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The Financial Services Generative AI Dossier

A selection of high-impact use cases

By Deloitte AI Institute

www.deloitte.com/us/generative-ai-dossier

About the Deloitte AI Institute

The Deloitte AI Institute™ helps organizations connect all the different dimensions of the robust, highly dynamic, and rapidly evolving Artificial Intelligence ecosystem. The AI Institute leads conversations on applied AI innovation across industries, with cutting-edge insights,to promote human-machine collaboration in the “Age of With™.”

The Deloitte AI Institute aims to promote the dialogue and development of AI, stimulate innovation, and examine challenges to AI implementation and ways to address them. The AI Institute collaborates with an ecosystem composed of academic research groups, start-ups, entrepreneurs, innovators, mature AI product leaders, and AI visionaries to explore key areas of artificial intelligence including risks, policies, ethics, the future of work and talent, and applied AI use cases. Combined with Deloitte’s deep knowledge and experience in artificial intelligence applications, the Institute helps make sense of this complex ecosystem, and as a result, delivers impactful perspectives to help organizations succeed by making informed AI decisions.

No matter what stage of the AI journey you are in: whether you are a board member or a C-Suite leader driving strategy for your organization—or a hands-on data scientist bringing an AI strategy to life—the Deloitte AI Institute can help you learn more about how enterprises across the world are leveraging AI for a competitive advantage. Visit us at the Deloitte AI Institute for a full body of our work, subscribe to our podcasts and newsletter, and join us at our meet-ups and live events. Let’s explore the future of AI together.

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Introduction

The advent of Generative AI has delighted and surprised the world, throwing open the door to AI capabilities once thought to be still far off in our future. With a remarkable capacity to consume and generate novel outputs, Generative AI is prompting excitement and stimulating ideas around how this type of AI can be used for organizational benefit. Far more than a sophisticated chatbot, Generative AI has the potential to unleash innovation, permit new ways of working, amplify other AI systems and technologies, and transform enterprises across every industry.

This compendium highlights 60 of the most compelling use cases for Generative AI across six major industries:

- **Consumer** (which includes Consumer Products, Retail, Automotive, Lodging, Restaurants, Travel, and Transportation)
- **Energy, Resources, and Industrial** (ER&I)
- **Financial Services** (FSI)
- **Government & Public Services** (GPS)
- **Life Sciences & Health Care** (LSHC)
- **Technology, Media, and Telecommunications** (TMT)

For each of these industries, we explore Generative AI use cases that can address enterprise challenges in new ways, permit more and greater capabilities across business functions, and deliver advantages in efficiency, speed, scale, and capacity.

As with any type of AI, there are potential risks. We use Deloitte's Trustworthy AI™ framework to elucidate factors that contribute to trust and ethics in Generative AI deployments, as well as some of the steps that can promote governance and risk mitigation. Trustworthy AI in this respect is: fair and impartial, robust and reliable, transparent and explainable, safe and secure, accountable and responsible, and respectful of privacy.

To be sure, this collection of use cases is just a sample among myriad other applications, some of them yet to be conceived. As Generative AI matures as a technology and organizations move forward with using it for business benefit, we will likely see even more impressive and compelling use cases. The applications highlighted here can help spark ideas, reveal value-driving deployments, and set organizations on a road to making the most valuable use of this powerful new technology.

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Six key modalities

One of the primary differences between more traditional AI and Generative AI is that the latter can create novel output that appears to be generated by humans. The coherent writing and hyper-realistic images that have captured public and business interest are examples of Generative AI models outputting data in ways once only possible with human thought, creativity, and effort. Today, Generative AI models can create outputs in six key modalities.

Text

Written language outputs presented in an accessible tone and quality, with details and complexity aligned with the user's needs.

Examples include summarizing documents, writing customer-facing materials, and explaining complex topics in natural language.

Code

Computer code in a variety of programming languages with the capacity to autonomously summarize, document, and annotate the code for human developers.

Examples include generating code from natural language descriptions and autonomously maintaining code across different platforms.

Audio

Much like textual outputs, audio outputted in natural, conversational, and even colloquial styles with the capacity to rapidly shift among languages, tone, and degrees of complexity.

Examples include Generative AI-powered call centers and troubleshooting support for technicians in the field.

Image

Textual or visual prompts lead the model to create images with varying degrees of realism, variability, and "creativity."

Examples include simulating how a product might look in a customer's home and reconstructing an accident scene to assess insurance claims and liability.

Video

Similar to imagery, Generative AI models can take user prompts and output videos, with scenes, people, and objects that are entirely fictitious and created by the model.

Examples include autonomously generating marketing videos to showcase a new product and simulating dangerous scenarios for safety training.

3D/Specialized

From text or two-dimensional inputs (e.g., images), models can extrapolate and generate data representing 3D objects.

Examples include creating virtual renderings in an omniverse environment and AI-assisted prototyping and design in a purely virtual space.

By understanding these modalities, organizations are empowered to think through and better understand the kinds of benefits Generative AI could permit. For each use case described in this dossier, there may be more than one value-driving modality. A chatbot text output could be presented as simulated audio; a generated image could be extended into a video. Ultimately, the Generative AI use case and the value the organization seeks will determine which output modalities can contribute the greatest advantages and outcomes.

Broad categories of value capture from Generative AI

The value that Generative AI use cases can enable can be conceived across six dimensions: cost reduction, process efficiency, growth, innovation, discovery and insights, and government citizen services. To be sure, a single use case can drive more than one value capture, but to help paint the vision for how Generative AI can be used to move the needle on competitive differentiators and operational excellence, the use cases described in this dossier are each associated with a primary value capture.

Cost reduction

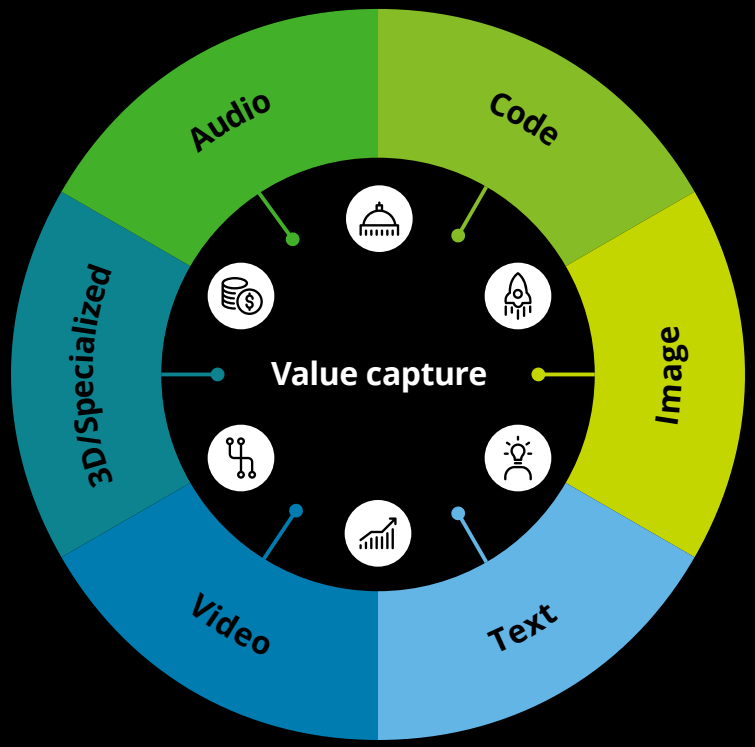
Reduce cost, typically by 30% or greater, primarily through automating job functions and then undertaking job substitutions

Process efficiency

Create process efficiencies through automating standard tasks and reducing manual interventions

Growth

Increase revenue generation through hyper-personalized marketing for target customers



Government citizen services

Increase accuracy of various federal and local programs and create easier access for at-risk populations

New discovery and insights

Uncover new ideas, insights, and questions and generally unleash creativity

Accelerating innovation

Increase the pace of new product or new service development and speedier go-to-market

The Financial Services Industry (FSI) is data-intensive, simultaneously representing an opportunity for business success and a challenge to operations and efficiency. The manual effort required to analyze data and use the resulting insights for business and customer benefit is slow and expensive. More than that, the volume and complexity of the data can prohibit the realization of a truly customer-centric approach. FSI enterprises have made some progress in leveraging AI to automate aspects of the business and use machine learning for data-driven decision making. With the advent of Generative AI, these endeavors can be dramatically enhanced, accelerated, and scaled.

The potential value in Generative AI in FSI is not merely as a downstream application. Rather, it can serve as a powerful and complementary tool that works with other machine learning models and applications. Businesses with mature AI programs are approaching Generative AI not as stand-alone silo models but as components of a constellation of models, where the insights and outputs from one are used to inform the function and direction of another.

The vision with Generative AI is multifaceted. At the grandest level, the incorporation of Generative AI could be the enabling tool that allows FSI enterprises to fully transition from a product-centric approach to one that is designed around the customer, using AI to enhance and invigorate customer lifecycle management. Generative AI paired with other AI for tasks like sentiment analysis and customer analytics can lead to hyper-personalization in product offerings and customer engagement. This can drive new and more business while also catering to customer expectations for customized products and services.

Generative AI paired with other AI for tasks like sentiment analysis and customer analytics can lead to hyper-personalization in product offerings and customer engagement.

This is the more profound value in Generative AI, not as a discrete application but as an enabling component of the broader data infrastructure and AI programs. Generative AI can be leveraged to dramatically accelerate model development and tuning, drawing from new data pipelines at a pace no human could match. It can be a powerful contribution to enterprise-wide digital transformation, reducing time, cost, and risk. And it can be used to generate complex reports and analyses, informing customers and employees, shaping executive decision making, and ferreting out fraud, waste and abuse.

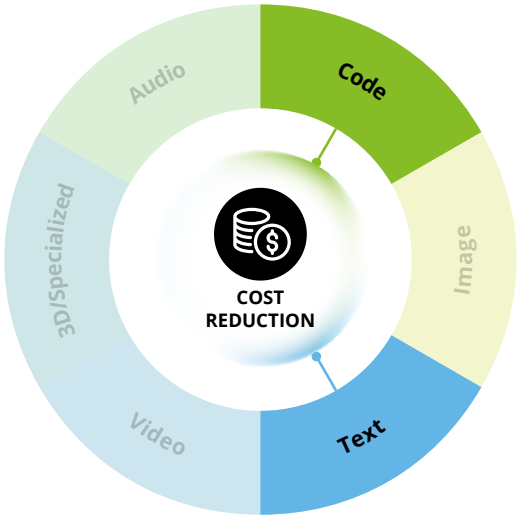
To be sure, there are risks, such as data leakage and output inaccuracies. Nevertheless, integrating Generative AI into an organization's wider technology stack and AI programs holds so much potential that it is becoming a priority in FSI. The capabilities in cost avoidance, speed to market, customer engagement, and scale can be powerful differentiators that do not just create value at the margins but contribute to a transformation of the very DNA of the company.

Generative AI can be leveraged to dramatically accelerate model development and tuning, drawing from new data pipelines at a pace no human could match.

Transformation with speed and confidence

(Code Assistant for Digital Transformation)

Generative AI can enable banks to increase digitization at a faster pace through code assistants.



Issue/opportunity

Many FSI enterprises are pursuing cloud and data transformations, which are essential steps in preparing the organization for using AI tools (of many kinds). In some cases, legacy hardware is retired as data is curated and shifted to the cloud, freeing up humans for more valuable work while bringing down the costs associated with on-premise infrastructure. Yet, these kinds of transformations are significant undertakings that can bring long lead times and high costs. There is also a risk of failure and error.

How Generative AI can help

Supercharge your human capital
Generative AI can be used as a component of cloud and data transformations to empower developers working across the enterprise on applications, data engineering, machine learning, and frontend development.

A helping hand in code development
As organizations explore new digital and cloud capabilities, development teams can accelerate and simplify their work by using Generative AI as a force multiplier when writing, debugging, and documenting code, as well as translating ideas to code.

A shorter path to software
Part of success in transformation hinges on how quickly new enabling software can be deployed. There are opportunities to use Generative AI in software development to shorten the lifecycle and more quickly reach a stable and deployable version, such as by helping rapidly write APIs, ETL, data pipelines, or even frontend code.

Transformation with speed and confidence

Managing risk and promoting trust

Reliable
Partial automation of programming-related tasks requires the system to be reliably availability and accurate. If availability cannot be guaranteed to an acceptable extent, weigh the benefits of automation against the risk of erroneous or buggy code.

Responsibility
The training data for foundation models may create legal risks related to intellectual property or copyright infringement. If the training data contains copyrighted material, the organization deploying the model needs to evaluate whether the presence of intellectual property in the training set could lead to legal challenges against the enterprise.

Security and privacy
By using a Generative AI system, proprietary code bases may be exposed to third parties, raising questions around the security of the data and controlled access to it. An inadvertent breach of confidential intellectual property could have significant enterprise impacts.

Accountable
While the use of Generative AI can accelerate the work of developers, without a human in the loop (e.g., validating and debugging code), critical failures may occur. Shoring up accountability may include documenting and communicating standards and expectations for employees using Generative AI.

Potential benefits

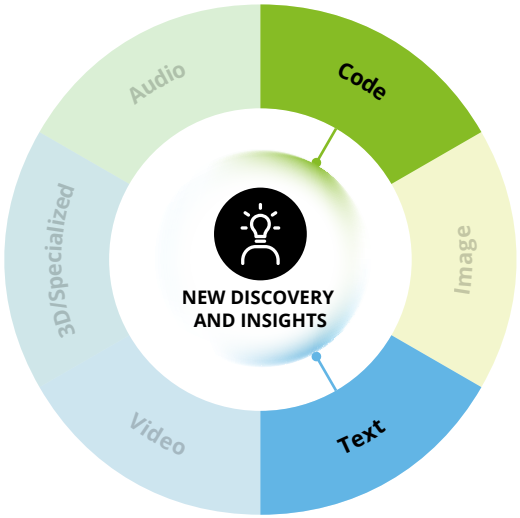
Lower transformation costs
By shortening the software development lifecycle, the organization can reduce overall costs for digital and cloud transformation.

Lower the bar to digital entry
Using Generative AI opens the door for FSI organizations of all sizes, capabilities, and technology maturities to digitize and move to the cloud in a way that was previously out of reach for many.

Business intelligence at your fingertips

(Enterprise-wide data search and access)

Make business intelligence via enterprise data search accessible to all through natural language interfaces.



Issue/opportunity

For many banking and insurance companies, data is stored in a multitude of locations, from local hardware to cloud storage solutions. This makes it difficult to effectively query different databases and retrieve relevant information in a time-efficient manner. Complicating the matter, multiple mergers and acquisitions over time may have compounded the diversity of data locations and databases, which hinders data mining for insights. FSI organizations are information-intensive enterprises, and without the capacity to easily query all data, the result is poorer or incomplete insights that can increase enterprise risk while threatening customer dissatisfaction.

How Generative AI can help

An enabling interface
Generative AI capabilities are built on top of an existing solution to facilitate the communication of queries from the user to the search layer. It serves as the interface between search layers and databases, allowing users to easily mine all enterprise data, as well as generate structured analytics reports.

Speed to insight
With the ability to query and analyze disparate data sources using Generative AI as an interface, the enterprise can move past traditional business intelligence techniques and dramatically reduce the time required to generate insights while increasing the workforce accessibility to business intelligence.

Business intelligence at your fingertips

Managing risk and promoting trust

Responsible

When it comes to governance and control, while granting more data access to a wider segment of the workforce, organizations may face a more complex challenge of restricting who in the organization is permitted to access sensitive business data.

Reliable

Given the known challenges with model reliability and the potential for hallucination, banking and financial services organizations face the risk of inaccurate or false Generative AI-derived insights influencing decision making and leading to negative ramifications even at the market level.

Privacy

When dealing with sensitive and proprietary information, the organization must contend with securing the data, remove or obscure it in training and testing sets, and evaluate the model to determine whether information could "leak" protected information, either due to faulty function or a targeted attack.

Potential benefits

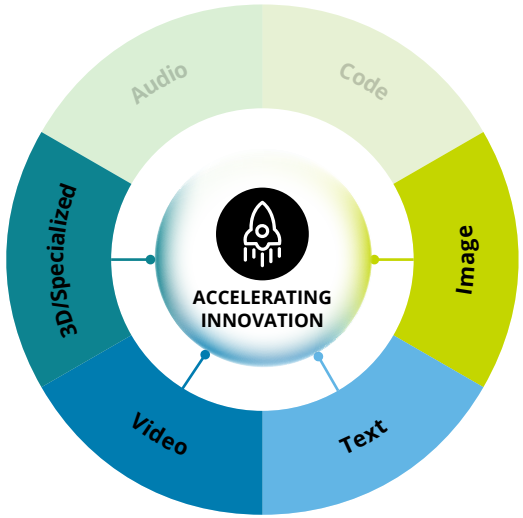
Lower technical hurdles
Generative AI as an interface between search and data enables business users to query databases and obtain tailored results without in-depth programming experience. This gives more of the workforce access to business intelligence without additional burdens on IT and data science teams.

A new level of data-driven decisions
Real-time access to all of an enterprise's data can help organizations become even more insight driven, which supports improved growth prospects through access to the right insight at the right time.

Fixing the missing data issue

(Synthetic Data Generation)

Generate synthetic data for model training, anomaly detection, and identifying cyber and deception attacks.



Issue/opportunity

Missing data is a significant challenge for FSI organizations. Datasets may be incomplete, data transfers may be restricted, and potential anomalies are underrepresented in the data. Using synthetic data can help overcome these challenges. In cloud transformation, data transferals may be delayed due to the risks associated or regulations around data governance, and using synthetic data first enables a smoother and more efficient transformation. Meanwhile, machine learning anomaly detection systems (such as for identifying fraud, waste, and abuse) are trained on data from previous events. Their rarity and the dearth of data around them can make anomalies harder to assess.

How Generative AI can help

Improve model training
Generative AI can be used to quickly create synthetic data to supplement machine learning model training data, which is then used to aid and accelerate digital and cloud transformations. In this way, Generative AI complements the enterprise's wider AI initiatives, fueling (rather than replacing) other AI deployments.

Amplify anomaly event detection
The rarity of anomaly events can make it difficult to train machine learning systems to detect instances of fraud, waste, and abuse, but by creating synthetic data with Generative AI, ML systems have a larger suite of examples that lead to a greater capacity to find patterns and anomalies in the data.

Harden the organization's cyber posture
Just as synthetic data can be used to train models to identify fraud, adversarial synthetic data can be used to train models to detect and mitigate cybersecurity risks, as well as user deception of virtual assistants.

Fixing the missing data issue

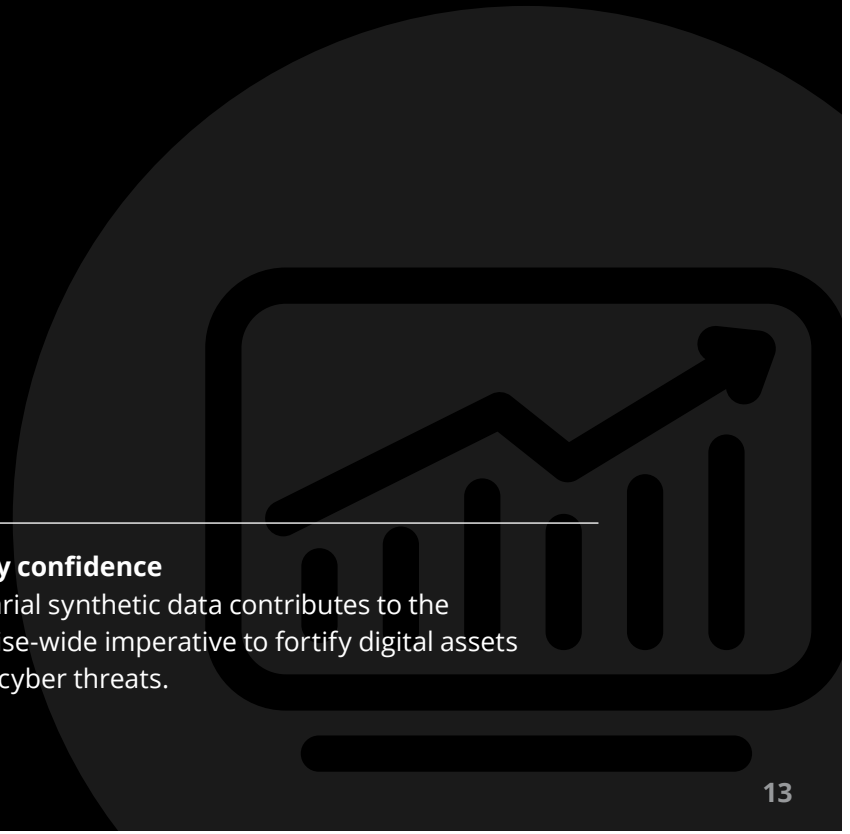
Managing risk and promoting trust

Fair and impartial

A significant risk when generating synthetic data is that historic biases can creep into the generated data, perpetuating those biases. This bias is not necessarily intentional, such as in the case of certain communities or socio-economic groups being underrepresented in the data because those groups have conducted fewer banking business in the past.

Reliable

Synthetic data created with Generative AI can be limited in its scope and scale, and it should not be presumed to be accurate or perfectly reflective of real-world data. An over-reliance on synthetic data may inject problems with data reliability, which can hamper the validity and usefulness of the outputs and model training.



Potential benefits

Faster path to the cloud
Generative AI-created synthetic data can accelerate digital and cloud transformations by making the transition smoother and more efficient.

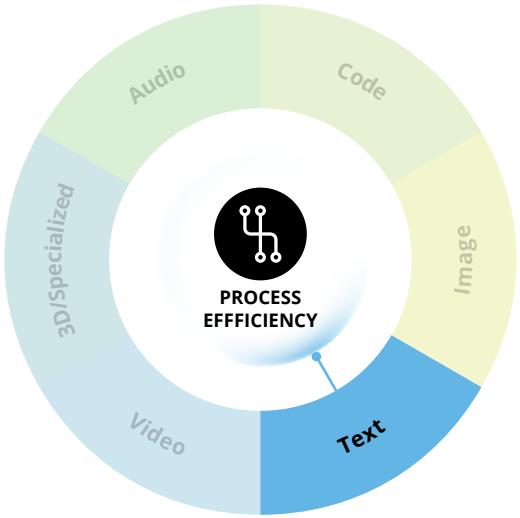
Tackling Fixed Wireless Access (FWA)
Use synthetic data to train machine learning systems on rare or unknown events, such as a novel type of fraud.

Security confidence
Adversarial synthetic data contributes to the enterprise-wide imperative to fortify digital assets against cyber threats.

Getting to know your customer

(Research-Based Report Generation)

Generate and summarize reports on new customers to inform employee decisions for customer onboarding.



Issue/opportunity

New customers are the lifeblood of a growing FSI enterprise, but onboarding customers can be a highly manual and time-consuming process. Know Your Customer (KYC) standards and rules require institutions to develop meta reports on customers based on economic outlook, equity research, adverse media, and new prospect due diligence. These are high human involvement tasks, with desk-based meta research consuming valuable time and resources.

How Generative AI can help

Condensing results for easier consumption
Generative AI can be used to summarize and filter results from existing search engines to inform meta reports, as well as summarize information for the customer relationship manager.

Research and analysis to inform reports
Generative AI, alongside other machine learning models, can be used to conduct preliminary data searches and meta analysis, potentially accelerating the KYC process.

Getting to know your customer

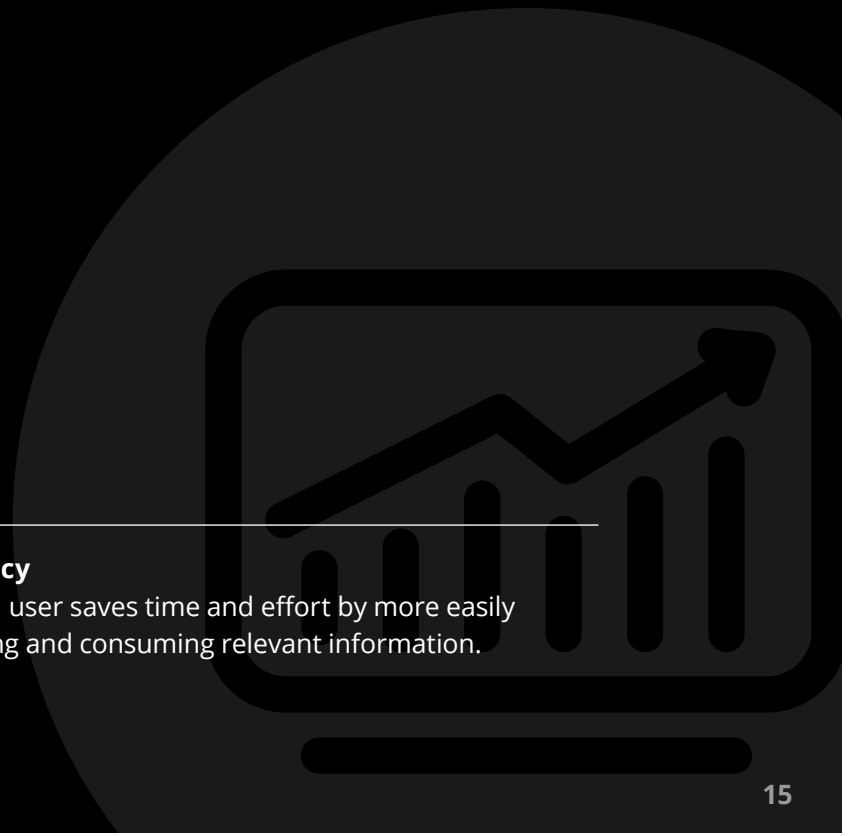
Managing risk and promoting trust

Reliable

When using Generative AI to perform search and analysis, there is a risk that it could skip or misconstrue highly relevant information, which could skew the conclusions in the meta analysis and hamper sound decision making. If a new customer is erroneously assessed to be higher risk and a relationship manager passes on the opportunity to engage the customer, the consequences are missed revenue and diminished customer engagement.

Privacy

When dealing with a customer's financial or personally identifiable information, the enterprise faces legal and regulatory standards for data privacy. When using Generative AI, the organization should take steps to ensure sensitive information does not inadvertently leak through model outputs, as well as govern who has access to the model, the underlying data, and the customer data it references.



Potential benefits

Timely insights
Faster and more efficient search and analysis can give decision makers more up-to-date information and insights that enable better, more timely decision making around customer onboarding.

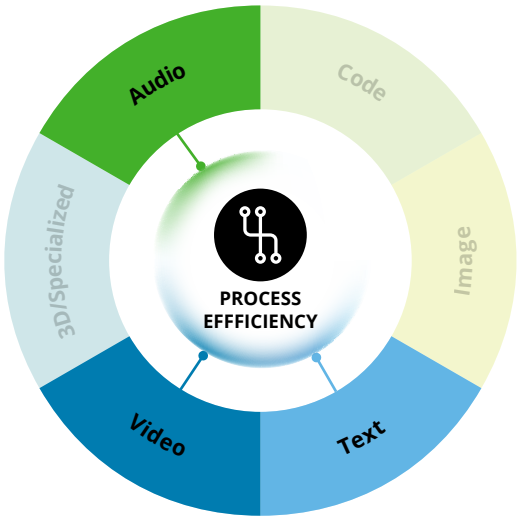
Cost reduction
By streamlining and simplifying the report generation process, costly labor hours can be redirected to more valuable work.

Efficiency
The end user saves time and effort by more easily accessing and consuming relevant information.

Enhanced AI support for customers

(Financial Guardian)

A personal virtual assistant powered by Generative AI can cater to daily needs of customers.



Issue/opportunity

Customer service and engagement is vital for FSI organizations, particularly as they transform from a product-focused to a customer-focused business. As a part of that, there is a pressing need for the enterprise to rapidly and accurately answer both common and complex customer queries and do so with the timeliness customers expect. Yet, the increase in digitization in FSI organizations has reduced access to representatives who can answer customer questions; this is at a time when FSI customers seek a hyper-personalized experience.

How Generative AI can help

An empathetic, personalized interface
Generative AI can be paired with other models to create a customer interface that delivers a hyper-personalized experience, such as by training the Generative AI model to provide answers or insights with empathy. It also overcomes some of the challenges around more traditional chatbots that can lack an empathetic tone.

A more capable digital agent
Using Generative AI can dramatically improve the usefulness and accessibility of a chatbot interface. With the capabilities of large language models (LLMs), a personal digital assistant can summarize contracts and answer nuanced questions, and the customer may enjoy a range of interface options, including text, audio, and imagery.

Enhanced AI support for customers

Managing risk and promoting trust

Responsible

While a Generative AI-enabled solution may provide valuable answers and recommendations most of the time, there is a risk that too much confidence may be placed in the validity of the outputs, both by the organization and the customer. Generative AI is not an infallible oracle, and an overreliance on the AI solution may have a detrimental impact on customer actions, which can in turn increase financial risk.

Privacy

When confidential or personally identifiable information is inputted via the digital interface by the customer, the FSI organization is obligated to follow the laws and rules that dictate how that sensitive information can be transmitted, stored, and accessed. Failing to do so could raise legal peril and potentially subject the enterprise to greater cyber risks.

Transparent

End users require a clear understanding of how their information will be processed, as well as that they are interacting with a machine. At the same time, the enterprise needs to be able to interpret outputs and understand how and why the Generative AI model created a given output.

Potential benefits

Customer satisfaction
Greater accessibility and more timely answers can lead to a more personalized and satisfying customer experience. This can drive an increase in net promoter score, reflecting increased customer retention and loyalty.

A cycle of efficiency and growth
Customer loyalty and brand reputation fuel business growth, but using Generative AI as a component of a virtual assistant also supports efficient operations. Greater reliance on Generative AI-enabled interface can service more customers at scale while the human workforce focuses on resolving the most complex issues or attracting new customers.

Financial inclusivity through hyper personalization
When customers feel that banking applications are delivering a valuable, personalized experience, it encourages greater customer engagement and interest in service offerings, supporting both the customer's financial wellbeing, as well as that of the enterprise.

Customized marketing for the individual

(Hyper-personalized Sales and Marketing Assistant)

Regulatory-compliant marketing material generation across different geographies.

Issue/opportunity

FSI marketing operations are increasingly coming under regulatory scrutiny for issues such as mis-selling and misinformation. Part of the challenge for multinational organizations is that cultural differences as well as varying customer understanding of the products may create regulatory risk for enterprises in a given geography. To overcome this, FSI organizations invest significant manual labor to maintain a compliant marketing function, which is both time consuming and costly.

How Generative AI can help

Customized materials for different audiences
Generative AI can be used to create marketing materials that contain the appropriate tone, language, and cultural references, while also supporting consumer understanding of the product so as to maintain regulatory compliance.

Personalized sales at scale
With Generative AI, FSI organizations have the ability to create marketing materials that are customized to individual customers, and it can be done at scale.

Customized marketing for the individual

Managing risk and promoting trust

Reliable

For Generative AI-derived marketing to be valuable, the organizations needs to be able to rely on the validity of the output. Generative AI can be prone to hallucinations, and once tasked with creating marketing that touts one product over another, there is a risk the model will return false statements. This injects potential regulatory violations that could incur fines and other penalties. To shore up reliability with Generative AI, ensure outputs are validated by a human with the subject matter understanding to do so.

Fairness

Datasets may contain latent bias of which the organization is unaware. This could be due to the way in which the data was acquired, recorded, and curated, and the challenge is compounded when operating in multiple geographies. Consider the datasets used to train and fuel Generative AI systems and whether unknown bias could lead to marketing materials that fall short because they fail to reflect important geographical and cultural differences.

Potential benefits

Individual-level marketing
Hyper-personalized marketing takes the enterprise to a new stage of customer engagement and enticement that is infeasible through manual effort alone.

Confident compliance
Using Generative AI for marketing development can help ensure the content remains in line with regulatory expectations across many geographies, thereby reducing regulatory risk.

Driving marketing ROI
Personalized marketing that is customized for the customer can support new sales, strengthen the customer relationship, and reduce the cost of marketing operations while also improving the timeliness of outreach and engagement.

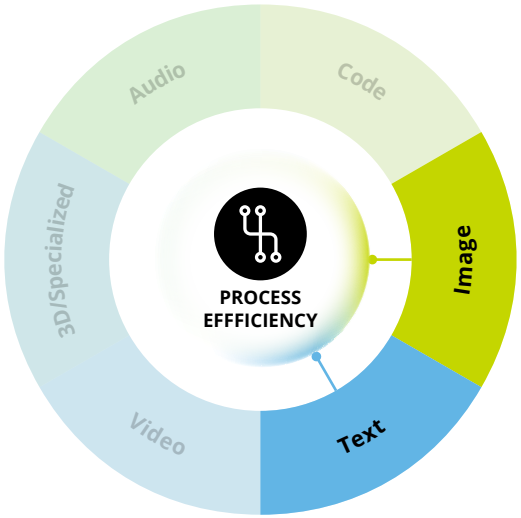
Ensuring the integrity of claims

(Automated Claims Reporting)

Generative AI can be used to automatically generate reports based on descriptions or pictures of the relevant subject.

Issue/opportunity

During claims processing for property and casualty insurance, claims agents must decide whether a destructive event was insured, and if so, the amount and cost of the damage. These processes are complex and can be time consuming, and agents have few tools to support their decision making.



How Generative AI can help

Virtual damage rendering
Generative AI can be used to help visualize the damage by replicating it virtually. The basis for the replication and visualization can be customer conversations, damage documents, photos, official reports, and other relevant media. In visualizing the data in this way, the agent is empowered to make better decisions when assessing the degree and cost of damage.

Automated claims reporting
With Generative AI, claims reports can be generated based on photographic evidence.

Ensuring the integrity of claims

Managing risk and promoting trust

Reliable

Damage visualization requires a high degree of accuracy, and erroneous Generative AI outputs could lead to claims being paid incorrectly, potentially leading to overpayment (a detriment to the organization) or underpayment (a detriment to the customer).

Explainable

If claims agents use Generative AI to automate aspects of claims processing but are unable to articulate to customers how the Generative AI model derived its outputs or contirbuted to the cost and damage assessment, customers may not accept the outcome of the claims process.

Potential benefits

Cost reduction
When claims are processed faster and damage assessments are more accurate, it can reduce costs in labor hours and claims payments.

Customer satisfaction
By processing claims faster and with less administration, customer satisfaction improves due to quicker, more streamlined adjudication and payment.

Identifying fraud
More expedient claims processing has the advantage of identifying potential fraud more quickly, helping to ensure the integrity of claims and payments.

A virtual bank experience

(VR-Enabled Retail Banking Centers)

Virtual reality customer agents powered by Generative AI can change the retail banking experience and interactions.

Issue/opportunity

Banks seek to provide customers with multiple methods of interacting with their accounts, services, and offerings. As digital services grow, customers may prefer to conduct banking transactions remotely via an edge devices. These virtual transactions still require an agent, and human employees are the most expensive cost component in customer service, particularly when there are a necessary three levels of customer support. Chatbots can help automate virtual transactions, but existing chat tools are limited to specific, pre-programmed dialogue and options. A limited volume of conversations can be handled by AI today.

How Generative AI can help

Bring the bank to the customer
With a Generative AI-enabled virtual space, customers can use a VR headset to conduct business with the financial institution and interact with a service representative from the comfort of their own home and in a way that is convenient for the customer.

Hyper-personalized service
A Generative AI agent can provide conversational, tailored responses to questions about customer accounts and financial needs. By this, the enterprise caters to the customer desire for a personalized experience while also avoiding the costs that come with adding more human customer service workers.

Speed and quality of service
In a virtual space, customer data can be accessed in real time by the conversational agent to provide faster, higher quality service and offerings.

A virtual bank experience

Managing risk and promoting trust

Transparency

Given a Generative AI-enable chatbot's capacity for conversational outputs, there is a risk that customers may not realize they are interacting with a machine. To promote trust, customers should not only be informed that the chatbot is not human, but also, they should understand how their inputs and information are stored, accessed, and use.

Fair and impartial

The datasets used to train and inform the chatbot may contain latent biases, such as underrepresented customer groups or semantic deficiencies in some languages but not others. As a result of untreated bias, the model may simply not work as well for some customers, leading a variety of negative customer impressions and complaints.

Accountable

With issues around reliability and data quality, if the chatbot outputs erroneous data or recommendations, a human stakeholder needs to be accountable for the outcome. Organizations can promote accountability by keeping a human in the loop and documenting roles and responsibilities.

Potential benefits

Customer-focused experience
A Generative AI-enabled virtual banking experience connects customers with tailored digital representatives that can converse in the customer's preferred language in a timelier manner.

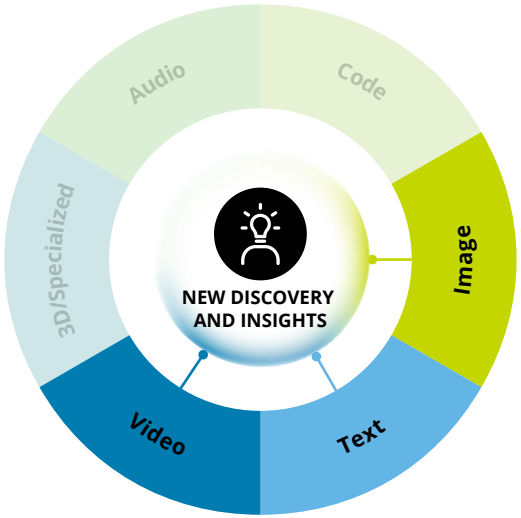
Liberated human capital
With conversational chatbots satisfying most customer inquiries, the human workforce can focus on the most complex or value-driving activities and customer service.

Cost avoidance
Virtual agents allow the bank to serve more customers without expanding the human workforce, which helps limit customer service costs.

The next era of market analysis

(Predictive Trading Algorithms)

Generative AI can be leveraged to identify a larger number of trades more quickly to support profitability.



Issue/opportunity

Identifying and capitalizing on valuable trades requires technical analysis, news and reports, and industry data, all accessed in real time. Analysts must consume these vast amounts of information to understand and predict market trajectory and make prudent buying and selling decisions. A challenge for financial firms is that market analysis is in many ways a time-consuming, manual process.

How Generative AI can help

Faster, more accurate analysis
Leveraging Generative AI in market analysis can support and supplement the human analyst, accelerating their work while also potentially delivering more accurate market predictions.

Revenue driver
By enhancing the analyst's capacity, the organization could achieve a larger number of profitable trades, generating a return for clients and the enterprise.

Real-time risk mitigation
Drawing from predictive analytics, Generative AI can help mitigate investment risk in real time by creating trade strategies to hedge positions.

Data consumption at scale
Generative AI offers a greater capacity to consume a variety of data types, which can enhance natural language processing capabilities in sentiment and news analysis at a scale and speed far greater than human analysts.

The next era of market analysis

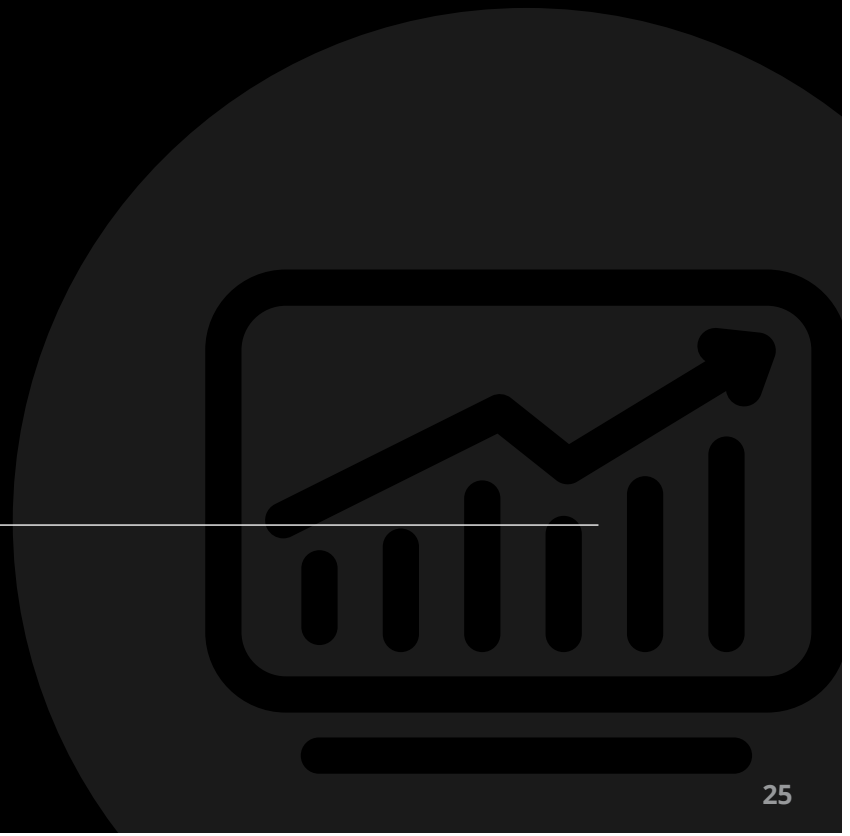
Managing risk and promoting trust

Reliable

The Generative AI model is susceptible to erroneous outputs delivered with complete confidence, even with hallucinated data points or conclusions. Even as Generative AI may help analysts better predict the market, there is a risk that decisions made based on unreliable outputs could lead to poor outcomes, potentially even worse than a human working alone.

Explainable

Confidence in Generative AI outputs requires stakeholders to understand how and why the machine reached its conclusions. Human validation of Generative AI outputs remains essential, and it necessitates model explainability to a range of stakeholders at each step of the AI lifecycle.



Potential benefits

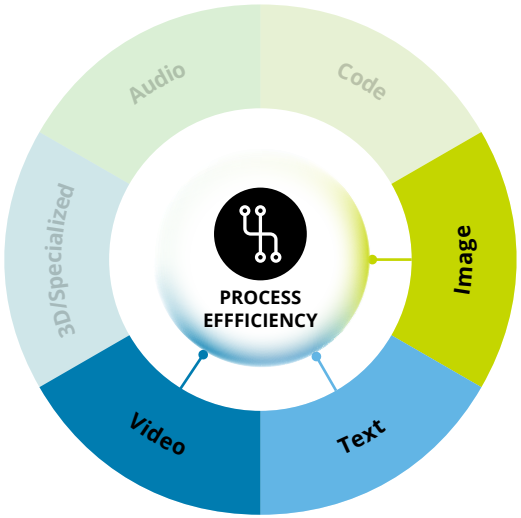
Efficiency, accuracy, and profitability
With faster, more accurate market analysis, the organization can increase trading volumes, validate analysis in real-time, and potentially drive greater profitability while mitigating risks.

Cost reduction
By automating aspects of the market analysis process, human analysts can focus on more complex or value-driving tasks.

Mitigating risk as it arises

(Real-Time Risk Management)

Generative AI can be a powerful addition to support corporate risk management activities.



Issue/opportunity

Corporate risk management is a costly and labor-intensive process with a low tolerance for error. Regulatory and compliance requirements mandate that financial institutions assess and manage risks, including those related to credit, investment, fraud, and cybersecurity. Yet, risk assessments are made based on a variety of data sources, including identity verification, credit assessment, credit card data, mortgage data, and more. At scale, with tens of millions of customers in multiple markets, risk management becomes enormously complex, time consuming, costly, and subject to human error.

How Generative AI can help

Operational efficiency
Real-time monitoring and verification for risk and fraud identification has a direct impact on operational efficiency and cost savings.

Regulatory compliance
The ability to access relevant data and contextual information in real-time supports compliance with regulations and industry standards.

Improved accuracy
When the organization evaluates risk based on customer data, industry data, and real-time updates, the organization can conduct better risk assessments with greater accuracy and impact.

Synthetic data generation
Creating synthetic data that mirrors fraudulent transactions can help train models to better identify risky scenarios, predict fraudulent patterns, and reduce the overall fraud rate.

Mitigating risk as it arises

Managing risk and promoting trust

Fair and impartial

Biases in the data sources used for risk assessment could lead the Generative AI model to output unequal customer risk assessments, which in turn can lead to unfair decisions and unequal treatment. This is not only a concern for brand reputation and customer satisfaction. It may raise compliance issues as well.

Accountable

If risks are missed by the Generative AI system and the organization makes a poor customer decision, the machine cannot be held accountable for the repercussions. Document stakeholder roles and responsibilities and establish output validation as a part of the risk management process.

Security

Given the sensitive information involved in risk management, the model accessing data needs to be secured against leaking or unintentionally divulging customer data to unauthorized parties.

Potential benefits

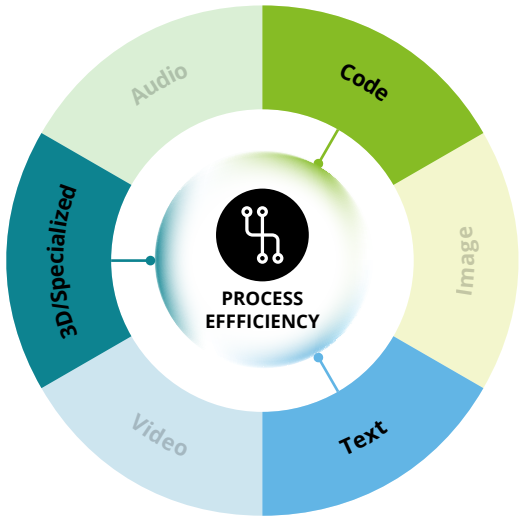
Increased profitability
Mitigating direct and indirect investment risks and reducing fraud directly impacts the organization's book value and profitability.

Promoting compliance
Robust and real-time risk assessments position the organization to more rapidly respond to emerging risks and trends, and by that, enjoy a more agile capacity to meet regulatory expectations for risk management.

Focused cyber

(AI-driven vulnerability management that focuses on real threats)

AI can help filter, analyze, and prioritize security alerts, allowing organizations to focus their resources on true vulnerabilities—which can help reduce their cybersecurity risk.



Issue/opportunity

Financial institutions and other large enterprises rely on multiple security tools that generate millions of alerts daily—many of which are false positives or non-actionable.

Security teams and developers spend time triaging and remediating vulnerabilities that pose little or no real risk. This inefficiency delays response to real threats, creates operational fatigue, and increases the likelihood of breaches—threatening business continuity and brand reputation.

How Generative AI can help

Evaluating alerts
Generative AI models can evaluate alerts by calculating breachability (likelihood the vulnerability can be tapped in a real-world scenario) and exploitability (likelihood it can be actively taken advantage of to inflict harm).

Setting priorities
An AI-driven system can use enterprise-specific context—such as workload risk profiles, application architecture, and network exposure—to separate high-risk from low-risk vulnerabilities. AI automatically identifies which threats demand attention and which can be deprioritized, ensuring a data-driven, risk-based prioritization process.

Focused cyber

Managing risk and promoting trust

Robust and reliable

The vulnerability management system should be continuously retrained and tested against live alert data and historical incidents to validate its prioritization logic. A human-in-the-loop approach confirms oversight on critical decisions, especially during early-stage deployment.

Safe and secure

The models should be hosted in secure environments (e.g., on-prem or restricted cloud instances), with strict access controls and audit trails. Systems must be designed to prevent data leakage and regularly tested for robustness.

Transparent and explainable

AI outputs should include the rationale for prioritization with traceable decision paths that help analysts understand and trust the recommendations.

Potential benefits

Less noise
Moving from thousands of daily alerts to a handful of real threats enables security and engineering teams to focus their time and effort more effectively.

Improved security and reputation
Decreasing security incidents strengthens a company's standing with customers, investors, and regulators.

Cost savings and improved efficiency
Better resource allocation allows security and engineering teams to spend less time and money protecting the organization from cyberthreats.

Enhance productivity & morale
Minimizing time spent on false positives reduces friction between the security and engineering teams, improving productivity and morale.

Automated investment management

(AI-driven portfolio management and optimization)

AI can be used to automate investment portfolio construction, rebalancing, and optimization based on client preferences, market data, and regulatory constraints—improving service quality at lower cost.

Issue/opportunity

Traditional portfolio management is resource-intensive and highly reliant on manual analysis. As client expectations shift toward personalization and cost-efficiency—driven by pressure from robo-advisors and low-cost ETFs—active asset managers are looking for ways to deliver better, more customized service at lower operational cost without compromising on regulatory compliance and fiduciary responsibility.

How Generative AI can help

Taking a broader view
AI models can integrate and analyze structured client data (e.g., risk tolerance, financial goals, life stage) along with external macroeconomic indicators, financial news, and portfolio company metrics.

Automating the process
The models can provide threshold-based rebalancing, factor-based investing, and tax-loss harvesting, enabling continuous monitoring and autonomous adjustment of portfolios. They can also identify potential portfolio risks in real time and flag anomalies for review.

Automated investment management

Managing risk and promoting trust

Robust and reliable

To responsibly deploy AI in a highly regulated, trust-sensitive industry like asset management, models should be tested in sandbox environments under various market conditions to determine resilience to volatility, black swan events, and stress scenarios. Parallel operations with human oversight helping to ensure fallback procedures are in place if AI outputs diverge from expected patterns.

Transparent and explainable

Model-driven decisions—such as rebalancing actions or investment recommendations—should be accompanied by clear rationales that can be communicated to both advisors and clients. Decision logs and audit trails are maintained for every action the AI recommends or executes, enabling accountability and regulatory review.

Respectful of privacy

Client data should be anonymized or pseudonymized where possible and only accessed on a need-to-know basis. Data flows must be tightly monitored to ensure sensitive personal or financial data doesn't leak across internal silos or into unauthorized hands.

Potential benefits

Cost efficiency and scalability
Automation of rebalancing, trade execution, and reconciliation can help reduce FTE hours, enabling long-term fee reduction without margin erosion. Portfolio managers can handle more accounts, improving productivity without sacrificing oversight.

Strategic differentiation
AI-driven portfolio management can help an investment firm maintain a premium position in a commoditized market by offering a high-touch yet affordable client experience that is difficult to achieve in other ways.

Client personalization at scale
Custom investment strategies tailored by AI to fit an individual's life stages, goals, and preferences can improve customer satisfaction and retention in a cost-effective way.

Risk reduction
Transitioning from daily to real-time rebalancing improves market responsiveness and boosts client trust. Also, using AI to flag anomalies, liquidity risks, or sector imbalances early enables proactive corrective actions.

Conclusion

Getting the most value from Generative AI

These are the early days of Generative AI, but the technology is rapidly maturing. As it does, organizations in every industry will probe how this type of AI can contribute to their business and open doors to transformative opportunities. As such, an important part of understanding and working with Generative AI is shaping the vision for the future, acknowledging both the potential benefits and the risks.

In this Generative AI-enabled era, governance and risk mitigation are business imperatives. The challenges organizations face with traditional AI are amplified in this new arena. A commitment to the trustworthy development and use of Generative AI will only become more important as the capabilities grow and governing bodies shape rules for their application.

Still, there is also a risk in waiting to embrace Generative AI. The use cases described in this dossier are a starting point for exploring how this powerful technology can be used to improve the enterprise today and prepare it to lead in the future.

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