Whitepaper

From Automation to Autonomy

Agentic AI: Powering The Next Lending Revolution

Executive Summary

The advent of Agentic AI is a significant shift in artificial intelligence and automation, driven by AI models, autonomous agents, and real-time decision-making. Leveraging Agentic AI brings increased automation capabilities and also enables true autonomy across the entire lending lifecycle. In this whitepaper, we will explore how Agentic AI is poised to disrupt both digital and conventional lending businesses, and how Tech Mahindra can help financial institutions leverage this advanced technology to remain competitive and achieve the highest level of efficiency.

Content
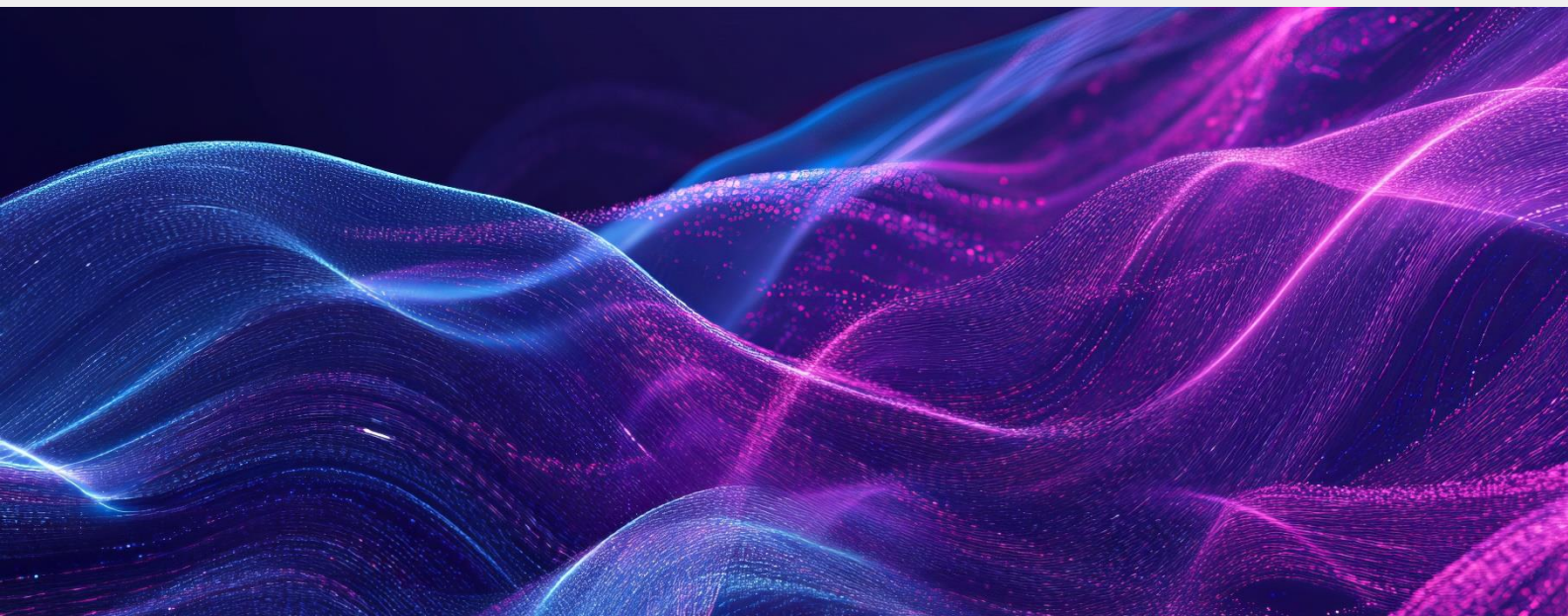
Introduction

According to a survey conducted by McKinsey, more than 75% of organizations use AI in at least one business function. Gartner predicts that "By 2029, agentic AI will autonomously resolve 80% of common customer service issues without human intervention, leading to a 30% reduction in operational costs."

While conventional AI systems operate within predefined parameters and require human oversight for decision-making, Agentic AI introduces autonomous, goal-directed agents capable of perceiving context, reasoning dynamically, and adapting their strategies in real-time. In lending lifecycle, this shift empowers AI agents to not only process applications or detect fraud but to manage borrower relationships proactively, provide financial advice, perform dynamic risk assessment, generate, and analyze documents for decision making, review and manage collaterals, optimize loan portfolios, deliver customer service, process payments and respond to market shifts with minimal human intervention. The edge Agentic AI brings lies in its ability to act with initiative, learn continuously from interactions, and align its actions with broader organizational goals, delivering greater efficiency, personalization, and resilience than ever before.
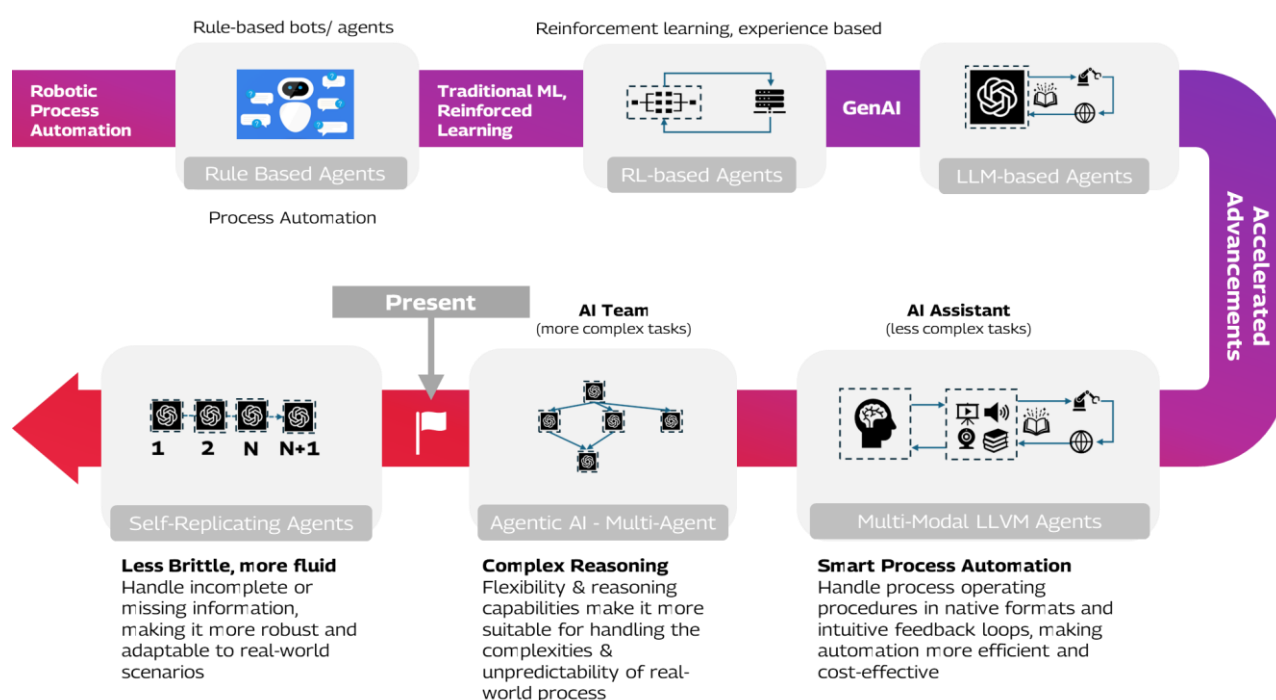

Figure 1: Evolution of Agents to Agentic AI

In recent years, the AI and automation landscape has evolved rapidly with the emergence of large language models (LLMs) and generative AI. While task-specific agents have been used to automate repetitive tasks, the integration of AI agents has enabled new pattern identification and predictive insights, albeit limited to specific tasks. AI-embedded RPA and digital process solutions have been pivotal for financial institutions, enhancing automation and efficiency, but they fall short in handling complex reasoning and real-world unpredictability.

Generative AI-powered agents have brought advancements, acting as co-pilots, but they still lack autonomy. Multi-modal LLM agents represent a step forward, capable of handling information in various forms, managing standard operating procedures, and improving over time through feedback loops. However, these agents still operate in standalone mode and excel primarily in standard processes.

The current evolution is driven by Agentic AI, which leads with autonomy, makes independent decisions, refines strategies, adapts to the environment, handles unpredictability, and coordinates with other agents, APIs, and systems.

Paradigm Shift: Automation to Autonomy

Automation and digitalization in lending have eliminated paper-intensive processes and integrated end-to-end (E2E) automation by connecting with various internal and external systems, as well as offering digital application intake. OCR-based data extraction and automated credit assessment further enhanced efficiency; however, these automations are limited by the underlying workflow rules. Hence, these can handle only pre-defined scenarios and do not perform when a novel situation is presented, mimicking the unpredictability of real-world situations.
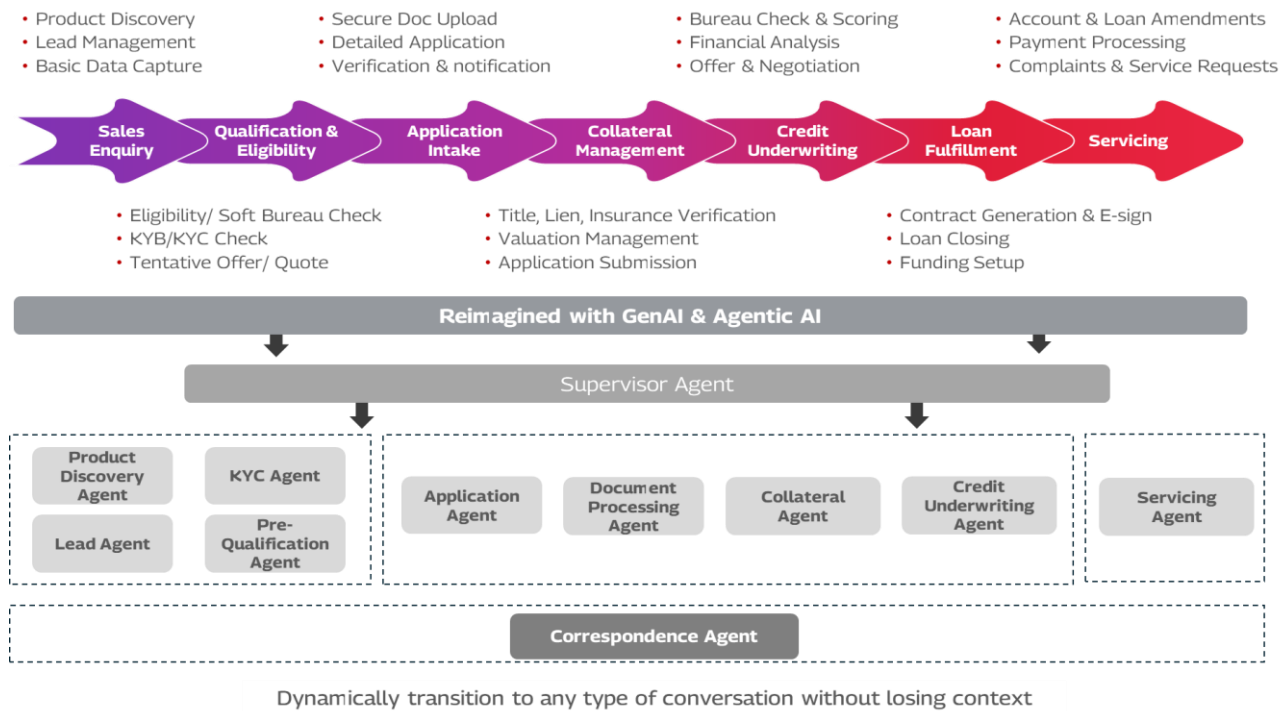

Figure 2: Agentic AI transforming and disrupting the lending value chain

Agentic AI completely redefines the operating model for the lending business by taking charge of each stage and driving it autonomously. Specialized AI agents handle the process task independently, leveraging underlying systems, APIs, workflows, and diverse datasets dynamically and contextually to address real-world complexities. It proactively anticipates customer needs and engages with them through hyper-personalized interactions. Continuous learning, self-improvement, and self-healing workflows, along with an adaptive approach to actions and autonomous decision-making, differentiate it from conventional digital platforms. Its agility in adapting to the changing business landscape enables it to focus on business innovation and reduce costs by driving efficiency.

Key Drivers for Agentic AI Adoption

A confluence of operational, regulatory, and customer-facing demands in the financial services industry drives the shift toward Agentic AI.

- **Process and Operational Inefficiencies:**

  Conventional automations are designed for specific processes in silos and driven by rules. Combining these automations often results in exorbitant dependencies and complexities. Independently tailored automations also lack cohesive intelligence and typically require human intervention for complex decision-making. Agentic AI enables autonomous decision-making, dynamic and real-time process optimization, leveraging cognitive capabilities for reasoning and cohesive insights. It also continuously improves its self-learning capabilities to handle novel scenarios.

- **Customer Engagement:**

  Customer engagement and retention cannot be emphasized enough. One of the main reasons for customer churn, drop, and poor engagement is the back-and-forth movement and resulting delays in an already overwhelming, documentation-intensive process. Agentic AI streamlines operations by processing complex activities, such as analyzing multiple documents in real-time, and augments instant decision-making. It further autonomously engages and manages customer relationships in a highly personalized manner, thereby enhancing customer satisfaction.

- **Evolving Business Model:**

  In a competitive and challenging market where new-age enterprises are emerging, FIs need to continuously experiment and launch new and innovative business models to compete and stay relevant. Agentic AI provides dynamic adaptability across the entire value chain, enabling FIs to adopt an agile and nimble approach towards innovative business models.

- **Regulatory Landscape:**

  According to the FDIC, 569 banks failed in the US from 2001 through 2025, resulting in nearly two bank failures per month. Hence, there is an increased focus on regulatory compliance as various measures of risk continue to rise in today's digital world. But FIs are daunted by the significant effort and cost of compliance with existing, changing, and new regulations. For basic measures, Agentic AI can autonomously monitor transactions and activities, flagging anomalies to ensure compliance. In a more advanced form, it can autonomously analyze changes and take proactive measures, such as updating the regulatory reporting template and making adjustments to code or AI models.

- **Technology Advancements:**

  Financial Institutions often find themselves offering disconnected experiences and face a higher cost of maintenance with conventional AI & digital technologies. It is quite rare to see completely streamlined and unified automation with real-time intelligence. As technology advances and AI adoption becomes more widespread, Agentic AI will emerge as the preferred choice for future-proofing and adapting to future advancements, thanks to its continuous learning and self-adaptive capabilities, combined with the expertise and intelligence of all systems.

The Solution: Tech Mahindra's Agentic AI Solution for Lending

Tech Mahindra has developed a modular, scalable Agentic AI solution for lending that uses autonomous agents for proactive decision-making at every stage. Customers interact with an omni-channel conversational interface. The agentic layer orchestrates business functions with contextual awareness and dynamic cognition.

Let's look at how these autonomous agents drive the specific lending functions:

- **Supervisor Agent:** Acts as the brainpower to dynamically orchestrate the personalized lending workflow for each customer, adapts to any context of the lifecycle, and adjusts workflow steps. It delegates actions and decision-making to task-specialized agents.

- **Product Discovery Agent:** Proactively prompts customers to assess their financial needs, provides product education, assists in product selection, and answers contextual queries based on institutional policies. For example, advising a customer to apply for a personal loan instead of a vehicle loan for purchasing a vehicle from a private reseller, as a financial institution may offer pre-owned vehicle loans only for vehicles from certified resellers. The system responds to customers based on the policies of the financial institution or the specific product in question.

- **Lead Agent:** Captures lead information and registers it in CRM, customer authentication and authorization, identifies new versus existing customers, nudges to recover abandoned journeys, and adaptive journey continuation. Additionally, it utilizes GenAI-powered contextual promotions and campaigns, along with tailored communications, to boost conversions.

- **KYC Agent:** Determines the optimal KYC path based on demographics, preferences, and document availability. Leverages AI, digital identity checks, and external data for efficient verification. Performs enhanced checks for AML, fraud, and anomalies across internal and external datasets.

- **Pre-qualification Agent:** Performs eligibility and AI-based affordability analysis with minimal financial data, correlation with FI's policies, and available data points. Additionally, it generates dynamic, pricing-based personalized quotes powered by GenAI. The agent also helps the customer select the closest matching quote and modify it to suit their needs.

- **Application Agent:** Leverages data points from earlier context, captures customer consent, provides the documentation requirements, presents the data points automatically extracted by document processing agent and prompts for additional required data for application such as bank account details, acceptance from customer before preparing the final application for submission and submits the final application for underwriting at appropriate stage.

- **Document Processing Agent:** Identifies uploaded documents, extracts relevant data, performs document fraud checks and completeness validation, and summarizes contract terms using GenAI. Supports middle- and back-office functions across the document lifecycle.

- **Collateral Agent:** Verifies asset class, beneficial ownership, and insurance via integrated external data sources. Automates AI-driven collateral valuation and monitors it continuously to reduce delays and support interim decisions.

- **Credit Underwriting Agent:** Conducts advanced risk assessment using AI/ML models on conventional and alternative data. Generates risk reports, creates personalized offers, and autonomously handles negotiation, exception handling, and deviation approvals.

- **Servicing Agent:** Drives the entire servicing lifecycle of the customer, including AI-based loan and account amendments, adaptive payment processing, support inquiries, reports, and statements generation, allocations, re-amortization, autonomous dispute resolution, alerts, reminders, continuous monitoring, default prediction, restructuring, missed payment reports, credit bureau reporting, delinquency notices, negotiations, settlements, adjustments, and account closures. It also tracks market conditions and customer behavior to recommend updates to loan products, thereby improving profitability.

- **Correspondence agent:** Delivers contextual, GenAI-powered customer communication across channels, adapting messaging based on the customer's preferred method and interaction history.

With Agentic AI, the end-to-end process can be completed in a single session. Specific decision-making can be routed to a bank representative for adverse scenarios, delivering a superior customer experience and significant effort savings for the bank.

As depicted in Figure 3 below, the Agentic layer includes hierarchical, intertwined agents led by a supervisor agent. These goal-driven agents utilize large language models, small language models, advanced AI/ML models, tools, and integrations with internal and external systems to influence the results of the lending process.
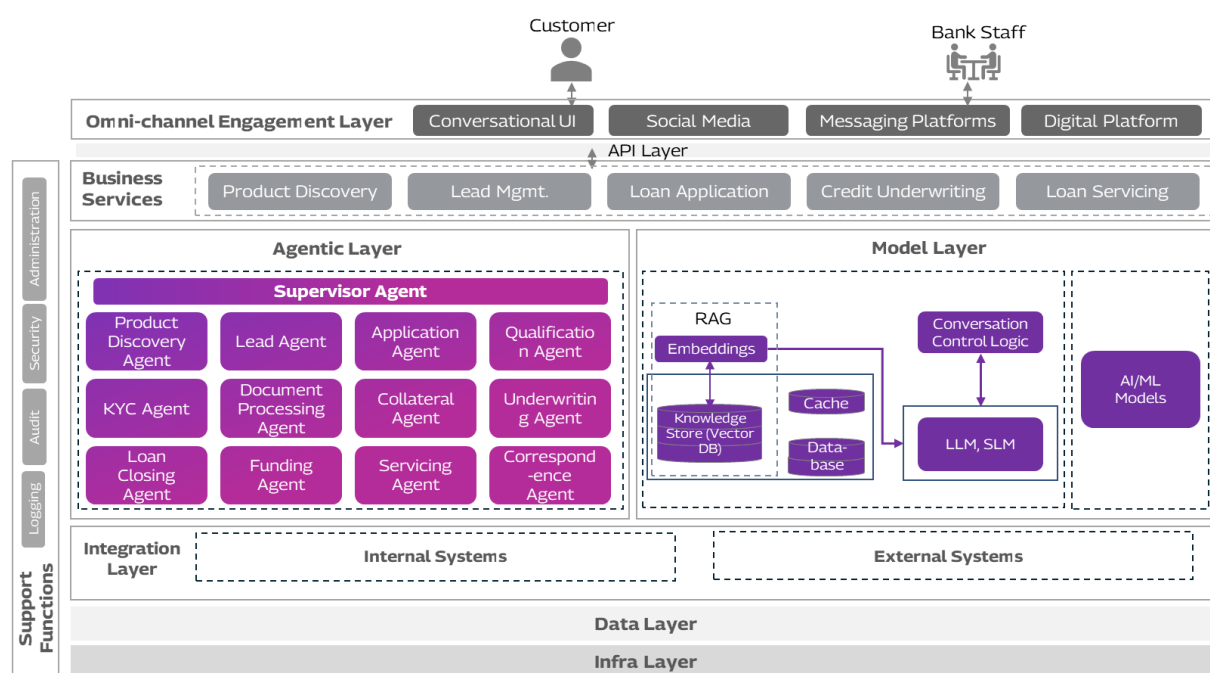

Figure 3: Tech Mahindra's Agentic Lending Solution

The Supervisor Agent understands the customer's context and intent, and in turn, delegates actions to the appropriate specialized agents. These specialized agents also have sub-agents to achieve specific sub-tasks such as getting information on the right loan products, registering a lead in the CRM system, determining the appropriate follow-up method, crafting a tailored message for communication, enquiring about customers' KYC/KYB status from the core system, and checking the credit score from the bureau. Furthermore, the response is provided to the supervisor agent upon completion of a specific task to determine the next set of actions.

Agentic AI approaches lending operations similarly to a human, but in a much faster and optimized manner, by leveraging asynchronous processing and dynamic prioritization. The fluidity of the agents also enables a smoother context switch and the proactive addressing of customer requests, allowing them to shift back to the original context, much like when talking to a financial institution representative.

Business Benefits of Agentic AI in Lending

By embedding Agentic AI into core lending operations, financial institutions can move beyond process automation to realize measurable business value across cost, speed, risk, and customer experience.

- **Faster Decision-Making and Reduced Turnaround Time:**

  Agentic AI can automate repetitive tasks, regardless of their complexity, thereby freeing up human capital to focus on strategic decisions. Moreover, by learning from past decisions and adapting to scenarios seamlessly, agentic systems minimize errors and rework, further lowering costs. AI agents operate continuously, enabling 24/7 processing and faster turnaround times. The scalability allows banks to handle higher loan volumes without proportional increases in staff or infrastructure.

- **Cost Optimization Through Operational Efficiency:**

  Agentic AI enables banks to differentiate themselves through speed, personalization, and intelligence. Financial institutions adopting agentic systems can offer faster approvals, accurate and inclusive risk assessments, and tailored financial products, while innovating with different models and establishing new benchmarks. This technological edge allows early adopters to outpace traditional lenders, attract tech-savvy customers, and redefine what borrowers expect from financial institutions.

- **Customer Experience and Engagement:**

  Agentic AI transforms customer engagement by delivering hyper-personalized, responsive, and seamless interactions throughout the lending journey. AI agents can guide borrowers through complex application processes, answer queries in real time, and proactively suggest suitable loan products based on individual financial profiles. This level of personalization not only enhances satisfaction but also builds trust and loyalty. By reducing friction and increasing transparency, agentic AI helps banks create a more intuitive and empowering experience for borrowers.

Conclusion

Incremental automation is no longer sufficient to meet the demands of real-time decision-making, personalized service, and dynamic compliance. Agentic AI introduces a scalable, autonomous layer of intelligence that allows financial institutions to operate with greater speed, precision, and adaptability.

By embedding intelligent agents across the lending value chain, from origination to servicing, banks and NBFCs can transform legacy processes into outcome-driven workflows. This shift not only improves operational efficiency but also enables differentiated customer experiences and better risk governance.

Tech Mahindra's Agentic AI lending solution offers a proven framework for this transformation, designed to integrate seamlessly with enterprise systems, expand across various business units, and adapt to shifting regulatory and market environments.

The future of lending isn't just automated. It's autonomous, and the opportunity to lead begins now.

Endnotes

Gartner®, Press Release, March 5, 2025 "Gartner Predicts Agentic AI Will Autonomously Resolve 80% of Common Customer Service Issues Without Human Intervention by 2029"
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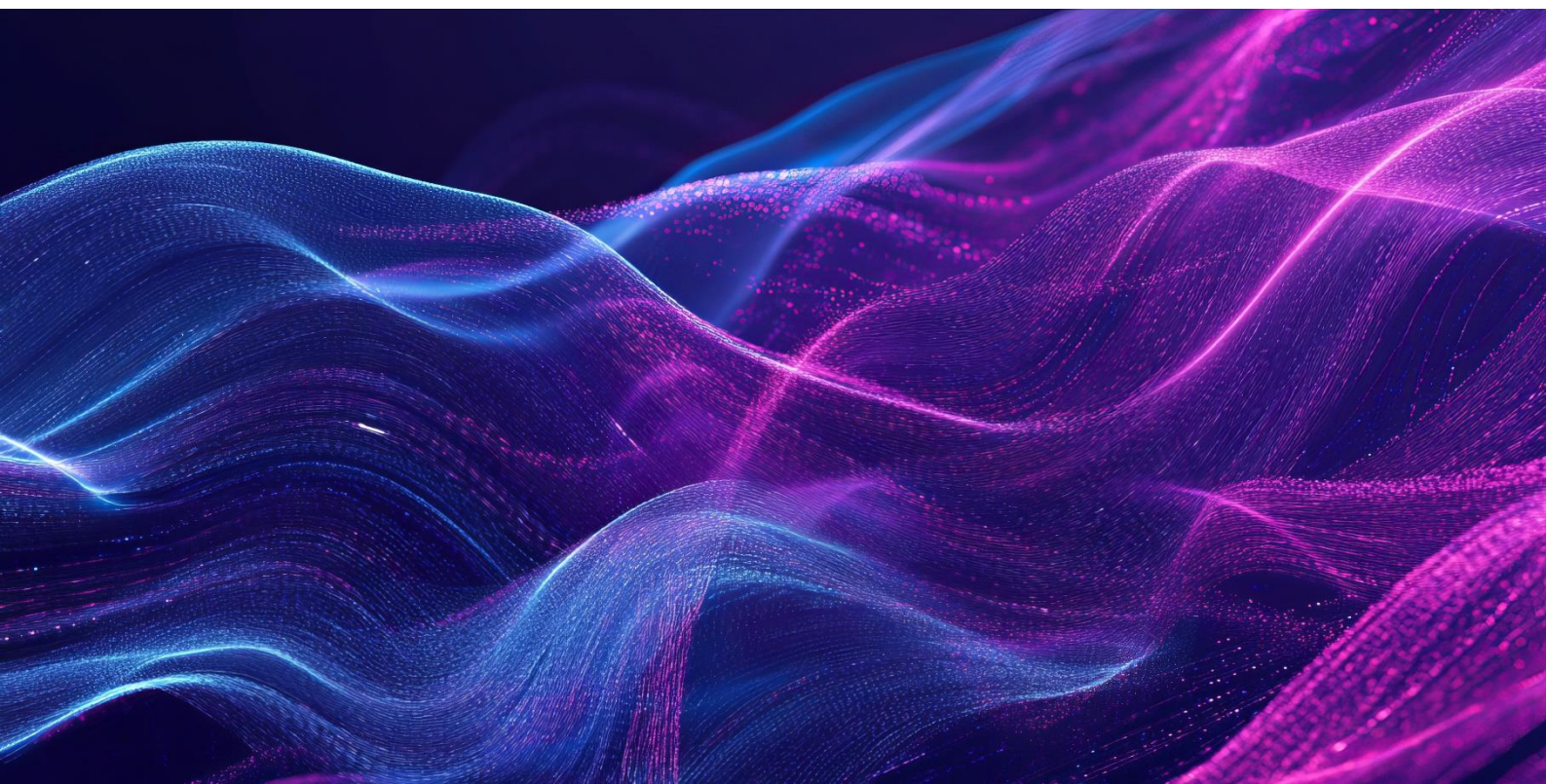
About Tech Mahindra

Tech Mahindra (NSE: TECHM) offers technology consulting and digital solutions to global enterprises across industries, enabling transformative scale at unparalleled speed. With 150,000+ professionals across 90+countries helping 1100+ clients, TechM provides a full spectrum of services, including consulting, information technology, enterprise applications, business process services, engineering services, network services, customer experience & design, AI & analytics, and cloud & infrastructure services. It is the first Indian company in the world to have been awarded the Sustainable Markets Initiative's Terra Carta Seal in recognition of actively leading the charge to create a climate and nature-positive future. Tech Mahindra is part of the Mahindra Group, founded in 1945, one of the largest and most admired multinational federations of companies. For more information on how TechM can partner with you to meet your scale at speed imperatives, please visit https://www.techmahindra.com

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