>Generative AI: Unlocking opportunities for India's future, OECD.AI, Aug 2023

while those in the ASPAC region are in the experimental stages. Wealth management is witnessing AI's integration in personalised financial advisory, competitive portfolio construction, and predictive market behaviour. Similarly, in asset management, AI's profound data analytics capabilities are advancing investment strategy formulation and risk diversification.

Within FS, the banks are primarily focused on leveraging GenAI to create innovative new products assist in compliance operations, improving customer interactions, and offer wealth management and investment advisory services to their customers. Using GenAI enables them to deliver personalised investment advice to customers by analysing the markets in much lesser time, thus cutting costs, and improving processing time.

### Instances of AI being deployed by leading banks in India

#### Customer service enhancement

Some of the Indian banks and insurers are already employing AI-based assistants to provide better customer service, handling enquiries and transactions efficiently.

#### Automated wealth management

Robo-advisors, powered by AI, are being used to offer personalised investment advice. Several fintech start-ups are providing tailored financial planning services.

#### Claims processing in insurance

Insurers are leveraging AI to automate the claims process, reducing the time and errors associated with manual processing.

#### Fraud detection and risk management

AI algorithms are being used to detect unusual patterns indicating fraudulent activities. One of the largest Indian banks is already utilising AI for real-time surveillance to spot anomalies in transactions.

## C. Applying GenAI/Agentic AI in Financial Crime Compliance

GenAI has emerged as transformative for improving the financial crime compliance for all financial services globally while also adding value to business, revolutionising processes ranging from risk assessment to customer service. By leveraging machine learning algorithms, GenAI systems can analyse vast amounts of data to generate realistic simulations, forecasts, and even entirely new data points. Given the complexity of compliance, data and market dynamics, the FS institutions can leverage Agentic AI, built upon the foundations of GenAI capabilities. The ability to take autonomous actions, learn from outcomes, and collaborate across systems, make them for the dynamic and high-stakes environment of Financial Crime Compliance (FCC). Agentic AI systems can autonomously analyse vast datasets, simulate complex scenarios, and take goal-directed actions such as initiating investigations, submitting reports, or triggering alerts. In financial services, this evolution enables institutions to not only detect and prevent fraud but also to orchestrate end-to-end compliance processes with minimal human intervention. Below are some of major use cases of Agentic AI in the world Financial Crimes Compliance (FCC):

## Fraud detection and prevention

1

In the digital era, fraud detection and prevention are paramount for financial institutions. With the rise of sophisticated cyber threats, traditional methods of security are no longer sufficient. Equipped with GenAI, banks can enhance their fraud detection capabilities and refine risk assessment methodologies. Here is how GenAI can help:

- GenAI algorithms can analyse large volumes of transaction data to detect unusual patterns or anomalies that may indicate fraudulent activity. These algorithms can identify discrepancies such as unexpected transaction amounts, unusual spending patterns or suspicious account access. With minimal human intervention, these new algorithms can monitor transactions in real-time, flagging potentially fraudulent activities as they occur which will allow banks to take immediate action to prevent further fraud.

In addition to analysing the data, GenAI can be used in alert discounting/investigation by generating case summaries and adding context to the reports

- New GenAI techniques, such as Generative Adversarial Networks (GANs), can generate synthetic fraudulent transactions to provide a more diverse set of scenarios for training fraud detection models. This can prove critical in improving the robustness and accuracy of fraud detection algorithms. Additionally, these models can help banks identify and mitigate risk by analysing historical data patterns and market trends. Leveraging GenAI insights, autonomous agents can further be designed to take actions conducting L1 reviews by:
  - Prioritising alerts based on risk, initiating investigations, gathering evidence (through both internal and external source), and escalating cases as needed
  - Preparing case files
  - Disambiguating as per the acceptable risk thresholds (that can be documented in the risk appetite statement).

## Customer behavioural analysis

2

GenAI can analyse customer data to identify different customer interaction patterns based on behaviour, demographics, and preferences. Insights can be drawn to see how the customers typically apply for products, engage with different banking, respond to communications such as bank mailers etc. Such analysis requires real time analysis of vast amounts of data, e.g. device data, mouse/keyboard strokes, video KYC, social media profiles, etc. Unlike traditional GenAI, which supports passive analysis, Agentic AI agents can proactively monitor (based on customer actions/system nudges), learn from evolving behaviours, and initiate compliance actions based on risk thresholds. This can significantly help banks to resolve problems related to identity theft, mule accounts, etc.

## KYC operations

3

GenAI can help banks streamline operations through intelligent automation of tasks automation. GenAI technologies can be implemented as agents for:

- Real time validation of the customer provided (through digital journey) information/documents as per the KYC policy thereby reducing back and forth with the customer
- Triggering follow-up due diligence with the customer
- Collection and validation of information through syndicated data and external sources
- Generating KYC triggers and prompts for maker
- Preparing case summaries/investigation narratives on behalf of the KYC analyst makers
- Validating the profile as per the quality check (L2) standards
- The above are only indicative use cases applicable for the AML/KYC function. Depending on digital maturity, GenAI can be integrated with existing technologies with ultimate objective to migrate the role of the L1 KYC maker to value added Quality Check (QC) review i.e. L2.

## Risk assessment and compliance

4

GenAI helps banks proficiently simulate various economic scenarios by analysing a vast array of data points including historical performances and market trends and assess the bank's resilience to different risk parameters. This helps the banks prepare for any potential challenges and make informed decisions.

Banks can also use GenAI to streamline the process of regulatory reporting by automatically collecting, analysing, and formatting data required for compliance reports. This reduces the time and resources needed for manual reporting tasks and ensures accuracy and consistency in regulatory submissions.

Some of the key compliance/reporting functions where GenAI can be applied are customer screening and AML transaction monitoring.

GenAI tech can help augment screening function by automating the comparison with historical alerts/similar alerts. Once the sources are defined, GenAI can go further to investigate and validate the alerts by looking at both internal/external data. Similarly, in AML transaction monitoring (TM), GenAI can be used to generate new red flag scenarios and identify bad characters behind suspicious transactions through data triaging for counter parties.

By employing right prompt engineering, banks can ensure that GenAI generates right summary/narratives for the alert. Further, depending on the confidence levels fixed by the banks, L1 disambiguation/discounting can be completely taken over by the GenAI for alerts or at least specific categories of alerts.

## Automation of due diligence report

Agentic AI can redefine the due diligence process through autonomous orchestration of investigative workflows. These intelligent agents can independently:

- Collect and synthesise data from diverse sources such as financial statements, regulatory filings, adverse media, and transaction histories
- Analyse unstructured content using advanced natural language understanding to extract risk-relevant insights
- Evaluate risk factors associated with entities or transactions, incorporating financial metrics, behavioral patterns, and compliance indicators.

Agentic AI can initiate due diligence tasks, adapt the depth of analysis based on risk profiles, and generate customised reports aligned with jurisdictional and institutional standards. By embedding Agentic AI into due diligence workflows, financial institutions can accelerate investigations, enhance precision, and ensure regulatory alignment—transforming due diligence from a static reporting task into a dynamic compliance function.

## D. Government initiatives and regulatory support for GenAI in India

The current landscape of GenAI in the Indian BFSI sector is still nascent in terms of market adaption. India's strong IT infrastructure, coupled with a growing emphasis on digital transformation, has set a fertile ground for AI technologies. The regulatory landscape in India is also involving with various initiatives being introduced to promote growth of AI adaption, such as:

- National AI portal (INDIAai) is a joint initiative by the Ministry of Electronics and IT (MeitY), National e-Governance Division and NASSCOM. It serves as a central hub for artificial intelligence related news, learning, articles, events, and activities etc. in India and beyond
- Digital India BHASHINI, India's artificial intelligence led language translation platform, seeks to enable easy access to the internet and digital services in Indian languages. It aims to make AI and Natural Language Processing (NLP) resources available in the public domain to be used by Indian MSMEs, startups and individual innovators
- Atal Innovation Mission (AIM) aims to promote a culture of innovation and entrepreneurship in India by supporting incubators, accelerators and research initiatives in AI and other emerging technologies
- Reserve Bank of India (RBI) and National Payments Council of India (NPCI) are also considering introducing 'conversational payments' on the UPI platform, which is expected to incorporate an AI-powered system for enhanced security measures<sup>4</sup>
- One of the leading Indian public sector banks is expected to build new AI models that can help generate actionable insights for accurate business forecasting, facilitate hyper-personalised offers for customers and enable data-led insights for fraud detection, prevention, and mitigation
- The Department of Telecom (DoT) is expected to introduce an AI-powered platform to prevent frauds using disconnected mobile numbers by real-time flagging to both banks and the Unique Identification Authority of India (UIDAI).<sup>5</sup>

<sup>4</sup> Now make conversational payments using UPI and AI: RBI, The Economic Times, Aug 2023

<sup>5</sup> DoT Introduces "Financial Fraud Risk Indicator (FRI)" to strengthen Cyber Fraud Prevention, Ministry of Communications, May 2025



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