ARTIFICIAL INTELLIGENCE: RESHAPING THE FUTURE OF ACCOUNTING, FINANCE AND BANKING

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ABSTRACT

AI technologies, including generative models, are often used in tandem with automation to handle repetitive, rules-based tasks such as data entry, invoice processing, and account reconciliation. In the accounting profession, these capabilities are transforming how financial information is processed, analyzed, and reported.

Surveys of tax and accounting firms show rapid growth in experimentation with and use of AI tech, including generative tools for research, document summarization, and drafting. At the same time, professionals remain cautious about quality, ethics, and client confidentiality.
KEYWORDS-AI, accounting, finance, banking, tax, technology

INTRODUCTION

AI in accounting, finance, and banking is like an automated autopilot for routine data entry, shifting the profession from backward-looking bookkeeping to real-time strategic advisory. [1, 2]

Key Impacts Across the Sectors

- Accounting & Auditing:
  - Automation: Machine learning and robotic process automation (RPA) handle time-consuming tasks like invoice matching, trial balance preparation, and bank reconciliations.
  - Role Shift: Accountants transition from manual data processors into strategic financial advisors who interpret live data and manage risk. Read more via the ACCA Career Guide. [1, 2, 3, 4, 5]
- Finance & Investment:
  - Predictive Analytics: Models process external market trends and historical cash flows to accurately forecast liquidity, revenue, and potential risks.
  - Algorithmic & High-Frequency Trading: Algorithms analyze sentiment and market signals at superhuman speeds to execute trades and optimize portfolios. [1, 2]
- Banking:
  - Efficiency & Operations: Full AI maturity can drive up to 15-percentage-point improvements in bank efficiency ratios, cutting costs by up to 14 p.p. and boosting middle-office productivity by 50% according to the PwC Banking AI Report.
  - Hyper-Personalization: Front-office AI tools yield up to 2x customer retention and 30% higher lead conversions.
  - Fraud Detection & Compliance: Real-time anomaly detection flags suspicious transactions much faster than legacy systems. [1, 2, 3]

Core Technologies Driving the Change

Technology	Primary Use Case in Finance/Accounting	Expected Efficiency Gain
Robotic Process Automation (RPA)	Invoice processing, report generation, routine reconciliations	Up to 50% reduction in manual tasks
Natural Language Processing (NLP)	Reading contracts, auditing regulatory filings, analyzing disclosures	Faster parsing of text-heavy standards
Machine Learning (ML)	Credit scoring, algorithmic trading, fraud/anomaly detection	~40% boost in fraud detection accuracy

Major Challenges & Risks

- Data Security & Privacy: Handling sensitive financial ledgers creates high exposure to cyberattacks and data leaks. [1]
- Algorithmic Bias & Black-Box Decisions: Difficulty in explaining how an AI model reached a specific credit or lending decision can trigger regulatory non-compliance. [1]
- Skills Gap: Professionals need training in data analytics and AI oversight rather than rote mechanical calculations. [1, 2]

DISCUSSION

IMA (Institute of Management Accountants), the worldwide association of accountants and financial professionals in business, has released 'The Impact of Artificial Intelligence on Accounting and Finance: A Global Perspective.' The report outlines how to embrace a future with artificial intelligence (AI) along with the challenges organizations can face and prerequisites needed for a successful AI integration.

As AI continues to reshape the accounting and finance profession, IMA engaged global experts and leaders in the profession to study the applications of AI and what barriers could exist to implement processes into accountants' daily work. Insights from these discussions are valuable for informing organizational strategies as leaders prepare to embark on their AI journey.

"AI is a game-changer that has the potential to empower accounting and finance professionals when it comes to data analysis, forecasting and decision-making," said Susie Duong, senior director of research and thought leadership at IMA and author of the report. "The use of AI will drive the future of the profession's growth, unlock untapped potential, and increase the value of professionals and organizations."[4,5,6]

The research for the report found that while AI will not fully replace human expertise, professionals at all levels will need to embrace and adopt this transformation and focus on technology proficiency, data analytics, critical thinking, and cross-functional collaboration. Likewise, organizations will need to foster human-machine collaboration, focusing on upskilling and reskilling team members, and creating a culture of ongoing learning to understand AI's strengths and weaknesses, steering toward its responsible and fruitful implementation.

Study participants identified four aspects of challenges associated with AI implementation, which are human, technological, operational, and ethical. Challenges related to people –

involving all levels of employees within an organization, were identified as the biggest hurdle for success of AI initiatives, according to 38% of participants.

According to a report by IBSi, A movement for responsible, ethical use of AI will begin with clear AI governance frameworks that respect human rights and values.

Adoption of AI is sitting at the intersection of innovation and trust. Yet, 76% of organizations don't have comprehensive AI policies in place. There is mostly general agreement that we need regulations/policy and industry self-policing and governance to mitigate the risks from GenAI.

We must also ensure that consumers have access to and control over their data.With the rising importance of AI systems, available public data will soon hit a ceiling and high-quality language data will likely be exhausted before 2026. Organizations need to shift to private and/or synthetic data which opens the possibility for unintended access and usage.

"As AI revolutionizes the accounting and finance sectors in the Middle East, it announces the beginning of a new era of enhanced efficiency, strategic decision-making, and professional development. This shift significantly improves the work-life balance and elevates the Middle East's position in the global economy. Embracing AI means embracing a future where learning, innovation, and ethical considerations are paramount. It's about more than technological advancement, it's about fostering a society that values continuous improvement, ethical practices, and inclusive growth."[7,8,9]

RESULTS

Artificial intelligence (AI) is redefining the future of banking. It is a profound technological advancement catalyzing structural transformation across the industry. As AI, including generative AI (GenAI), scales from experimentation to implementation to enterprise-wide reinvention, it's creating dual tailwinds directly impacting bank efficiency ratios:
Growing revenue by meeting the right customers with the right message at the right time
Cost transformation through intelligent automation and agile operations
For banking and capital markets executives, this marks a profound change where the efficiency ratio is no longer a backward-looking performance metric. It's becoming the most telling forward-looking indicator of your bank's ability to leverage AI innovation to compete, grow and endure. You've used the efficiency ratio to track costs. Now it's becoming something more — a way to measure how ready you are for an AI future. The efficiency ratio is poised to evolve into a barometer of AI maturity. Banks using AI can more effectively capture "money in motion" and anticipate customer needs at scale to grow revenue without proportional cost increases. AI agents are driving transformation across industries, helping organizations rethink their operating models by automating routine tasks and empowering teams to focus on strategic analysis. From search engine optimization to procure-to-pay workflows, AI agents can accelerate performance by cutting cycle times, tightening controls and enabling more dynamic, insight-led client acquisition.[10,11,12]

Banks that embed AI across middle and back-office functions can dramatically reduce manual workloads — reallocating talent to higher-value tasks — and modernize legacy systems while maintaining compliance and strengthening operational resilience. Let's look at how much more efficient and agile your bank could become.

The upside is big, but it comes with responsible use of AI. No, we haven't forgotten that to harvest the upside you're probably going to need to make serious investments in infrastructure, data governance and Responsible AI oversight. And your investments should be supported by a strong culture of innovation and relentless talent education. These expenditures should enable your bank to embrace longer-term agility and scalability.

Our PwC Strategy& analysis, based on a proprietary dataset indicates that institutions that fully embrace AI could drive up to a 15-percentage-point improvement in their efficiency ratio. A shift of that magnitude can reshape shareholder expectations and set a new pace of growth that can only be achieved in the AI era. The bottom line: the efficiency ratio can reflect more than efficiency; it will reveal who is winning the race to operationalize AI at scale.
From a revenue perspective, banks are already starting to leverage AI to personalize customer experiences and make digital interactions more natural. This trend will naturally grow as institutions that leverage AI deliver tailored customer experiences that unlock new revenue streams, which in turn attracts more customers.

PwC Strategy& analysis projects that banks that capture topline growth opportunities have the potential to reduce efficiency ratios by as much as 3 percentage points (p.p.), not by doing more but by working smarter. AI innovation will enable true customization at scale and drive a significant evolution across front-office functions, allowing banks to reach the right customer with the right product at the right time.[13,14,15]

AI is streamlining processes, automating routine work and eliminating inefficiencies — freeing teams to focus on higher value activities. We are seeing firsthand how this transformation is establishing a new frontier in ways of working and industry performance. One institution, for example, cited a 40% decrease in costs to verify commercial banking clients thanks to AI-driven onboarding and verification tools. We expect this cost optimization trend to continue, with banks adopting AI-driven operations experiencing up to a 14 p.p. drop in their efficiency ratio. AI can power cost reduction through next-generation efficiency and "melting" the middle office — collapsing traditional silos between front and back office to create more integrated, agile and scalable operations.

Achieving these gains will inevitably require continued investments into a company's AI "backbone." While our analysis suggests that these efforts may raise steady-state costs and temporarily increase efficiency ratios by around 2 p.p., they are critical for long-term data advantage, stronger transparency and a meaningful edge in a new race for trust and authenticity.
1. Revenue driver: Client impact and growth opportunities
AI tools are improving how teams identify high-intent prospects and enhance the precision of marketing and advisory efforts. When embedded in the banking lifecycle, these tools can boost satisfaction and retention and redefine how and where clients interact with their bank. For institutions that get this right, growth will be smarter, faster and far more personalized.

Customization at scale
Today's customer and client service is undergoing a fundamental shift as AI becomes embedded in day-to-day customer interactions. In the consumer finance space, for instance, AI chatbots sift

through internal knowledge bases, customer account data and CRM case notes and service tickets to deliver instant, accurate and personalized customer support. In asset and wealth management, several banks are already using GenAI to deliver real-time insights and build portfolios tailored to each client's risk appetite, spending habits, and long-term goals. Clients receiving the personalization they're seeking can make a measurable impact on a bank's levels of client satisfaction, engagement and retention.[16,17,18]

AI is already moving beyond suggestions to taking action, with the goal to autonomously execute tasks within human-defined guardrails. A customer's personal CFO interface, for example, would unify budgeting, borrowing, investing and insurance in one seamless conversation. The personal CFO then crafts a tailored portfolio or submits a micro loan application after the customer taps to approve. And as a client searches flights to Italy, the same digital agent automatically completes a travel rewards credit card application and issues a digital card immediately, calibrated to the client's expected spending. In the background, autonomous AI agents can watch the stock and bond markets and draft orders, waiting for customer confirmation to execute trades. These capabilities remain in limited pilots today, but they paint a picture of banking becoming personal again, prompting interactions that feel proactive, deeply personal and, at the same time, almost invisible. Together, they can turn money management from a task into an intelligent service that benefits financial wellbeing.

How AI shapes client impact and growth:
AI embedded in everyday platforms: Banks integrating AI tools into nonfinancial apps like travel or telehealth platforms, can trigger financial offers such as credit card approvals and emergency health funds based on real-time needs — without the customer having to visit the bank's app.
Proactive financial decision-making: AI anticipates needs before they arise, such as offering student loans when users research colleges, continuing the shift to predictive engagement.
Lifestyle-based financial planning: AI contextualizes spending and savings patterns to deliver personalized financial advice.
Banks already use AI internally to transform how they identify prospects, engage clients and improve sales and marketing efforts. AI assistants help relationship managers prepare for client meetings by surfacing client-specific insights, recent transactions, earnings data and product usage trends. In sales and advisory, AI tools synthesize large volumes of deal, market and behavioral data to build personalized outreach campaigns and product proposals that resonate with client needs. These tools are increasing win rates, speeding up sales cycles and deepening client relationships, without scaling human headcount.

In the coming years, we expect AI to become the nerve center of front office productivity, reshaping how bankers work and a bank's growth rate. Intelligent agents will support real-time targeting and offer creation and autonomously identify high-intent opportunities across channels and push dynamic content based on customer behavior, context and preferences. Marketing's calendar-based campaigns will shift to adaptive, AI-driven engagement strategies that learn and adjust in real time. Relationship managers will spend more time creating value, backed by AI assistants that act as real-time research assistants that gather data, compliance checkers and strategic thought partners to identify which clients are more profitable and what products could be right for their portfolio. The future front office is faster, more precise and more responsive, with AI acting as the fuel powering a revenue growth engine.

AI already plays a transformative role in how banks run their internal operations, from streamlining repetitive tasks to enhancing the way teams access and act on information. In the future, AI tools will likely lay the foundation for faster and more resilient operations by unlocking more capacity, allowing banks to reduce friction, improving speed and freeing up talent for higher-value work.

Next-gen efficiency
You may already be using AI to streamline tasks and reduce turnaround times from hours to minutes. Examples include drafting internal documentation, generating deal summaries and translating automatically refactoring legacy code into modern architectures. Additional efficiency gains come from automated workflows embedded into key operational functions, reducing dependencies on legacy systems while enabling faster response times. For instance, some institutions are using AI to triage and route internal requests, flag anomalies in real time and accelerate cross-functional coordination, all of which free up talent to focus on strategic priorities. But what comes next is bigger: full-scale reinvention of how work gets done.

Looking ahead, AI will redefine how banks scale operations. Not by replacing people, but by working alongside them. Banks can deploy AI agents across their infrastructure to continuously monitor processes, flag issues, and recommend actions in real time. These agents don't just execute tasks; they collaborate with teams to identify opportunities and accelerate decisions. To enable this shift, banks need modular, interoperable systems that allow AI to plug into existing platforms and evolve quickly, without costly full-stack overhauls. Human oversight remains critical, as operations professionals shift from task execution to becoming managers of AI agents: supervising performance, managing exceptions, and driving continuous improvement.

This new model of banking goes beyond simple automation. It leverages AI agents as adaptive performance engines: automating routine work, orchestrating complex processes, and positioning people where they create the most value. Together, this human–AI collaboration enables banks to compete more effectively in an AI-driven economy.[18,19,20]

How AI shapes next-gen efficiency:
Autonomous operations at scale: AI agents monitor activity, trigger workflows and escalate exceptions in real time, eliminating bottlenecks and reducing manual intervention.
Modular, AI-ready infrastructure: API-first architectures allow banks to embed AI across legacy systems, enabling faster upgrades, better interoperability and scalable innovation.
AI-augmented workforce models: Talent shifts from task execution to AI governance, model oversight and exception management, unlocking productivity and organizational capacity.

CONCLUSIONS

AI is reshaping the middle office by automating time-consuming, manual tasks that traditionally sit between front-office action and back-office execution. Current use cases include banks piloting AI agents to reconcile trades in real time, validate regulatory data submissions and flag risk thresholds as they approach. GenAI helps simplify documentation workflows, such as model risk write-ups or internal audit narratives, while orchestration tools route exceptions and escalate only when human review is needed. As a result, banks are reallocating talent from repetitive

checks to higher-value oversight and analytics roles, streamlining operations without compromising control.

What's happening today only scratches the surface of what's possible. Soon the middle office will feel less like a set of functions and more like a digital fabric that watches every transaction, learns from patterns and reacts in nearly instantaneously. Intelligent systems share context across risk, compliance and operations teams, giving instant insight into exceptions, exposures and bottlenecks. Tasks, such as onboarding checks, profit-and-loss attribution and trade support, can be automated, with AI not only spotting anomalies but also suggesting fixes. As governance and explainability frameworks mature, middle-office professionals spend their time supervising AI-enabled workflows, refining escalation rules and designing exception processes.

How AI shapes the middle office:
AI-driven exception management: Routine middle-office tasks like trade reconciliation, onboarding checks and P&L attribution are automated, with AI surfacing and triaging exceptions in real time.
Integrated risk and compliance orchestration: Intelligent systems break down silos across operations, compliance and risk, delivering unified, real-time oversight and faster responses.
Human oversight of AI logic: Middle office roles shift to supervising AI workflows, refining escalation paths and enabling transparency and control.[20]

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