

# Opportunities for Generative AI in Financial Services

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# Opportunities for Generative AI in Financial Services

## Topics

- Why will generative AI be crucial to financial services over the next decade?
- Which areas are seeing an explosion in the use of Gen AI?
- What are the biggest opportunities for your company to explore in Generative AI?
- How have regulators responded?
- And what will Visa’s role be in the development of Gen AI in financial services?

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## After over a decade of methodical growth and continual refinement, **generative artificial intelligence’s moment in the tech industry spotlight has come.**

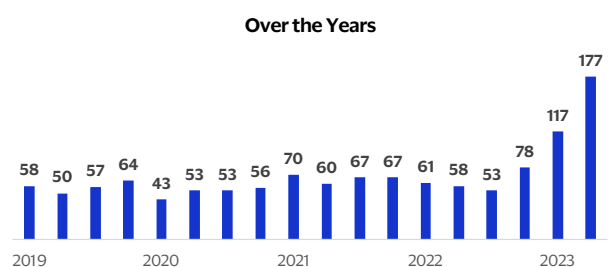
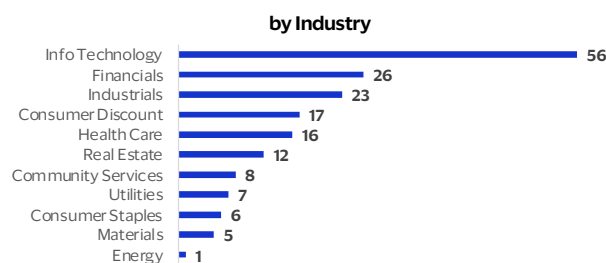
The emergence of competent large language models, which accurately mirror regular communication, have ignited a multi-industry arms race to incorporate AI across the board into product offerings.

In this paper, we’ll discuss the exciting emerging applications of generative artificial intelligence (Gen AI), as exemplified by cutting-edge banks and fintechs. We’ll evaluate how fintechs and banks are incorporating Gen AI differently, based on each of their relative strengths. We’ll explore areas for Gen

AI that are still underexplored and present future opportunities. And we’ll evaluate the response from regulators, and potential implications for banks and fintechs.

AI has become a popular topic for tech leaders in 2024, as companies reconcile the future promise of AI with the product realities today. Companies are citing AI in their future plans at a record rate, a 10-year high water mark, with financial services and information technology [leading the way](#):

# of S&P 500 Companies Citing AI on Qtrly Earnings



## But why has Gen AI become a popular topic only over the past couple years, when AI has been used by financial services providers such as Visa for over 30 years in areas like fraud management and payments?

### The biggest breakthrough in Gen AI

– a technology that traces its lineage [as far back as the 1960s](#) – came from the development of **Generative Pre-trained Transformer (GPT) models built by OpenAI in 2018**. Since then, as GPTs have improved, companies in many sectors have rushed to evaluate how to incorporate them. Banks and fintechs both see the potential to leverage language models to reduce manual work, deliver new product offerings to customers, and improve efficiency across the board.



In the [words of Jon Lear](#), the founder of Fintech Meetup, **“AI and deep personalization of financial services and customer experiences is much closer than any of us had thought possible. Historically, we’ve seen growth in tools like chatbots, but leveraging the huge amounts of data stored in financial institutions and exposing them to LLMs is going to make for a much richer and more deeply personalized set of experiences. It will take time, but Pandora’s box has been opened and customer expectations and demands are rising inexorably.”** This is why, 6 years after the release of the first GPT model, Gen AI is just today capturing the attention of financial services and generating industry pressure to evaluate and develop new product offerings.

Fintech and financial services providers have already begun to deliver AI products, focused on internal process optimization, digital engagement, automated workflow management, and predictive insights and analytics across product verticals.

It is Visa’s and This Week in Fintech’s belief that machine learning and AI are valuable, enduring technologies for fintech, which will lower costs, increase financial services customization and effectiveness, and open up new product possibilities. While Gen AI may not transform financial services overnight, we believe that it will improve products in a way that enables financial institutions to deliver more efficient and effective service offerings.

Visa sees generative AI as a transformative force in the world of commerce and payments, enabling faster access to critical information, better decision-making, and newly unlocked potential. Visa looks forward to helping bring this future to life, through initiatives such as [its \\$100 million Generative AI Fund](#). As a network-of-networks, Visa continues to actively explore the adoption of Gen AI in financial services in many areas, including:

- Implementing industry-leading standards for data management;
- Providing key insights using Gen AI in areas like transaction authorization, fraud, underwriting, and payments;
- Helping banks more effectively manage customer interactions using Gen AI;
- Facilitating payments for new and emerging commerce primitives, like social commerce, in collaboration with e-commerce and social media providers;
- Co-developing new products with bank partners that compliantly leverage Gen AI; and,
- Bringing together relevant industry partners to bridge disparate data sets and develop novel use cases for Gen AI using Visa’s network signals, all with informed customer consent.

But there are still many open questions to be answered:

- Will generative AI provide an enduring edge to financial services providers, or become a commoditized 'table-stakes' feature?
- How will regulators respond and limit the use of generative AI in financial services?
- And will there still be financial products that function better without generative AI?

In this paper, the banks that stand to benefit the most from Gen AI will be those with:

**01.**  
**Large amounts of customer data.**

**02.**  
**High compliance standards and a track record of effective monitoring.**

**03.**  
**Forward-thinking product teams and partnerships with innovative fintechs.**

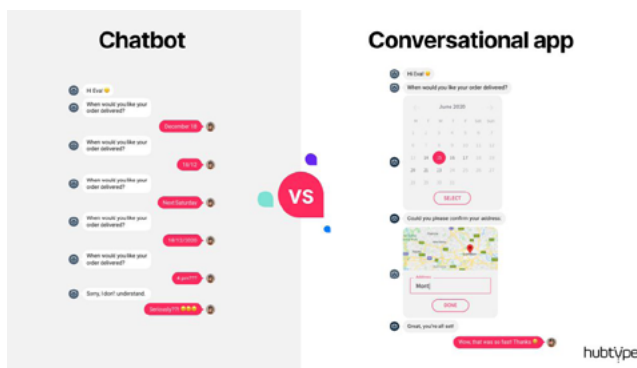
## How are financial services providers leveraging AI today?

### In Fintech

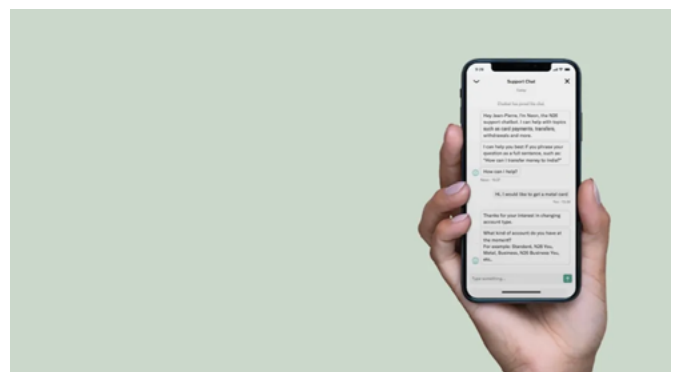
Fintech companies have traditionally fought an uphill battle against banks and established non-bank financial services providers. Fintechs are more thinly-capitalized than banks, with newer, untested products, and pre-profitable businesses. But their nimbleness, lack of code debt and bureaucracy, relative lack of regulation, and digitally-native approach to financial services provide them with considerable advantages.

When it comes to AI implementation, the key advantage of fintechs has been the ability to move quickly to incorporate and launch new features in a

bid to attract customers away from legacy providers. Fintech early use of Gen AI has focused primarily on external (end-user facing) product development and growth. Customer-facing features like [conversational apps](#) to replace traditional chatbots, [accounting copilots](#), [expense management tools](#), and [algorithmic investing tools](#) are some of the earliest examples of fintechs' bid to win over customers by weaving AI into their existing value propositions.



[Chatbot vs. conversational app distinction](#)



[A history of Neon, neobank N26's customer service chatbot.](#)

## In Banking

Traditional financial institutions deal with a distinct set of advantages and challenges, compared to fintechs. They benefit from orders of magnitude more scale; as an example, while Nubank, the largest neobank in the world, has [around \\$10 billion](#) in customer assets, JP Morgan, the largest consumer bank in the world, has approximately [\\$3 trillion](#) in assets under management. Banks also benefit from the low cost of capital provided by their access to nearly-free customer deposits, from their ability to operate as licensed financial institutions with a clear regulatory regime, from their brand trust and franchise equity, and from their large workforces.

Some of these advantages, however, bring with them their own challenges: a clear regulatory regime for banks also implies much higher compliance costs and overhead, larger penalties for compliance failures, and more constrained product innovation. The size and scale of bank workforces introduce bureaucracy, make nimble decision-making more difficult, and create costs that scale linearly with customers and assets.

As discussed in our November 2023 paper, [What lies ahead for bank and fintech partnerships?](#), banks have focused their early efforts in Gen AI addressing different needs than fintechs: Rather than focusing on primarily customer-facing products, banks are leveraging machine learning and Gen AI to make their

back-office processes more efficient, lower costs, automate previously manual jobs, improve regulatory compliance, and minimize the risks inherent in serving such a large customer base. Notably, while some of the back-office and CFO suite Gen AI applications that banks are leveraging are built internally, many are sold to them by fintechs focused on building better back-end solutions for institutions.

The focus on risk-avoidance and cost-cutting results investment into products like [AI-driven KYC checks](#), algorithmic [underwriting](#), Level 1 customer management [voice](#) and [chatbots](#), [portfolio monitoring](#) and [fraud mitigation](#) tools, and automated [compliance management](#) platforms.

The B2B fintechs looking to sell their products to banks have taken a cue from this focus, as reflected by platforms like [Hyperplane](#) and [Casca](#). Hyperplane focuses on consolidating customer information across siloed bank databases in a compliant way, to help banks invest in more well-tailored products. Casca provides a loan management-specific conversational AI to help existing bank lending teams collect information and process loan applications more efficiently and compliantly.

## Current examples of Gen AI use cases in financial services

01.  
**Consumer Financial Management**

02.  
**Fraud, Risk, and Compliance**

03.  
**Accounts Receivable / Accounts Payable**

04.  
**Customer Support:**  
Chatbots and Conversational Tools

05.  
**Real-Time Decision-Making**

06.  
**Investing**

07.  
**E-Commerce Enablement**

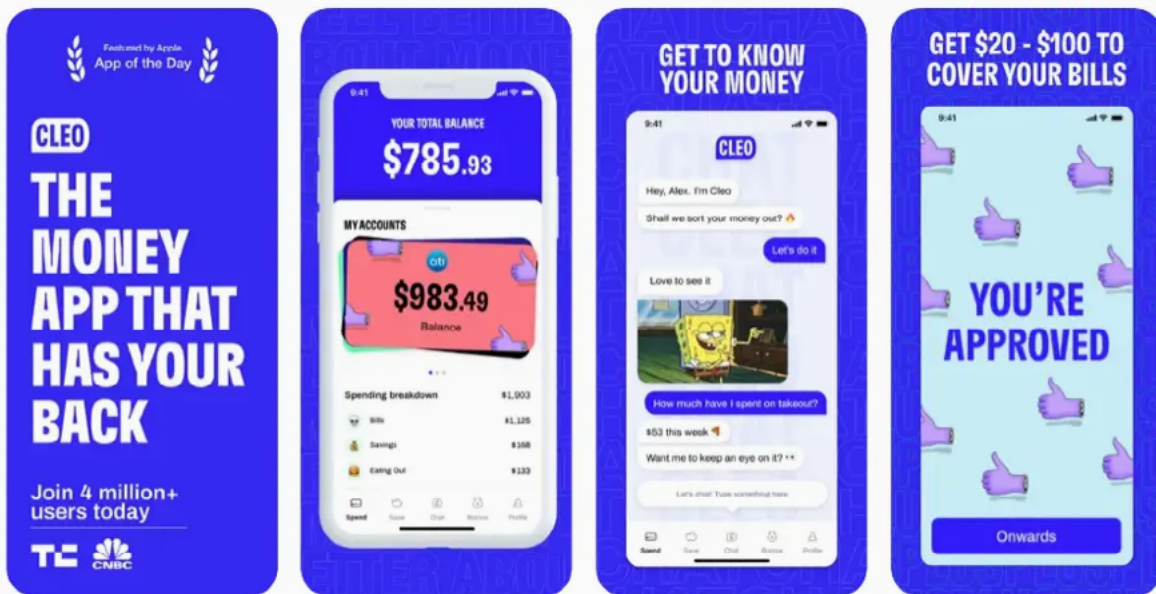
08.  
**Employee Financial Services & Benefits**

01.

# Consumer Financial Management

Fintechs have been quick to leverage Gen AI to build automated versions of products that previously required either customers or service providers to manually deliver insights, decisions, and recommendations. As Matt Brown, fintech investor at Matrix Partners and former Head of Product at Afterpay, writes in his [Fintech from first principles](#), most of financial services can effectively be broken down into four primitives: pay, invest, borrow, and insure. The most intuitive applications for AI are across these primary consumer finance use cases.

One example is budgeting and financial management. In Plaid's recent [Fintech Effect 2023 Survey](#), over half of the consumers surveyed said that budgeting advice and subscription management were among the top financial use cases for AI that they would be interested in. Providers like [Monarch Money](#), [Copilot Money](#), and [Recurly](#) focus on leveraging machine learning to help customers more effectively budget, build wealth, and manage recurring costs. [Cleo](#), in the UK, uses a text-based conversational AI assistant to help consumers manage week-to-week expenses:



Another application is the use of AI systems to analyze customer portfolio data and provide personalized financial advice and investment recommendations. Robo-advisors have traditionally used machine learning algorithms to automate investment advisory services. These platforms create and manage diversified portfolios based on an preferences. [More Wealth](#), [Sofi Invest](#), and [Ellevest](#) are all examples of [consumer-facing AI-first robo-advisors](#) and wealth management tools. In these products, the job of AI is to analyze historical and real-time market data, helping users make informed

decisions by predicting market trends, identifying investment opportunities, and assessing potential risks.

More service providers will begin to offer AI-enabled consumer banking services through third-party providers like Kasisto, which offers [a large language model purpose-built for investing and banking](#), to help financial services providers transition away from traditionally manual service-driven products to automated ones.

02.

# Fraud, Risk, and Compliance

Banks have long used algorithms to analyze patterns and detect anomalies in their data in order to identify potential fraudulent activities in real-time. The benefit of machine learning models is that they can continuously learn and adapt to new fraud patterns. Financial fraud is traditionally a cat-and-mouse game, where sophisticated fraudsters continually refine new exploits in order to target banks and fintechs. AI is changing the balance in favor of financial services orgs.

As fintech investment bank FT Partners [notes](#), “In the race to counteract financial crime, fraud prevention businesses have developed advanced capabilities using machine learning and artificial intelligence to power intelligent biometric data capture, behavioral analytics, mobile ID, document verification, and much more.”

Some good examples of companies building in this space are [Minerva](#), which uses AI to automate account onboarding at financial institutions and combat money laundering and [Sardine](#), which monitors real-time transactions fraud and allows companies to create workflows around suspicious behavior using [Finley, its](#)

[Gen AI copilot.AI](#) is increasingly being used to monitor and ensure compliance with continuously-evolving financial regulatory requirements. This is not just a recent development: In 1993, [Visa became the first network](#) to deploy AI-based technology for risk and fraud management, pioneering the use of AI models in compliance.

Automated systems can analyze vast amounts of data to identify and address potential compliance issues. In 2023 alone, [the US SEC](#) filed 784 enforcement actions against financial services institutions, obtained orders for nearly \$5 billion in financial remedies, and distributed nearly \$1 billion to harmed investors.

Platforms like [Themis](#) are building AI-enabled workflow automation tools to help banks more easily monitor partners and customers, while [Compliance.ai](#) provides a regulatory compliance and risk management solution with purpose-built models to automatically monitor the regulatory environment for relevant changes, then maps them to banks’ internal policies, procedures and controls.



03.

# Accounts Receivable/ Accounts Payable

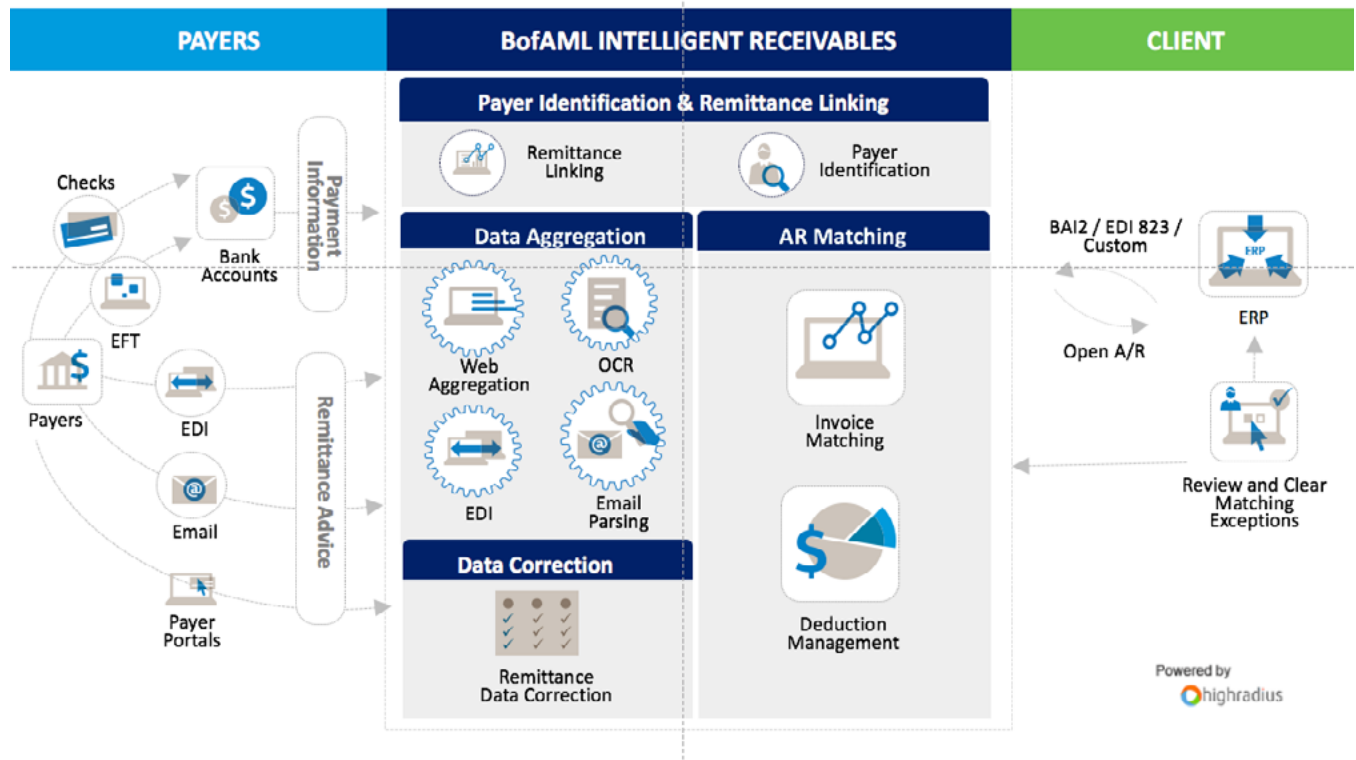
A relevant B2B use case for finance artificial intelligence is in accounts payable and receivable automation.

[Kensho](#) and [Alphasense](#) are two of the major AI application developers specifically targeting financial services firms with algorithms designed for better payment collections and distribution. [Versapay](#) recently acquired AI developer Dade Systems to power AR workflows with machine learning insights.

the probability of a customer paying an invoice on time, and estimating the probability of a customer dispute based on prior interactions and payment data.

Bank of America [provides a detailed illustration](#) of how their AP / AR product, powered by autonomous finance and treasury fintech [HighRadius](#), uses AI to improve both processes:

The opportunities for AI to improve AP / AR extend to executing automated cash application processes, more accurately, projecting cash flow and working capital levels from recent invoice payments, predicting





04.

## Customer Support: Chatbots and Conversational Tools

One of the richest categories of workflow automation is in customer support and management at banks. AI-powered chatbots and virtual assistants can be used to answer customer questions, provide instant responses to account queries, guide customers through processes like new account setup, and handle routine disputes, and escalate at the right time to a Level 2 human-in-the-loop CX team.

According to the CFPB, **“Approximately 37% of the United States population is estimated to have interacted with a bank’s chatbot in 2022.”**

The implementation of AI tools for customer support

also more effectively ensures compliance with policies and procedures, by mitigating the risk that human support staff will deviate from CX scripts. Business process outsourcers are beginning to offer more AI-enabled services, alongside AI-native customer support providers like [Enterprise Bot](#), which builds white-label chatbot interfaces for banks to offer AI assistants (below). Casca is another example of a conversational AI built specifically for the use case of bank loan applications – but one which can be broadened to support more customer interactions over time.

### Enterprise Bot



Hi Sam, I'm Enterprise Bot's virtual assistant. How may I help you?

I lost my card

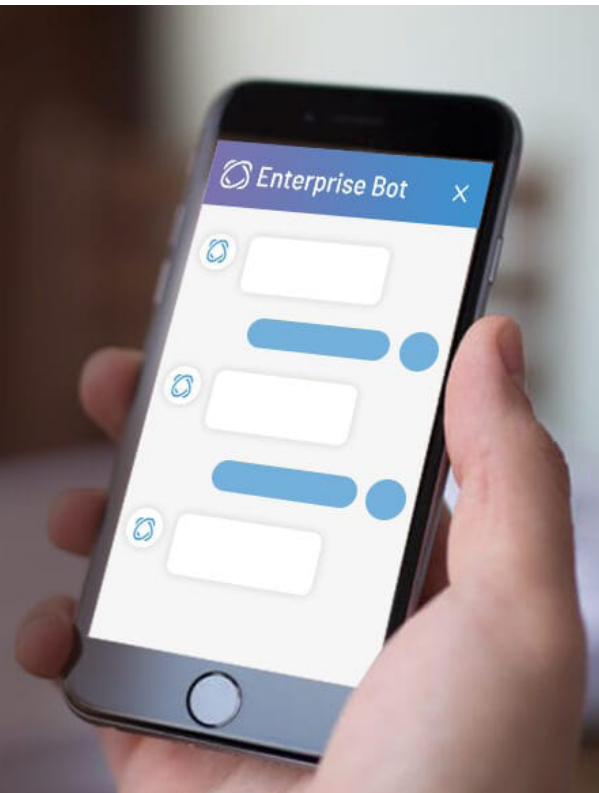


I'm sorry to hear that. Should I go ahead and block your card for you ?

Yes, please



Thank you for the confirmation. I have blocked your card successfully.



One of the most well-known AI customer support chatbots in US financial services is [Bank of America’s Erica](#), which recently [passed 1.5 billion lifetime interactions](#) with over 37 million customers.

Customers now engage the chatbot for 60% of questions, continually giving it powerful data to improve its interactions and effectiveness.

05.

## Real-Time Decision-Making

For lenders, AI can be employed to analyze large datasets – including non-traditional data sources that are normally difficult for human underwriters to analyze – to assess credit risk more accurately. In many cases, machine learning models can better predict an individual’s creditworthiness based on various factors, while excluding [suspect classification](#) factors that could inadvertently trigger regulatory penalties for disparate treatment.

[Prism Data](#) is an example of a software platform that uses AI, trained against bank transaction history data, to create credit underwriting models for consumer credit, which it then [white-labels for banks](#) to complement their own underwriting. The use of machine learning and cash-flow underwriting in lending [has been shown](#) to reduce losses for lenders, while also enabling them to reach more traditionally underserved populations.

AI also enables banks, fintechs, and FIs to provide [real-time payment authorization](#) or declines in transaction flows, ingesting a large amount of data to verify the authenticity of a transaction. Factors like device location, type, and ID, behavioral metrics, user

preferences, and transaction history can be used to prevent or authorize a transaction in real-time.

As [Aeropay](#) Chief Revenue Officer Andrew Gleiser [notes](#), “The folks that invest heavily in AI and use it to improve their authorization rates in the payment space are doing very well. Improving authorization rates by 10%, for example, ends up hitting the top-line revenue of both the processor and their customer.”



06.

## Investing

In addition to building better consumer investing and wealth management applications, financial institutions are increasingly using AI to develop algorithms for their own proprietary trading and market analysis. Machine learning models can make rapid decisions based on real-time market data, to help wealth management teams and traders adjust their portfolios. Products like [Coinrule](#) allow firms to create automated trading strategies across exchanges, [Trading Analyst](#) uses machine learning to evaluate options trading signals, and [QuantConnect](#) allows in-house developers to

design, backtest, and deploy algorithmic trading strategies.

Natural language processing tools like [Dow Jones’ Developer Platform](#) are used to analyze news articles, social media, and test data to gauge market sentiment. Hedge funds and trading desks can then use this information to adjust strategies and assess the potential impacts of market sentiment on their investments.

07.

## E-Commerce Enablement



FT Partners [notes](#), “Artificial intelligence is paving the way of the future when it comes to FinTech and ECommerce. AI-driven machine learning algorithms are personalizing the online shopping experience for consumers through predictive analytics, automated decision-making processes, and enhanced fraud detection capabilities ensuring a seamless and authentic user experience.”

E-commerce marketplace Amazon is [incorporating Gen AI](#) across its consumer-facing commerce offering; enabling Alexa to process voice orders, allowing

merchants to leverage Gen AI to improve product listings with language suggestions, pulling out relevant information from customer reviews, and providing automated advertising guidance. As social commerce grows as a channel for product discovery, platforms like Pinterest are adding [new AI enablement features](#) while [Meta’s Facebook and Instagram shops help](#) merchants identify untagged items and suggests tags based on their product catalog and help shoppers hone in on specific product characteristics.

08.

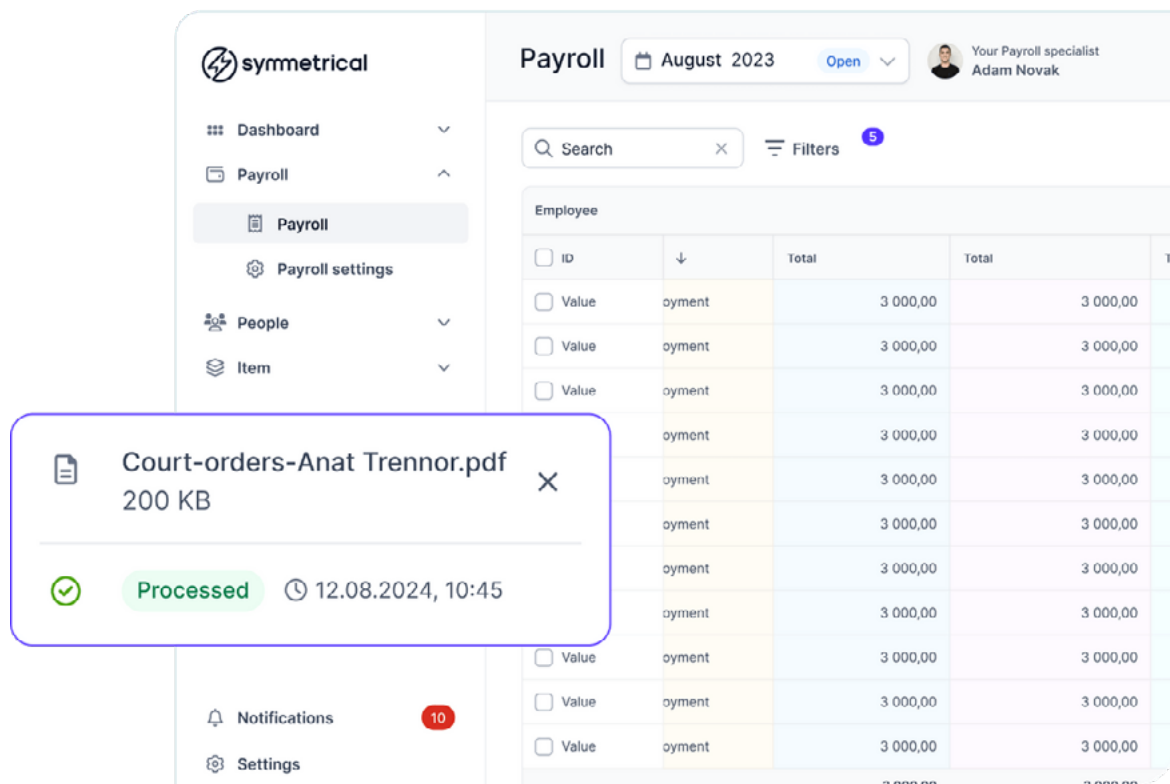
# Employee Financial Services & Benefits

Another area ripe for AI innovation is employee management, extending from payroll to benefits. As future-of-work advisor [Anita Lettink](#) notes, **“AI can streamline the process of calculating and disbursing employee salaries. [...] Advanced algorithms and machine learning techniques can be leveraged to track employee time and attendance [and] play a critical role in maintaining compliance with payroll regulations and tax requirements. AI can streamline the management of employee data related to payroll, such as employee profiles, tax information, bank details, and benefit programs [and] can be used to detect anomalies and potentially fraudulent activities within payroll systems.”**

The primary pitch of AI payroll platforms is that they can reduce the time and headcount required

to manage employee payroll, while providing new features such as real-time earned wage access while catching and reducing fraud, as seen in the value proposition that [Symmetrical AI makes to its customers](#).

Benefits management platform [Nayya](#) is a good example of a robo advisor-type product that makes personalized benefits [recommendations](#) that take into account an employee’s life stage, financial status, and medical history. In addition to helping companies lower costs by optimizing their payroll management, products like Nayya’s benefit the partnered insurance carriers and brokers by increasing the rate at which employees purchase their products with a better understanding of their benefits.



## Which areas for AI are still underexplored?

Even with the influx of generative AI, natural language processing, large language models, and machine learning into so many aspects of fintech, there are still further areas for growth that remain unexplored.

### Unbanked / Underbanked Financial Services

While AI models can read large datasets to bring down credit losses, as previously discussed in our section on lending, extending more products to unbanked (no bank history) or underbanked (thin access to products) customers remains an area for growth. These customers tend to yield less per account to banks than high net worth or premium customers, and they tend to [require offline banking](#) relationships via infrastructure such as branches or ATMs, which means that [they are normally late targets](#) for innovation in digital banking. Many of these customers turn to [alternative financial services providers](#) rather than banks – such as check cashers or payday lenders – in order to access financial services, and these players normally lack the technology and incentive to offer AI-driven products.

Lending and banking to low-and-moderate income households tends to be very closely regulated in order to prevent abusive practices, which makes the introduction of tools like Generative AI risky due to the class of regulations (such as the Truth In Lending Act and CARD Act) meant to protect poorer, less financially fluent consumers. Many lenders have not yet introduced large datasets, which could improve lending outcomes, because it is possible that the addition of those data would run afoul of [disparate treatment](#) and [suspect classification](#) regulations.

However, this regulatory scrutiny also creates significant opportunities for Gen AI. If machine learning can be leveraged to better assess creditworthiness or verify identity, without succumbing to the human biases that tend to interfere with manual underwriting, it could actually improve these banks' regulatory compliance while expanding access to credit. AI could

be used to evaluate banking and lending portfolios in order to ensure that banks were complying with their local lending requirements under legislation like the Community Reinvestment Act. It could help FIs avoid unintentional outcomes like mortgage redlining, which still [leads to large regulatory fines today](#). The same challenges that banks and fintechs face in expanding financial inclusion could be opportunities with Gen AI.

Fortunately, some fintechs are beginning to experiment with leveraging Gen AI to bring products to more thin-file consumers. [Scienaptic Systems](#), which builds a “self-learning” AI-powered credit decisioning and underwriting tool for banks, [recently partnered with Fiserv's Loan Director](#) to give more bank customers access to fair, inclusive credit. [Prism Data](#) – which spun out of Petal, a credit card for underbanked consumers – and [Pave](#) are both building [transaction-based intelligence](#) in order to [enable FIs to expand credit](#) to more consumers from cash flow data. [DubPrime](#) is building an “AI underwriting as a service” platform to underwrite non-traditional workers like gig workers, using signals that banks and even most fintechs don't ingest, in order to allow them to lend to customers previously perceived as ‘high-risk or thin-file.’

The problem of unbanked and underbanked consumers effectively comes down to risk: fintechs, and moreso banks, are limited in how far out along the risk spectrum they can allocate their capital to new customers. Factors like lack of a prior relationship, thin files, and online vs. in-person transactions exacerbate perceived risk. Using machine learning and Gen AI, banks and fintechs can more aptly score and navigate risk, and serve more customers as a result.

## Retail Customer Interaction and Escalations

Generative AI and natural language chatbots have become more widespread for customer support through channels like text, online chat, and email, but – so far – are less relevant for in-person interactions. At bank branches and ATMs, AI has not yet proven fluent enough in human interaction to replace tellers or simple decision menus for cash deposits and withdrawals.

And while language models have provided banks and fintechs with the ability to develop conversational tools for formulaic support questions – the simplest questions known as Level 1 support – NLPs and Gen AI have not yet replaced the more nuanced support flows that require escalations to reps and managers. Level 2 customer support tends to deal [with more nuanced, case-specific escalations](#) into in-depth customer problems that require non-standard responses, and [Level 3 requires subject matter experts](#) to figure out the toughest customer needs, usually those that deal with a tech failure or legal matter.

This area is a **massive opportunity** for the use of Gen AI in banking. We’ve already discussed how banks employ conversational models and chatbots to help customers answer routine questions and look up basic account information. Escalations (L2 and L3) tend to be [routed to higher-salaried customer and operations employees](#), because the interactions carry higher risk, and improper escalations are a large component of customer service costs at banks. As FIs train their chatbots on real L2 and L3 customer service interactions, Gen AI will be able to progressively chip away at more support functions.



This will benefit banks in two ways:

01.

**Bringing down the total number of person-hours spent managing customer complaints and the total amount of support staff needed to address a given quantity of customers.**

02.

**Making the remaining support staff more effective and efficient at their jobs: Helping surface relevant information, taking detailed notes, documenting appropriate data, logging incidents for technical teams, etc.**

Customer support is very heavily regulated in financial services, as providing inaccurate information can run afoul of [UDAAP](#), [TILA](#), and similar rules, which leads financial institutions to prefer formulaic support flows over large language models that can occasionally ‘hallucinate’ or give the wrong answer. Today, GPT-type Gen AI responses are stereotypically [known for being confidently wrong](#) when they don’t have the answer, which for banks carries the risk of financial penalties. As language models become more nuanced and the error rate in customer support functions – from L1 to L3 – gets lower, the risk/reward calculus will change for banks and it will become optimal to route progressively more support functions to AI and away from people (who, after all, can also make mistakes).

## Internal Process Optimization

Simple workflows, such as the compliance and lending workflows previously discussed, have been the focal point for machine learning algorithms, but higher-level business practices such as internal consulting, people management, cost-cutting at banks, strategic planning, and product roadmapping, have not yet become the focus of AI.

A widely-quoted belief is that AI will compete for white-collar (or services) jobs in fintech, but these tend to be the lower level information services jobs focused on manual, repeatable processes, rather than the roles that require more creativity or strategic vision.

Even so, products like [Lucite AI](#) are gradually recreating practices like the creation of investment banking and equities research pitch decks, which were previously

thought to require summarization and creativity beyond the comprehension of language models.

[Runway Financial](#) is another example of a startup building a Gen [AI-enabled business management tool](#) to enable companies to better model, plan, and align their businesses. Runway's features include automated pulling of actual business details in real-time, alignment of company plans to discrete quantitative goals, and "what if" scenario planning – all functions that were previously considered the sole province of leadership and strategy teams.

It is probably only a matter of time until internal consulting and strategy projects are significantly augmented or entirely provided by AI.

## International Adoption

The last underexplored area for opportunity in financial services AI is the move from major metro areas and countries with large R&D workforces to more peripheral regions without the same capacity to invest in AI transformation. Within the US, [Brookings research has found](#) that AI research and implementation "is highly concentrated in a short list of "superstar" metro areas and "early adopter" hubs, often arrayed along the coasts." As Virtusa's Executive Vice President of Global Digital Solutions, Frank Palermo [notes](#) on the [the regional gap in AI adoption](#), different countries have different regulatory approaches and focus areas (such as Dubai's focus on education, transportation, energy and space), which create different standards and outcomes for AI adoption regionally.



## How have regulators responded to AI in fintech?

### Different countries have had different regulatory approaches to AI.

Even within the US, financial regulators have responded to the growth of AI in financial services with a patchwork of rulemaking and guidance narrowly concentrated in their areas of oversight.



Regulatory responses have broadly fallen into three categories:

01.

**Providing guidance for the use of AI in financial services.**

02.

**Monitoring and enforcement actions to restrict disapproved uses.**

03.

**Rulemaking on permissible uses of AI**

## Guidance

In the OCC's [Semiannual Risk Perspective for Fall 2023](#), the regulator noted that there is promise to fintechs' and banks' use of AI, which "may reduce costs and increase efficiencies; improve products, services, and performance; strengthen risk management and controls; and expand access to credit and other banking services." The agency also [noted](#), however, that "Many risks can arise from all types of AI, such as lack of explainability, reliance on large volumes of data, potential bias, privacy concerns, third-party risk, cybersecurity risks, and consumer protection

concerns. The use of generative AI may pose additional risks including providing inaccurate responses that appear credible." The OCC [laid out supervisory principles](#) that it expects banks to follow in how they leverage and interact with AI, including model management, third-party management, and new compliance management policies.



## Monitoring and Enforcement

As previously discussed, financial fraud is always a cat-and-mouse game that requires banks and fintechs to continuously innovate as fraudsters become more sophisticated. The news of the last year has been full of [stories of financial fraud using Gen AI](#) to create realistic P&Ls and legal documents, fake IDs, false identities, and even deepfakes of company executives. In one recent case, a Gen AI scam led to a finance worker in Hong Kong erroneously [paying out \\$25 million](#) to fraudsters posing as the company’s CFO. In response to increasing financial fraud using Gen AI, regulators have begun to take notice.

The CFPB is [engaged in ongoing monitoring](#) of AI’s use in financial services, with plans to bring enforcement actions for financial services companies found to be using AI to violate its rules. The agency called out [three specific areas](#) with potential for abuse: (1) Noncompliance with federal consumer financial protection laws, (2) diminished customer service and trust, and (3) harm to consumers, such as providing inaccurate product or service information.

The Federal Reserve has [identified four areas](#) that they are monitoring in the financial industry’s use of AI: the use of AI to cut costs and counter fraud, the use of AI in credit evaluation, the use of language models to deliver better explainability of customer decision making, and the development of alternative data and models for financial decisions. The Fed views AI with “guarded optimism” for the potential it has to reduce costs and improve operations in financial markets. In Governor Lisa D. Cook’s comments on generative AI, [she notes that](#), “The Federal Reserve’s dual mandate is to promote maximum employment and stable prices. [...] In general, I am optimistic about broad benefits accruing to the economy and society from the use of generative AI—including more productive and less tedious work.”



## Rulemaking

The US Treasury recently published a [Request for Information and Comment on Financial Institutions’ Use of Artificial Intelligence](#), which many expect to lead to rulemaking on how financial institutions can use and engage with AI. The organization [previously noted that](#) banks can accrue significant benefits from implementing AI, such as “reducing costs and improving efficiencies, identifying more complex relationships, and improving performance and accuracy,” but identified three broad risks that will be the basis for their rulemaking: (1) risks arising from the design of AI, (2) risks arising from how humans use or deploy AI, and (3) operational and cyber risks of AI.

Regardless of the specific response of the prudential regulator relevant to various banks and fintechs, it’s clear that both parties must continue to adhere to existing regulations and forecast the regulatory treatment of Gen AI by developing new products that adhere to compliance best practices. The fintechs that take a regulatory-first approach in Gen AI are likely to be the ones that win the mandate to continue serving their customers.

## Conclusions and recommendations for fintechs and FIs

The financial services industry is certainly still in the early stages of deploying Gen AI, as well as mitigating its risks. There are significant opportunities, many of them still unexplored, to offer customers more efficient and effective banking products. The banks that benefit the most from Gen AI will be those with:



**Large amounts of customer data**, to allow them to train more nuanced Gen AI models for everything from underwriting to customer service.



**High compliance standards and a track record of effective monitoring**, to ensure both back-end and customer-facing Gen AI tools are leveraged responsibly.



**Forward-thinking product teams and partnerships with innovative fintechs**, to leverage a variety of industry-leading Gen AI products from partners while also building sophisticated internal tools based off of proprietary machine learning models.

McKinsey [data published by the Federal Reserve show that](#), “only 36 percent of industry respondents reported that their companies had adopted AI for the automation of back-office processes, only 32 percent had deployed AI-based chatbots for customer service, and only 25 percent had deployed AI for detecting fraud or evaluating creditworthiness. The consulting firm Cornerstone Advisors reported even lower numbers [...] only 25 percent of survey respondents had deployed AI for process automation and only 18 percent had deployed AI-based chatbots.”

The nascent use of AI in financial services signals that there are still significant unrealized opportunities for banks and fintechs.

**Along with the unrealized opportunities, there are also still many unanswered questions to explore:**

- **Does the incorporation of generative AI in financial services really provide a sustainable edge? Or will the product moat erode over time as competition between LLM providers drives down prices and banks and fintechs reach AI feature parity, similar to hosting in the cloud vs. on-prem?**
- **Do specialized LLMs like Hyperplane’s banking-specific Mandelbrot language have an inherent advantage over generic LLMs trained on higher volumes of data?**
- **How will the regulatory response to Gen AI alter how banks and fintechs are able to incorporate this emerging technology into their product offerings?**
- **Will every financial product necessitate a Gen AI component in the future, or are there bespoke, human capital-intensive service areas – such as M&A or international expansion – that will continue to be the domain of subject matter experts?**

As banks and fintechs continue to explore the opportunities of Gen AI, Visa has taken the [first step of publishing guidelines](#) for how businesses – from healthcare to manufacturing to transportation to big tech – should begin leveraging Gen AI. Successful deployment of Gen AI capabilities in financial services will rely on collaboration with external partners. Visa Consulting and Analytics, for instance, offers an AI Advisory Practice, leveraging a network of more than 1,000 consultants, data scientists and industry experts across six continents to help clients understand the AI landscape and get the most out of generative AI.

The key to the successful implementation of Gen AI in banking is upholding ethical AI standards and maintaining high-quality data governance. To drive impact at scale, Gen AI-enabled financial products need to be safe for their end-users, need to avoid regulatory violations, and need to improve outcomes for customers while creating efficiencies for financial institutions. Securing customer consent for data usage, conducting rigorous machine learning model testing and evaluation, and providing transparent disclosures are all pre-requisites to building lasting, well-governed Gen AI tools in finance.

**Visa is excited to keep forging ahead, collaborating with our partners and stakeholders to explore:**



Implementing industry-leading standards for the handling, maintenance, and governance of data for Gen AI systems.



Ingesting relevant information to provide key insights in areas like transaction authorization, fraud, underwriting, and payments.



Providing relevant information to banks' Gen AI systems to help them more effectively manage customer interactions.



Facilitating payments for new and emerging commerce primitives, like social commerce, in collaboration with e-commerce and social media providers.



Bringing together relevant industry partners to bridge disparate data sets and develop novel use cases for Gen AI using Visa's network signals, all with informed customer consent.

As we discussed in our November 2023 paper, [What lies ahead for bank and fintech partnerships?](#), banks and fintechs each leverage their own strengths to partner. Banks benefit from scale, best practices, and licensing, while fintechs benefit from the quick iteration and the introduction of new technologies. We believe that by leveraging these two sets of strengths, banks and fintechs will partner to introduce new and exciting applications of Gen AI over the next decade and beyond.

Regardless of what the future holds, a few things are clear:

**01.**

**Gen AI in financial services is no longer "on the way" – as evidenced by many examples, it is here today and banks and fintechs need to take notice and respond.**

**02.**

**The regulatory treatment of Gen AI is still relatively new, and will largely determine how products can be developed and offered in the future.**

**03.**

**Even with the recent activity and innovation exemplified in this paper, there is still significant unexplored territory in Gen AI in financial services that signals a future ripe with opportunities for banks and fintechs alike.**