

Twimbit AI Spotlight

Insights into industry-leaders and their strategies for winning with AI

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BANK OF AMERICA



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Introduction

Bank of America (BofA), one of the world's leading financial institutions, has consistently leveraged advanced technologies to strengthen its operations, customer engagement, and market competitiveness. Its ongoing investments in digital capabilities, particularly in AI, continue to define its innovation-led strategy in a complex and evolving financial services landscape.

In 2024, Bank of America demonstrated resilience and operational strength despite global economic uncertainties. The bank reported a net income of USD 27.1 billion, a modest increase from USD 26.5 billion in 2023, reflecting a year-over-year (YoY) increase of 2.3%. Total revenue increased to USD 101.9 billion in 2024 from USD 98.6 billion in 2023, registering a YoY growth of 3.4%. This revenue boost was largely driven by the strength in consumer banking, wealth management, and higher net interest income due to rising interest rates.

As the bank navigates macroeconomic pressures and an evolving regulatory environment, its emphasis on digital transformation and AI continues to play a central role. BofA has not only enhanced operational efficiency and customer experience but has also positioned itself as a technology-forward financial institution. The deployment of AI across domains from conversational banking to fraud detection and cybersecurity exemplifies how digital innovation can be harnessed responsibly and effectively. This report delves into how AI is shaping the bank's future and where its biggest gains are being realized.

Digital and AI transformation strategy

Building a digital foundation

Bank of America's digital transformation is centered on leveraging advanced technologies to enhance client experiences, streamline operations, and increase productivity across all business units. The company has made strategic investments in digital platforms, mobile banking, AI, and cloud-based capabilities to solidify its competitive edge.

1. **Client-first digital evolution** - BofA continues to prioritize delivering a seamless, personalized digital experience. In 2024, 79% of households were actively using digital channels, with 75% of deposits and 50% of sales conducted digitally. This reflects the bank's success in reshaping customer interactions through digital-first services.
2. **Mobile-first approach** - With 48 million active mobile users and 14.3 billion logins in 2024, BofA's mobile platforms have become central to its digital strategy. The focus has been on enhancing self-service capabilities, including advanced virtual assistants and secure authentication methods.
3. **Digitization of end-to-end journeys** - The bank has digitized more than 97% of all check deposits and 94% of consumer mortgage applications. This focus on automation and frictionless processing has improved speed, accuracy, and customer satisfaction.

4. Innovation in payments and transactions - BofA's Zelle transactions grew to 1.6 billion in 2024, surpassing peer-to-peer payment expectations and enhancing digital wallet services across the client base.

With this robust digital infrastructure in place, Bank of America has embedded AI capabilities across the enterprise to maximize its business value.

Operationalizing AI at Scale

AI is integrated across BofA's operational and client engagement strategies, enabling hyper-personalization, operational efficiency, and proactive risk management.

1. Enterprise-wide deployment - AI and machine learning are embedded across business functions from consumer banking and global markets to fraud detection and compliance. This widespread deployment is coordinated through an enterprise control framework, ensuring consistency and risk oversight.
2. Focus on responsible AI - The company operates under a "Responsible AI" model, ensuring AI tools and algorithms are fair, ethical, explainable, and compliant. The bank has institutionalized a model governance framework under its Chief Risk Officer to continuously evaluate model performance.
3. Merrill and AI-powered insights - In Merrill, BofA applies AI to deliver personalized financial advice, portfolio optimization, and client targeting, helping advisors focus on high-impact opportunities.
4. Erica virtual assistant - Erica, powered by AI and natural language processing, has handled over 2.5 billion client interactions since 2018. The assistant supports transactions, insights, and alerts, enhancing digital engagement and financial wellness.

Together, BofA's digital-first foundation and AI-first execution approach position the bank as a global leader in scalable, ethical, and customer-centric financial innovation.

AI infrastructure and technology investment

Modernise infrastructure to power scalable AI

BofA's AI capabilities are underpinned by a modernized data infrastructure, cloud technology adoption, and a centralized governance model that ensures high data integrity and real-time access.

1. Cloud-native infrastructure - The bank continues its transition to a hybrid cloud architecture, enabling greater scalability, agility, and innovation velocity. Core applications are being migrated to cloud environments to support AI processing and real-time analytics.
2. Enterprise data platform - BofA uses a centralized enterprise data platform governed by stringent data quality and lineage controls. This platform ensures that AI models have access to accurate, timely, and secure data for better decision-making.

3. Security-first design - All data and AI platforms operate under robust cybersecurity protocols, including encryption, access control, and continuous threat monitoring, in alignment with the bank's overall risk posture.
4. Advanced analytics ecosystem - Teams across BofA use modern tools, including data lakes, visualization dashboards, and machine learning pipelines to extract value from vast datasets in marketing, credit risk, customer experience, and compliance.

These infrastructure capabilities create the backbone for responsible AI, but they are only as powerful as the strategic investments that fund and activate them. Bank of America's financial commitment to technology ensures that innovation moves in lockstep with operational resilience.

Technology investment as a growth lever

In 2024, the bank invested over USD 12 billion in technology, with approximately half dedicated to new initiatives and innovation. This financial commitment reflects the bank's belief in technology not only as a support function but as a core business accelerator.

Key investment highlights:

1. Breakdown of investment areas:
 - a. Over USD 6 billion allocated to new capabilities and modernization
 - b. Ongoing cloud migration to enable agile data access
 - c. AI-first approach in digital workflows and IT operations
2. Enterprise-wide adoption of AI:
 - a. More than 150 AI and ML use cases are now in production across domains such as:
 - i. Risk management
 - ii. Marketing personalization
 - iii. Loan underwriting
 - iv. Customer support
3. Cybersecurity and data resilience:
 - a. Advanced AI models are used for anomaly detection across digital channels and transaction patterns, strengthening fraud defenses.
4. Operational automation:
 - a. Robotic process automation (RPA) and AI tools streamline back-office workflows, reduce turnaround times, and free up human capacity for higher-value tasks.

By tightly coupling infrastructure modernization with strategic investment, Bank of America has built a future-ready AI environment that balances scalability, performance, and risk management across all business lines.

Top 5 AI use cases for customer experience

Bank of America leverages artificial intelligence to deliver smarter, faster, and more personalized services to its customers. Below are the top use cases where AI is transforming the customer experience and deepening engagement.

1. Personalized Customer Engagement
 - a. AI-driven hyper-personalization for marketing and engagement
 - b. Real-time credit score updates and financial health alert
 - c. Dynamic product recommendations based on behavioural patterns
2. Fraud Prevention and Risk Management
 - a. AI-powered surveillance systems helped prevent billions in fraud-related losses in 2024
 - b. Identity theft detection and real-time transaction scoring now operate across all digital interactions.
3. Credit Decisioning
 - a. Machine learning models analyse thousands of variables to assess creditworthiness with greater accuracy and fairness.
 - b. Accelerated loan processing with reduced human bias
4. Wealth Management Support
 - a. AI-driven insights power Merrill clients' investment decisions
 - b. Personalized portfolio nudges and market alerts improve client engagement and satisfaction
5. Efficient Service Delivery
 - a. AI-infused systems help process over 6 million transactions per day with minimal manual intervention.
 - b. Predictive maintenance and IT anomaly detection reduce system downtimes.

AI is deeply integrated across the enterprise, helping BofA reduce costs, improve decision-making, and deepen customer relationships.

Top 3 AI use cases for employee experience

Bank of America (BoA) strategically integrates artificial intelligence (AI) across its workforce to enhance employee productivity, streamline internal services, and personalize professional development. The bank fosters a more agile, informed, and efficient workforce through a robust ecosystem of AI-driven tools and platforms.

1. Employee-facing AI capabilities - BoA empowers its employees with intelligent systems designed to simplify work processes and support real-time decision-making:
 - a. Intelligent IT support - AI bots handle routine tech queries and software requests, reducing downtime and improving service delivery.
 - b. Workforce analytics - Predictive models identify attrition risks and recommend reskilling opportunities, enabling proactive talent management.

- c. Performance enablement - Personalized dashboards provide team leaders with live KPIs, employee engagement scores, and actionable insights to drive team performance.

BoA also utilizes feedback-driven systems to detect workflow friction points, which are used to continuously refine internal tools and platforms.

2. AI in training and development - BoA has invested heavily in preparing its workforce for an AI-powered future:
 - a. Over 46,000 employees have been trained in AI, machine learning, and automation through internal learning academies.
 - b. The curriculum includes targeted modules on AI ethics, bias mitigation, and risk governance, reinforcing responsible AI use.
 - c. AI supports personalized learning paths, tailoring training content based on role, performance, and career goals.
 - d. Additionally, AI simulates customer interactions to create immersive training scenarios, enhancing onboarding and ongoing skill development.
3. AI-driven productivity and advisory support - AI extends beyond internal operations to empower client-facing roles and boost service quality:
 - a. AI for relationship managers - Advisors leverage AI-driven dashboards that deliver real-time customer insights, behavioral analytics, and next-best action recommendations, enhancing client engagement and outcomes.
 - b. Automation of routine tasks - Intelligent automation handles repetitive operational duties such as document processing, compliance verification, and data reconciliation, allowing employees to focus on more strategic activities.
 - c. Performance insights - AI analytics help managers identify productivity gaps and recommend targeted interventions, supporting both efficiency and employee well-being.

AI governance

BoFA enforces a rigorous AI governance framework that aligns with global best practices and regulatory expectations. Its approach is grounded in transparency, accountability, and ethical deployment.

1. Governance through model risk oversight - Every AI model undergoes validation and continuous monitoring by the Model Risk Management (MRM) team, ensuring integrity, accuracy, and compliance across use cases.
2. Ethical AI principles - The bank applies fairness, transparency, and explainability guidelines to its AI development processes. Each model must meet bias mitigation standards and undergo peer reviews before deployment.
3. Cross-functional committees - AI governance is steered by enterprise-level committees, including Legal, Compliance, Risk, and Technology teams, ensuring alignment with business goals and regulatory norms.

4. AI audit and traceability - All AI decisions, particularly those affecting credit and customer outcomes, are auditable and traceable. This builds trust in automated processes and maintains accountability across functions.

Conclusion

Bank of America's AI journey exemplifies how large-scale institutions can responsibly and effectively embrace digital transformation. With a mature AI deployment model, clear ROI-driven initiatives, and a strong digital infrastructure, the bank is well-positioned to scale its AI capabilities further.

Going ahead, key focus areas include:

1. Expanding Erica's capabilities through generative AI and voice-based interactions.
2. Enhancing explainability and transparency of AI decisions to align with regulatory expectations.
3. Deepening AI use in ESG reporting, climate risk modeling, and sustainable finance strategies.
4. Strengthening cybersecurity with next-gen AI models to address increasingly complex threats.

BofA's commitment to AI is long-term and strategic. As it continues to automate intelligently, personalize deeply, and innovate responsibly, the bank is setting the standard for what an AI-powered financial enterprise can look like. With a firm grip on both performance and purpose, Bank of America is not just navigating the future, it's helping shape it.