

Getting in pole position:
How hedge funds are leveraging Gen AI to get ahead

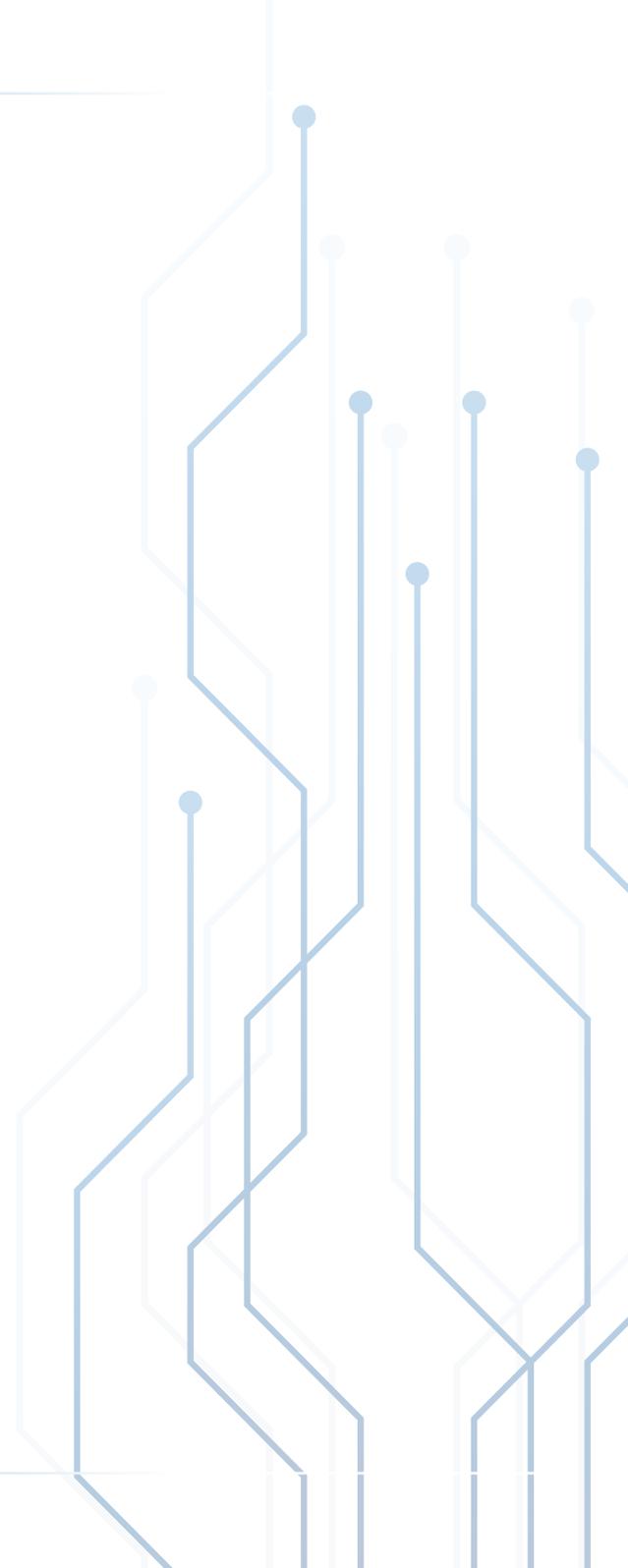
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Foreword

The very mention of artificial intelligence (AI) sparks excitement and anxiety in equal measure. What will the future look like in an AI-enabled world? How will your workday change when a personal AI assistant augments every task, predicting your needs and streamlining your operations in ways current search engines and software cannot come close to competing with? Will you even have a job? These are some of the big questions of today as we stand in the foothills of the next great technology revolution.

AI, in its broadest sense, is not new. The subset of AI most used today is machine learning, which is used in finance, science, and other fields by applying complex algorithms to large datasets. Since November 2022, with the launch of OpenAI's ChatGPT, the public imagination has been captured by another offshoot of AI: Generative (Gen) AI. Gen AI tools, also known as large language models, mine vast datasets to produce sophisticated content, including text, code, images, and other media. However, for every AI convert, a sceptic can point to shortcomings in the technology's abilities and its practical applications in a professional setting.

This report will provide a snapshot of hedge fund managers' attitudes towards Gen AI. It outlines how they use these new tools, where they foresee future opportunities, and the barriers between them and greater adoption.

Commissioned by AIMA's Global Research Committee, this report is among our first forays into the space. In addition to surveying AIMA's global asset management membership, we spoke to industry pioneers and other stakeholders to help understand how they are leveraging arguably the most talked about technology of this generation. All interviewees agreed that successfully integrating AI into business operations requires an equal emphasis on investing in technology and people, a theme we explore in this report.

One commentator described how, much like a winning motor racing team, the optimum strategy for success involves pairing the best engine with the best driver. The market research and qualitative interviews revealed the ambitions of some – mostly larger hedge fund managers – to create just such a partnership to secure a pole position in AI adoption. Those asset managers with the resources to do so are investing heavily in building unique products and bringing in expertise to reap the full benefits of this rapidly expanding new toolkit.

The flip side of this market dynamic is the prospect of a future of haves and have-nots between those benefitting from AI tools and those stuck in the pitlane, relying on increasingly inferior legacy technology.

This exploration phase of Gen AI may give an initial advantage to larger hedge fund managers with greater access to resources for R&D. Still, smaller hedge fund managers can keep up the way they always have by being agile and innovative in their approach to new technologies. An openness to new opportunities and a readiness to leverage Moore's Law means that as the cracks of a new technology gap appear, which side of the divide firms are on is up to them.



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Acknowledgments

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- Silvana Beckley, Compass Group
- Paul Cole, GAM Systematic
- Roberta Osborne, Blackstone
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Algorithm	A process or set of rules a computer follows in calculations or problem-solving operations
Artificial Intelligence (AI)	A branch of computer science that simulates intelligent computer behaviour
AI prompt	Inputs or queries that a user or a program gives to a Gen AI tool, in order to elicit a specific response from the model
Bias in AI	Refers to an AI system's tendency to produce results that are systematically prejudiced due to erroneous assumptions in the machine learning process
Big Data	The vast datasets that can be analysed computationally to reveal patterns, trends, and associations
Chatbot	A software application used to conduct an online chat conversation via text or text-to-speech instead of providing direct contact with a live human agent
Computer Vision	A field of AI that trains computers to interpret and understand the visual world, enabling them to recognise objects, faces, and scenes
Data Mining	The process of discovering patterns and knowledge from large amounts of data
Deep Learning	A type of machine learning involving neural networks with many layers, enabling the model to learn complex patterns in data
Ethics in AI	The branch of ethics that examines the moral aspects of technology and its uses, particularly concerning AI
Generative AI	A field of AI where systems can generate new content or data that is similar but not identical to the training data
Generative Adversarial Networks (GANs)	A class of machine learning frameworks where two neural networks contest to generate new, synthetic data instances
Machine Learning (ML)	A subset of AI focused on developing systems that can learn and adapt without following explicit instructions

Natural Language Processing (NLP)	A field of AI focused on the interaction between computers and human language, including the programming of computers to process and analyse large amounts of natural language data
Neural Network	A computational model inspired by the human brain, consisting of interconnected nodes (neurons) that process information
Predictive Analytics	Using data, statistical algorithms, and machine learning techniques to identify the likelihood of future outcomes based on historical data
Reinforcement Learning	A type of machine learning where an agent learns to behave in an environment by performing actions and seeing the results
Retrieval Augmented Generation (RAG)	RAG is a technique in natural language processing and machine learning that combines the strengths of both retrieval-based and generative models to enhance the quality and relevance of generated text.
Supervised Learning	A machine learning technique that trains models on labelled data (data with known outcomes)
Transformed Models	A type of neural network architecture primarily used in NLP, known for their effectiveness in understanding text context
Unsupervised Learning	A machine learning technique that trains models using neither classified nor labelled data

Key Findings

- **High adoption rate:** 86% of hedge fund manager respondents permit their staff to use some form of Gen AI tools to support their work.
- **Versatility:** Among the more popular ways that hedge fund managers use Gen AI tools are to help enhance marketing materials, support their coding efforts, and for general research purposes.
- **Preferred Gen AI tools:** ChatGPT is the top choice among hedge fund managers for Gen AI applications, followed by Bing and Bard.
- **Anticipated industry disruption:** Research, IT, legal and compliance, and investor relations are the hedge fund business functions most likely to be significantly disrupted by Gen AI, as forecasted by survey respondents.
- **Portfolio management potential:** While the use of Gen AI tools in portfolio management is currently limited, a noteworthy 20% of larger hedge fund managers foresee substantial disruption in this area within two years.
- **Challenges to adoption:** Top challenges for Gen AI integration include data security and privacy concerns, inconsistent responses, and the need for comprehensive staff training.
- **Specialist training:** Only around 10% of respondents have received Gen AI training, but almost half of larger hedge fund managers (those managing more than \$1 billion) and 26% of smaller ones plan to offer training within the next six months. Nearly half (47%) of all respondents considering training in Gen AI are exploring third-party services, presenting opportunities for training providers.
- **Hiring trends:** Around a third of respondents said it would be important that some or all of their upcoming hires have experience using Gen AI tools. Of these, 10% say this will be important for front-office hires, and, somewhat surprising, 7% say this will be important for middle/back-office roles.

Methodology

The findings of this report follow a survey of some of AIMA's hedge fund manager members during Q4 2023. In aggregate, the 157 respondents manage an estimated \$783 billion, with an average assets under management (AUM) of \$5 billion.

Additional insights came from interviews with hedge fund managers and AI consultants who shed further light on the various approaches hedge fund managers of different sizes, strategies, and locations are taking towards Gen AI. Throughout this analysis, we will compare the findings from responses by large and small hedge fund managers, where larger hedge fund managers are considered those with more than \$1 billion AUM.

Of the total pool of survey respondents, there was a 51/49 split in favour of larger hedge fund managers.

Figure 1. Strategy breakdown

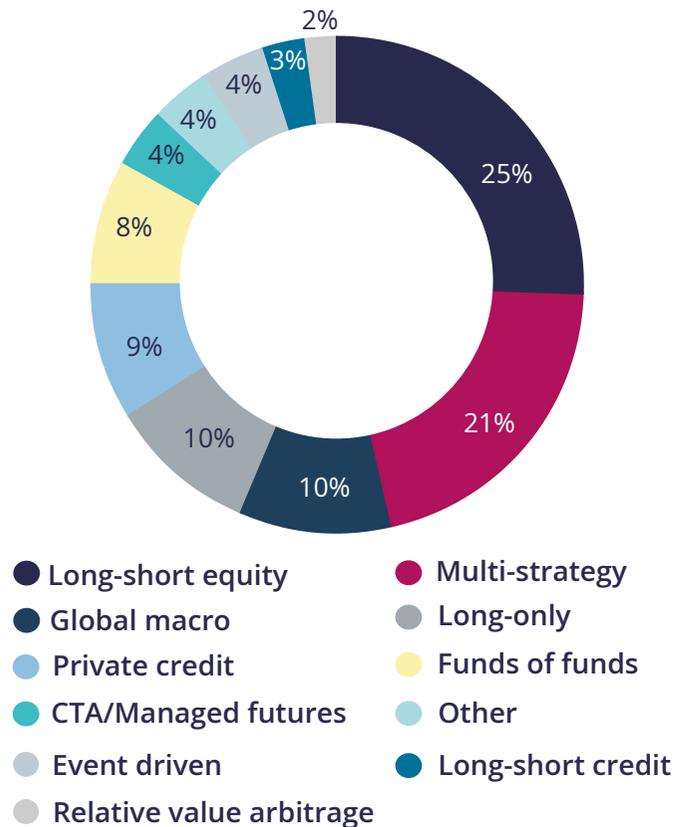
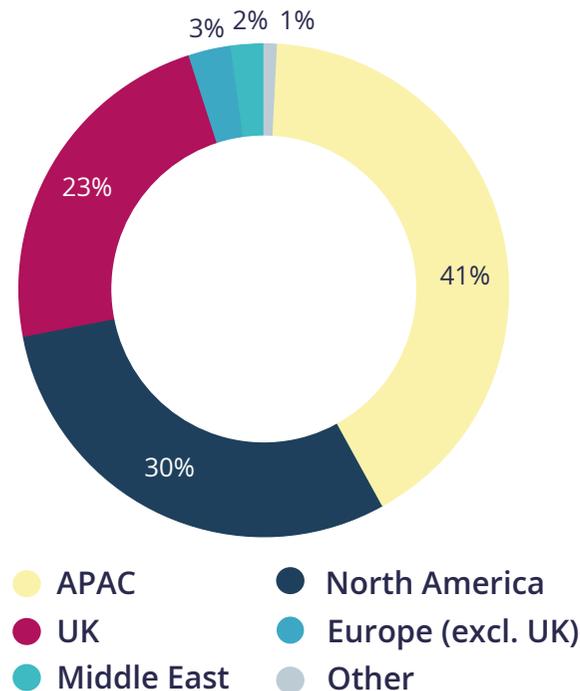


Figure 2. Region breakdown



"Gen AI is a transformative force within our industry, with the potential to impact every aspect of what we do and how we do it."

"While embracing new technology demands a thorough acknowledgment of associated risks, these risks are manageable with rigorous training, clear policies, and collaborative frameworks."

"A holistic approach, championed by experts from across our firms and in AI, is essential for realising the full spectrum of AI benefits. With AI tools, coupled with human expertise, we can chart a course toward a potentially profound industry evolution coupled with enduring benefits."

Alistair Rew
Chair
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What is Gen AI?

Generative AI refers to a subset of artificial intelligence more formally known as a large language model (LLM). These tools are considered generative as they train on vast datasets to create content, including text, images, music, or other forms of media. This report uses the catch-all term of Gen AI tools rather than LLMs.

Gen AI tools act as digital assistants capable of generating approximations of your requested content by studying existing examples.

Crucially, Gen AI tools do not understand the content they generate. They apply probability learned during training to predict what should come next. It looks at your prompt, considers what it has learned about how words or other elements typically come together and generates the next part of the content based on the highest probability.

For example, ask a Gen AI tool: "What is $1 + 1$?" and it will review its bank of learned data and see that the most likely answer is 2.

To create text answers, it applies the same logic, along with a degree of context from the details in the user's prompt, to decide what the most likely next word should be.

For example, if your prompt is a question about 20th-century geopolitics or weather patterns in Russia, that context allows it to predict whether the word 'war' or 'wind' is the most appropriate word to follow 'cold'.

Equally, if you ask for a picture of a red dog, it will search for the most common shape of the image associated with a dog and the shade most commonly assigned to the colour red, shade the dog shape accordingly and present it to you. It does not understand the concept of a dog.

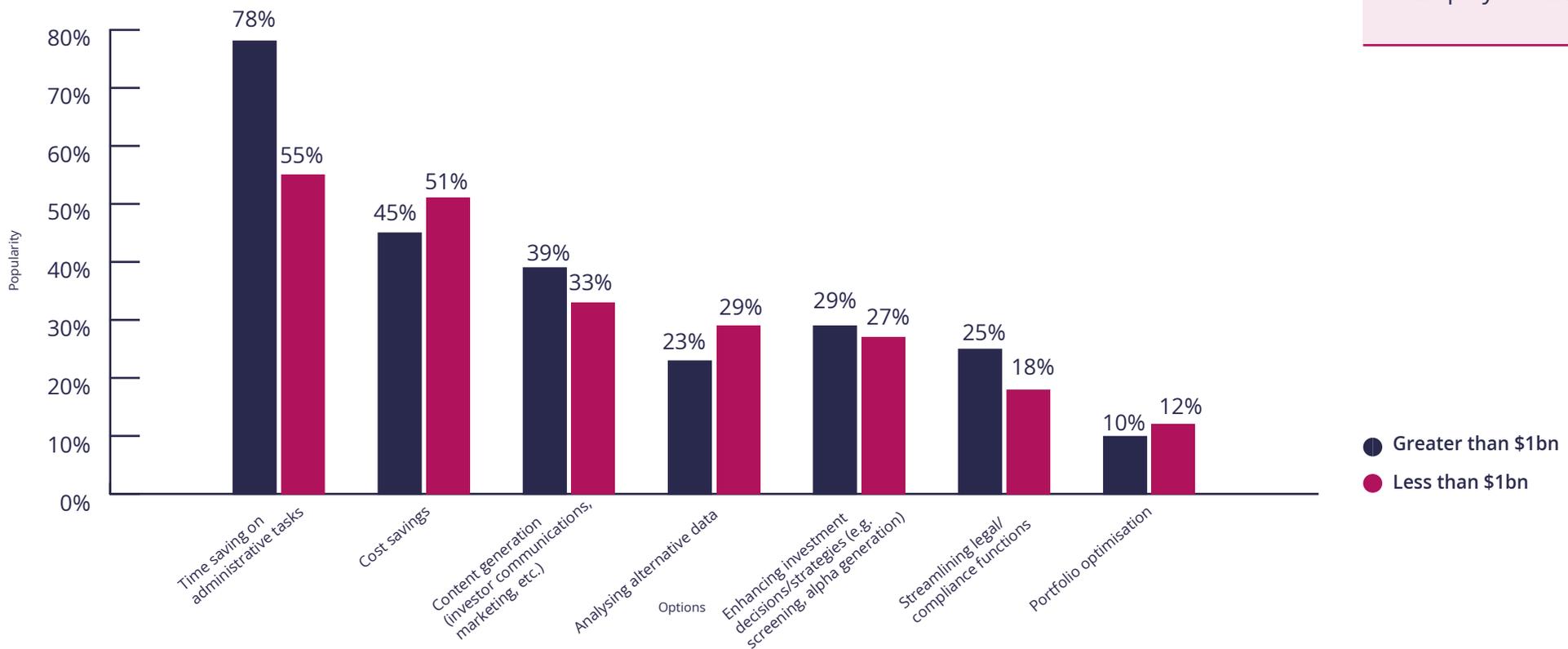
Glossary

Readers can find a glossary of AI-related keywords and terms on page 6.

Part I: Considerations for engaging with Gen AI

Asked to identify the main advantages of embracing Gen AI tools, hedge fund managers surveyed overwhelmingly pointed to time and cost saving, primarily related to carrying out marketing and investor communications, as well as general administrative tasks, see Figure 3. Notably, only around one in four respondents believe Gen AI can enhance investment decisions, and even fewer think it can support portfolio optimisation, at least in its current form. However, some predict this may change as Gen AI tools evolve, as we will discuss later in this report.

Figure 3. The main advantages hedge funds say will come from embracing Gen AI tools. (Multiple-choice question)



86%

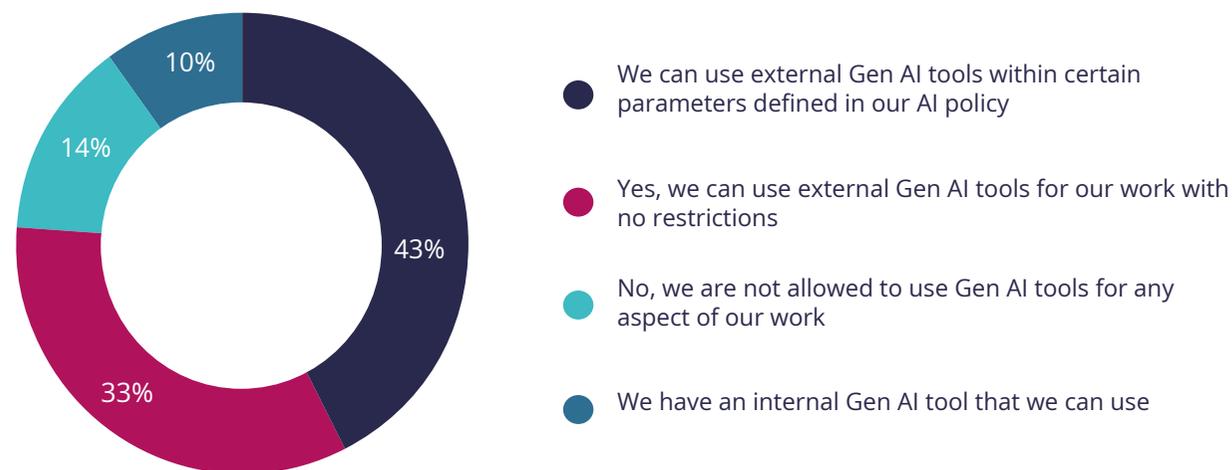
of hedge fund managers polled allow Gen AI tools to be used to support their employees' work.

The main advantages of Gen AI tools are equally clear to both large and small hedge fund managers polled, but the differences start to appear in the degree to which they are currently applied and the type of Gen AI tools they can access.

Prevalence of Gen AI use among hedge funds

More than 80% of survey respondents said their firm permits them to use either external or internal Gen AI tools to support their work, see Figure 4.

Figure 4. Does your firm allow the use of Gen AI tools?



Most firms are using the generic 'open-access' version from their preferred provider. One in three can do so without any restrictions, while 43% must adhere to parameters outlined in the firm's AI policy document. Gen AI experts interviewed for this report emphasised the importance of offering guidance on using Gen AI tools, especially for those using an open-access version, to avoid data breaches or other compromising situations.

Firms are also building their own Gen AI application, leveraging foundation models (via APIs or open-sourced models) instead of off-the-shelf tools. This requires a step up in investment, which can be significant, depending on the level of customisation needed (See ManGPT case study on page 14).

Just over a third of respondents use a company-specific model either partly or wholly, with a further 10% moving to one, see Figure 5 (overleaf). Of those already leveraging a company-specific model, half are multi-strategy managers with \$20 billion or greater under management.



Explained:

Open-access versus company-specific models

External Gen AI tools: An external or open-access model relies on access to the third-party provider for cloud storage, where the LLM draws on the generic training data of the provider. Importantly, open access models require prompts, including any data included, to be sent outside the firm, which may violate data privacy policies.

Internal Gen AI tools: A company-specific version of a Gen AI tool refers to a specialised, often proprietary application of Gen AI designed exclusively for use in a business environment. These versions are tailored to meet the specific commercial needs of a business, offering advanced features, enhanced performance and often greater security and support compared to the open-access version.

While these tools can be a significant investment, the potentially higher return on investment can justify the cost. In addition to any feature offered via open access, company-specific versions include the following aspects:

- **Customisation/integration:** Company-specific versions of Gen AI are often customised to fit specific business needs. These can be integrated with existing company systems, workflows, CRM, etc.
- **Security and compliance:** Given the sensitive nature of business data, these tools often come with enhanced features and compliance with relevant regulations (e.g. GDPR), ensuring data is handled securely.

Laying the foundations with an AI policy document

Encouragingly, nearly half of those surveyed that do not have a Gen AI policy document are drafting one. Currently, larger hedge fund managers are much more likely than their smaller peers to have a policy document, and most of those who don't are drafting one. Meanwhile, half of smaller hedge fund managers that don't have a policy aim to publish one soon, but that would still leave a greater proportion of them without one, which could expose staff to easily avoided pitfalls if the appropriate usage guardrails aren't applied.

Interestingly, when asked who owned the policy document within their firm, there wasn't a definitive answer among the C-suite options listed. Chief Technology Officer was the most popular option (26%), followed by Chief Operating Officer (21%) and Chief Compliance Officer (17%), which offers some insight into the different approaches firms are taking to incorporating Gen AI, see Figure 6. The industry experts interviewed for this report suggested that drafting a policy document is a valuable way to stimulate a conversation about how Gen AI tools might help or hinder a business.

Much, though not all, of the case for a policy document stems from a need to limit the risk of staff using confidential or identifiable information with a third-party tool via their prompts. This partly explains why company-specific models – although expensive – are attractive options. Moreover, interviewees frequently explained that the full potential of Gen AI tools can only be unlocked within the confines of a company-specific model, as it allows for a much greater range of use cases leveraging internal data.

Figure 5. What type of Gen AI tool do you use?

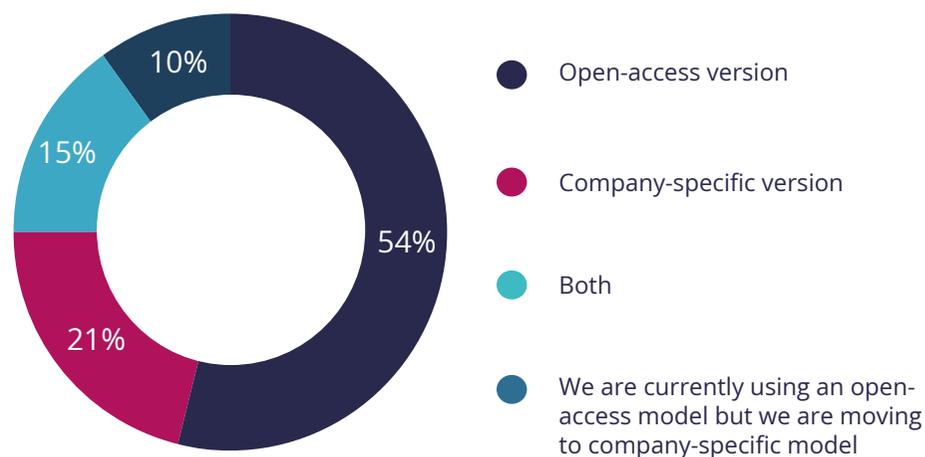
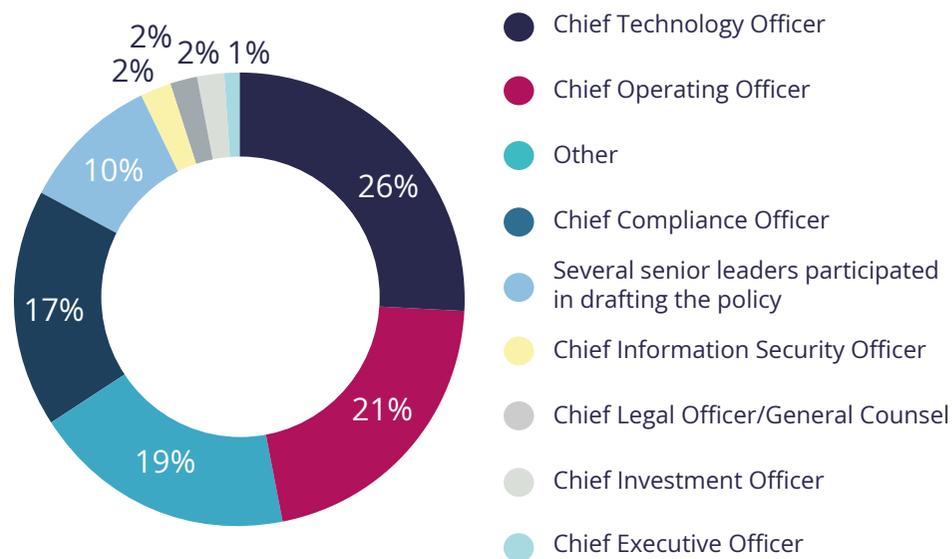


Figure 6. Who owns the AI policy at your firm?





Case study: In 2023, Man Group in-housed OpenAI's ChatGPT to create 'ManGPT'

Man Group is a technology-driven asset manager, and our passion for technology naturally drove us towards exciting advancements in large language models.

Man's journey towards the in-house adoption of ChatGPT was spearheaded by a proactive group of engineers who recognised the transformative potential of large language models. In early stages, the technology's risks were relatively uncharted, and the market for enterprise-grade solutions was nascent. This made it somewhat difficult to open broad access to this new class of technology. However, due to the clear potential of the technology to transform the business, a select group of engineers received approval to develop using Azure's OpenAI API. This team rapidly showcased the significant value ChatGPT could bring to our firm. The engineering work in isolation, however, would not be enough to bring AI to the business. We must also consider the risks to the business and be prudent when pushing into uncharted territory. Key stakeholders from information security, legal, and compliance departments were engaged, and their joint effort led to the development of a Generative AI policy. This policy enabled the firm-wide use of this technology while maintaining a strong emphasis on risk mitigation—in particular, preventing unintended IP leakage.

Alongside developing this policy, we created an in-house platform to serve as a secure bridge to external AI tools. The driving force behind our decision to internalise these tools was rooted in our dual objectives: to rapidly equip our workforce with state-of-the-art technology while maintaining a secure and controlled environment. The key differentiator between our in-house application and the available third-party tooling is the ability to easily log and monitor usage to ensure policy compliance without risking IP leakage. As our familiarity with the technology has increased, we have incrementally eased our policy restrictions. This has allowed for a broader spectrum of internal data to be utilised by these AI tools.

Since implementing these tools, a diverse range of use cases have emerged. These include assistance with programming queries, text rewording, and meeting note compilation. Our employees have also shown a keen interest in Retrieval Augmented Generation (RAG), prompting us to focus our R&D efforts on enhancing the RAG experience. Furthermore, we've seen many teams begin developing their own integrations through the API exposed by our platform. Examples include Slackbots, data enrichment and validation tools, and first-line support utilities.

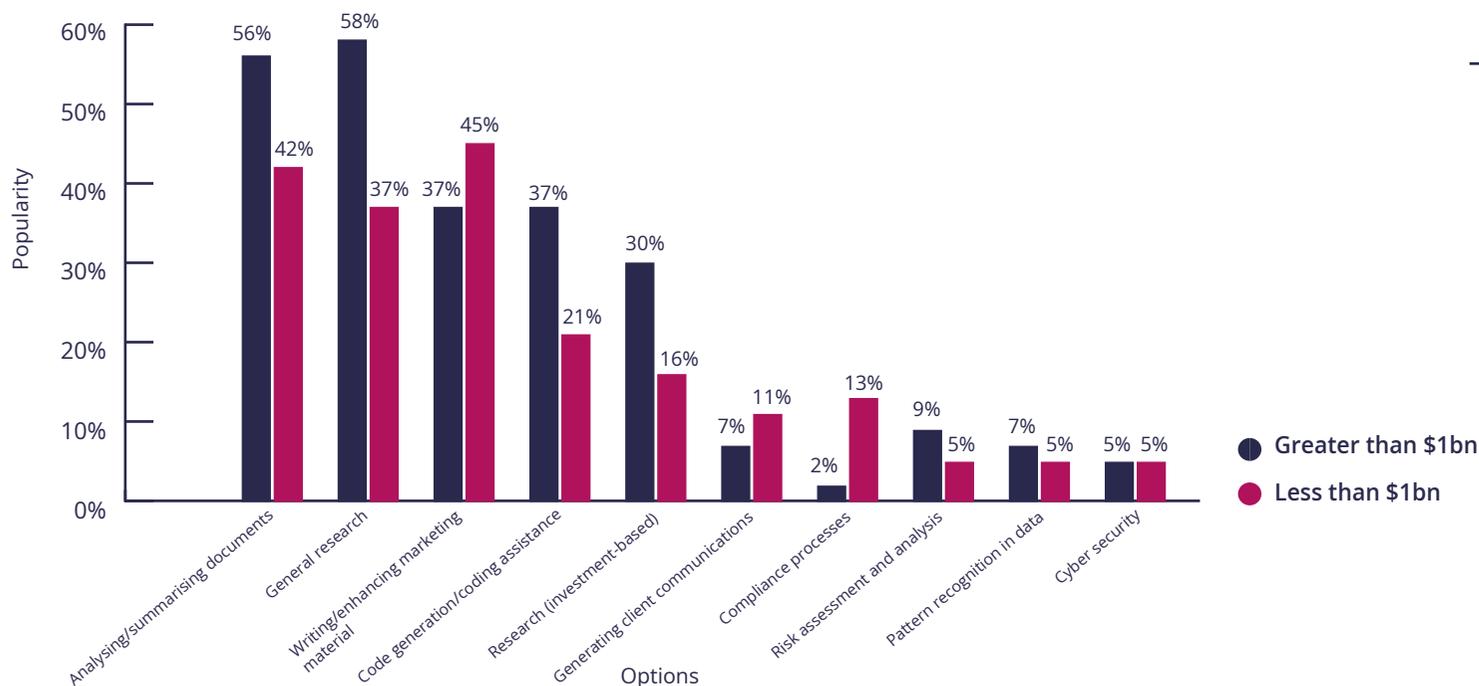
Finally, we recognise that the industry will be able to provide AI-powered products that would be impractical for us to create on our own. Therefore, we are also actively engaging with third-party providers to equip our workforce with the best possible tools, thereby fostering a culture of innovation and continuous improvement.

In conclusion, Man Group's journey to in-house ChatGPT has been transformative, driven by a proactive engineering team and facilitated by careful risk management. Our strategic decision to internalise these tools allowed us to rapidly equip our employees with cutting-edge technology while maintaining a secure, controlled environment. This innovation has borne various valuable use cases, from programming assistance to developing unique integrations, underlining the expansive potential of AI tools. As we continue to adapt and grow, we remain committed to fostering a culture of innovation and continuous improvement, making the most of the opportunities offered by AI technology while responsibly navigating its risks. Our experience demonstrates that a cautious yet proactive approach to adopting such technologies can benefit any organisation significantly.

Part II: Use cases of Gen AI by hedge funds

The operations of hedge fund managers already impacted by Gen AI include sales, marketing (including communications), and legal and compliance. As per our survey results, firms are using Gen AI tools to accelerate tasks such as analysing documents, including editing, summarising, answering questions and drafting new content, see Figure 7 and an explainer on the distinction between general and investment research below.

Figure 7. Uses for Gen AI tools identified by hedge fund managers. (Multiple-choice question)



"Given how recently Gen AI appeared in the spotlight for business, and the public more generally, it's been amazing and sobering how quickly things have evolved in the past year or so. Based on the rapid progression of tools, this doesn't look like plateauing anytime soon. We have had success with our own in-house Gen AI tools as well as the plethora of tools available on the market, with a small cross functional team leading the rest of the business in exploring them across multiple operational areas."

Derek Hardiman
Chief Technology Officer
Abbey Capital



Figure 7 note on general research – in this instance, general research is defined as non-investment research, including web scraping to collect Internet and social media data. Some firms are using Gen AI tools to help produce their non-investment content, including social media output. A Gen AI tool can analyse customer reviews to determine sentiment and gauge customer satisfaction. Natural Language Processing (NLP) models can read these sites' articles like a person would (albeit read and interpret vast amounts of data at a rate quicker than any human) and flag any trends.

The information is then exported into a more useful format for the user, including populating a spreadsheet or an application programming interface (API), which can help businesses gain better insights into customer behaviour.

Efforts to automate parts of the coding process, which can be tedious and time consuming, have been underway for years. The rapid progress in Gen AI has spurred hedge fund managers to explore how it can play a pivotal role in coding and related developments. Empowering developers through the automation of routine tasks allows them to focus on more complex and creative endeavours, ultimately enhancing overall productivity.

Some interviewees envisage a future where a few senior software developers oversee semi-autonomous Gen AI tools rather than teams of people writing and testing code. Conversely, some firms – including but not exclusively hedge fund managers – see tools such as Gen AI as a way to alleviate the burden of tech/IT teams by allowing a wider variety of staff to engage with building or refining technology. By gifting non-specialist staff with a Gen AI assistant, they may become able to complete some coding and software development tasks themselves without raising a ticket with the IT team.

As described by one AI lead at a large US hedge fund manager, the idea is to create an "AI-augmented workflow" where the Gen AI tool can assist the analyst by transforming natural language prompts into coding suggestions across dozens of programming languages. Some of the firms we spoke to are experimenting internally with Gen AI tools to help their developers automatically generate and test code.

As we will see in the next section, half of all the larger hedge fund managers surveyed believe Gen AI will significantly disrupt the technology function in the next two years. Moreover, anecdotal evidence suggests that IT teams may be more exposed to headcount reductions than other functions due to Gen AI's radical opportunities to streamline processes.



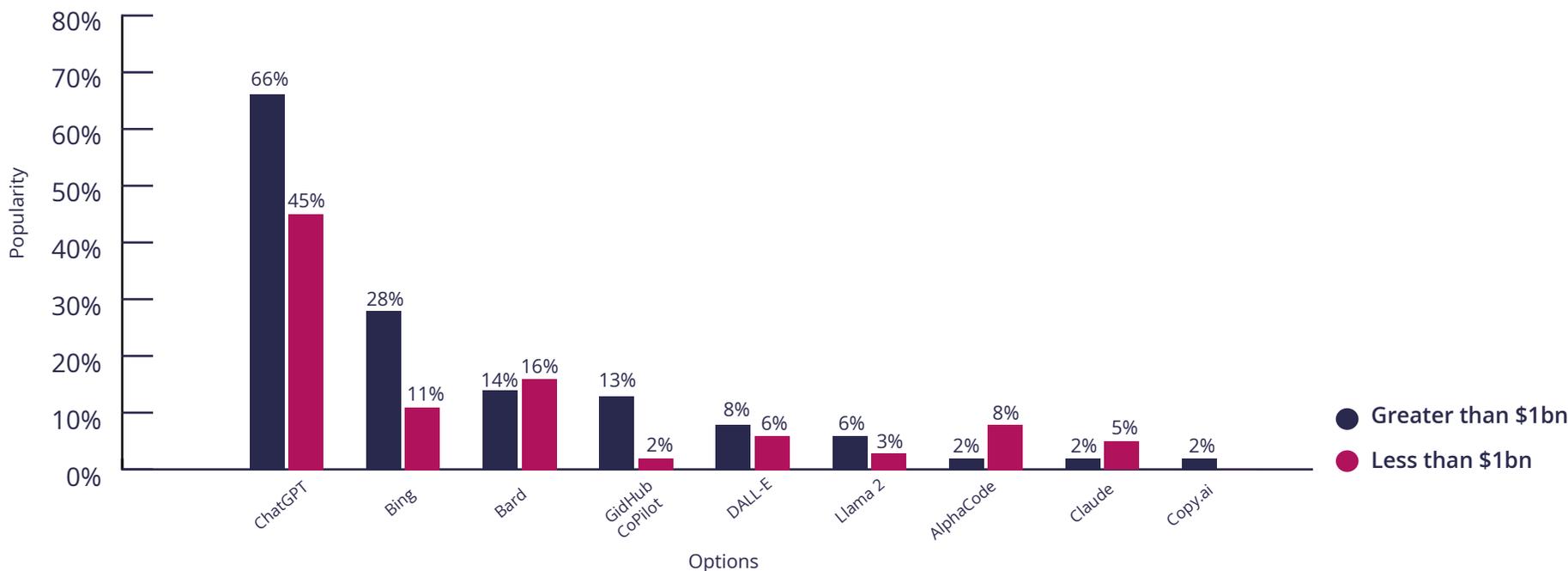
For example: A portfolio manager with modest coding skills could task a Gen AI tool to create and test the code needed to customise their trading dashboard, including generating new APIs to draw on bespoke alternative datasets.

Much like the application of Gen AI to the research function, the paradigm requires a somewhat knowledgeable user about the subject they are prompting the tool to generate content about. However, unlike the research team, those seeking coding assistance will be able to verify the accuracy of the response on a low-risk, internal system, as opposed to expressing it in an analyst note or, worse still, a trade.

Most popular types of Gen AI tools currently used by hedge fund managers

Unsurprisingly, most respondents use ChatGPT as their Gen AI tool of choice, followed in a distant second and third by Bing and Bard, respectively, see Figure 8. This likely reflects the current use cases of Gen AI, primarily focused on text generation and document analysis.

Figure 8. Which Gen AI tool do you use/have you used to assist you with your work? (Multiple-choice question)



This graph may look different when this survey is re-run as users become more confident and comfortable with more specialised LLMs such as AlphaCode and Llama 2, which focus on coding.

Note: this question did not offer an exhaustive list of Gen AI tools, which are growing rapidly. On page 18, there is a table outlining some of the most popular Gen AI tools, as defined by representatives of hedge fund managers.

Breakdown of types of Gen AI tools

AI tool	Definition	Typical uses
AlphaCode	Developed by DeepMind, it's an AI system designated for writing computer programmes	Competing in coding competitions, writing algorithms, automating programming tasks
Bard	Google conversational AI model designed to provide information and generate text	Conversations, answering questions, generating text based on queries
Bing AI	Microsoft's integration of AI into its Bing search engine enhancing search capabilities with AI features	Enhanced search queries, generating summaries, providing answers with contextual understanding
ChatGPT	A language model developed by Open AI capable of understanding and generating human-like text	Text generation, conversation, content creation, educational purposes
Claude	An AI language model developed by Anthropic, focusing on safety and ease of use	Conversational AI, text generation, user-friendly and safe interactions
Copy.ai	An AI tool specialising in generating marketing copy and content	Creating marketing materials, social media posts and other written content for businesses
DALL-E	An AI programme by Open AI that creates images from textual descriptions	Generates original artwork and visual content from text descriptions
GitHub Copilot	An AI programmer that helps write new code and understand existing code developed by GitHub and Open AI	Assists in coding, suggesting code snippets, understanding and navigating large codebases
paLM2	A large language model developed by Google known for its high performance in language tasks	Advanced language tasks, problem-solving, creative writing, coding assistance
Llama 2	A large language model developed for a variety of natural language processing and understanding tasks	Text generation, translation, summarisation, question-answering, and other language related applications

Source: ChatGPT-4, AIMA

Part III: Future opportunities and barriers to adoption for hedge funds

Many hedge fund managers surveyed anticipate that Gen AI will significantly disrupt their business models in a wide variety of ways over a relatively short period. Below, we juxtapose the existing use cases of Gen AI with the list of functions that survey respondents believe will undergo substantial changes, positively or negatively, due to the impact of the Gen AI tool within the next two years. Figure 9 revisits the comprehensive use cases presented in Figure 7 and aligns them with Figure 10, which shows the functions survey respondents identified as most likely to experience disruption. Making this comparison provides valuable insights into the potential trajectory of Gen AI integration within the operations of hedge fund managers.

Figure 9. The current use cases of Gen AI. (Multiple-choice question)

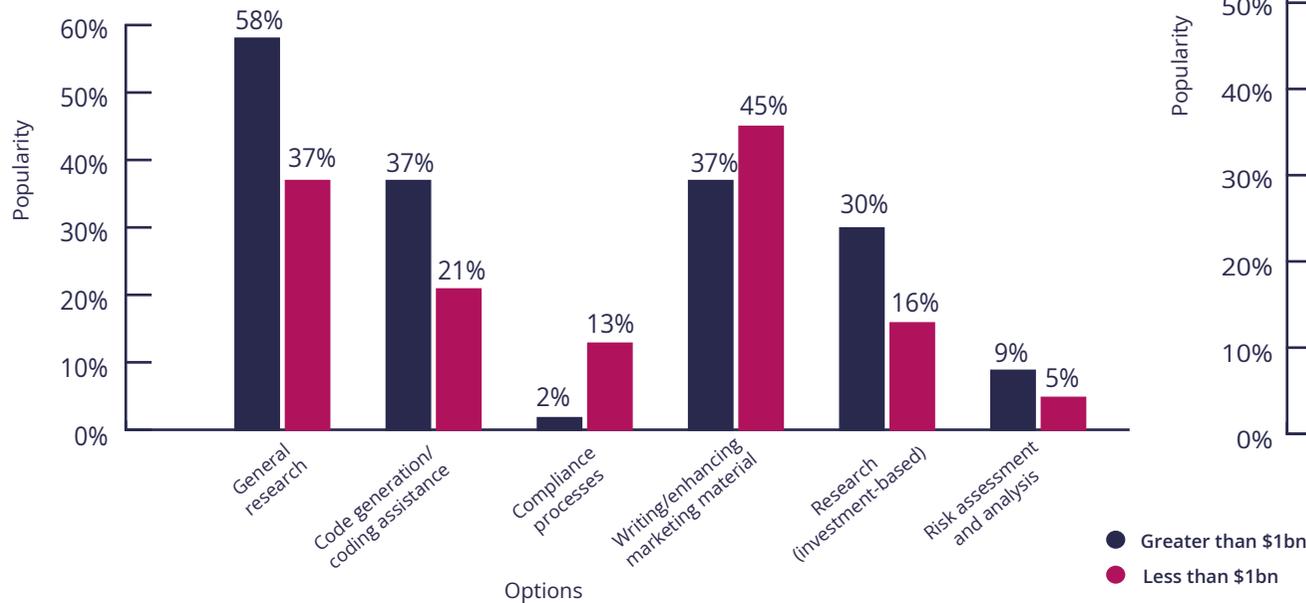
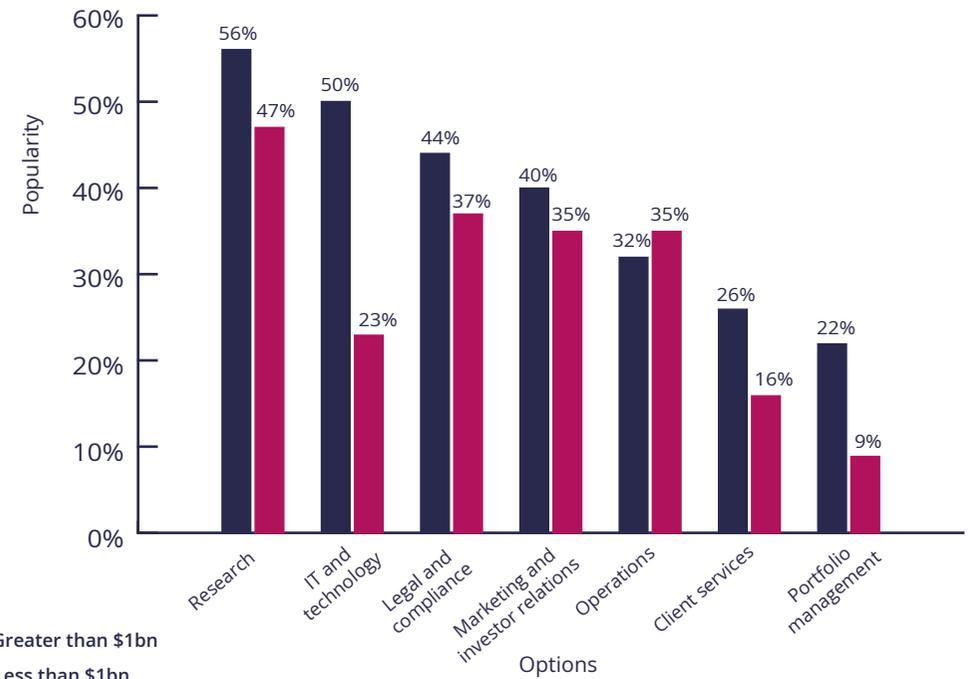


Figure 10. Functions likely to see significant disruption due to Gen AI over next two years. (Multiple-choice question)



The standout column in Figure 10 is the significant number of respondents – especially among larger hedge fund managers – that see legal and compliance as prime for disruption by Gen AI, compared to the relatively few currently employing such tools in that department, demonstrated in Figure 9. The same is valid to a lesser extent for investor relations and client services. There is also agreement that Gen AI will be an increasingly disruptive factor in business operations, even if the exact scale is up for debate.

Enhancing investment strategies with Gen AI

Given the speed of technological advancements over the past few years, 2024 could be the breakthrough year for Gen AI to enhance the investment management process demonstrably. Although only one in five larger hedge fund managers we surveyed and one in 10 smaller hedge fund managers expect Gen AI-induced disruption in their portfolio management function, per Figure 10, that would still represent a significant increase from today. Moreover, a quarter of larger hedge fund managers and 17% of smaller hedge fund managers expect Gen AI tools to become part of their investment decision-making process in the next 12 months, see Figure 12. Although these are modest numbers, they imply an overall openness – particularly among larger hedge fund managers – to the prospect that Gen AI tools could play a more significant role in investment strategies.

Do you expect Gen AI tools to become part of your investment decision-making process in the next 12 months?

Figure 11. Overall survey respondents

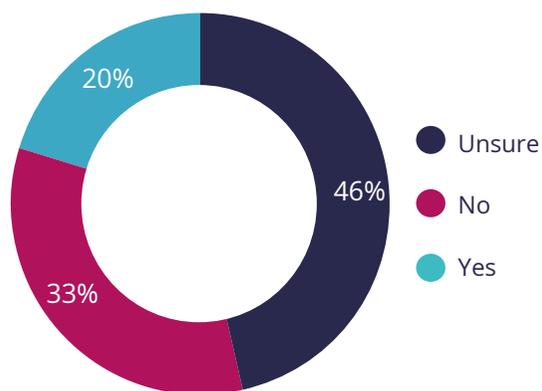
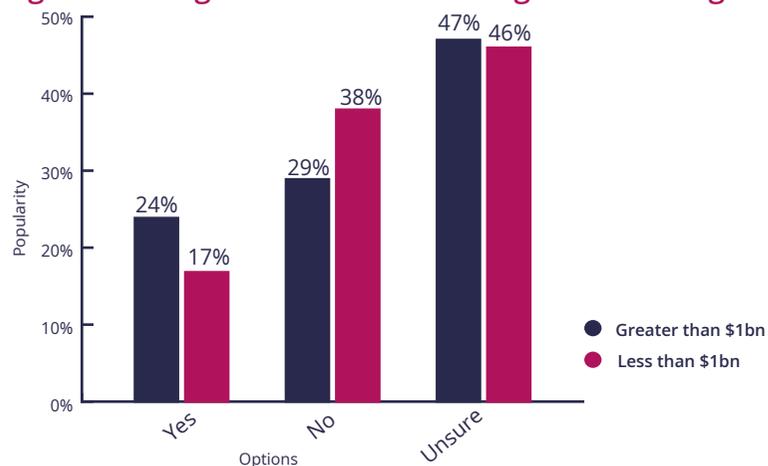


Figure 12. Larger versus smaller hedge fund managers



Early movers in this space are creating thematic baskets of stocks and using generative adversarial networks (GANS) to develop synthetic financial time series data to build and evaluate trading signals. There's a growing belief among investment managers that Gen AI-driven algorithms could significantly aid portfolio optimisation by analysing extensive datasets to pinpoint the most favourable asset mix for delivering risk-adjusted returns. Some firms we spoke to have opened their own Gen AI lab to explore use cases in an effort to generate alpha.

However, interviews with consultants and hedge fund managers raised questions about how Gen AI, as opposed to other forms of AI or machine learning, would evolve from improving efficiency in market research to a genuine source of alpha. They point to the fact that, by its nature, Gen AI is trained on existing (often public) data and is, therefore, unable to draw unique insights that are not already known to the market. The answer may be in the ability of Gen AI to highlight hard-to-spot patterns in large alternative datasets that other market participants are not incorporating.



"There are three layers where we see AI delivering efficiencies: alpha generation, portfolio construction and execution. In all those layers, AI can be beneficial."

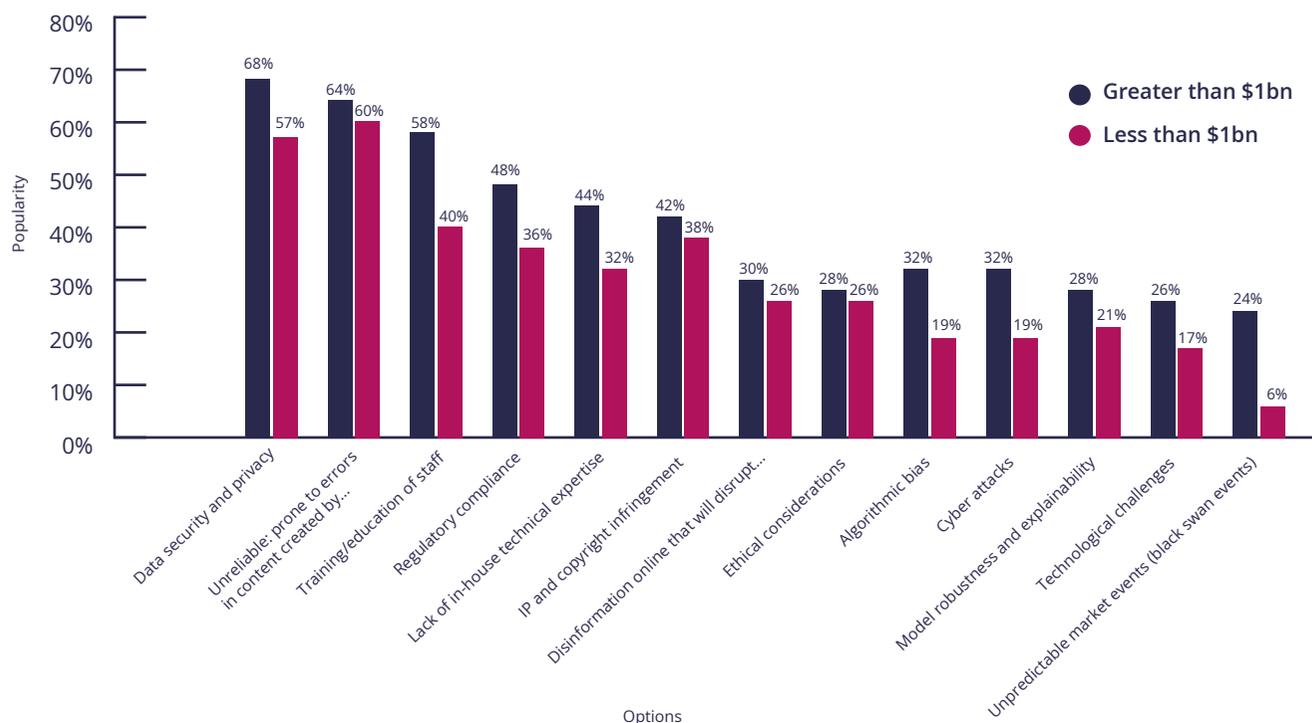
"For us, it's not just one area it's all three. We are also looking at other areas that are less involved in the investment process, where AI's recent advancements can also be beneficial, like legal, HR, and even research and development. But if we come back to the investment process and how we manage client money, it's across the three layers."

Benjamin Roy
Chief Technology Officer
Capital Fund Management (CFM)

Barriers to further adoption

Integrating Gen AI tools into hedge fund operations presents multiple challenges. Two-thirds of the survey respondents highlighted issues around data as their biggest challenge, see Figure 13. In the first instance, hedge fund managers flagged data security risks, especially concerns regarding confidential or proprietary information being entered into an external data repository and potentially being leaked or accessed by other users. To circumvent this, many hedge fund managers are building their own proprietary Gen AI tools, which, at a minimum, ringfences their data to ensure that all information is self-contained (See open-access versus company-specific models explainer, page 12).

Figure 13. What are the main challenges of incorporating Gen AI tools? (Multiple-choice question)



"While LLMs are very effective at integrating textual data to form a consistent view of the world, it turns out that, like humans, it can often be challenging for LLMs to process numerical data and perform accurate mathematical computation."

Dr Chris Longworth
Head of GAM Systematic



"The big question on my mind at the moment is: how can the investment management industry most effectively convert good ideas and concepts around Gen AI into realised value for organisations? There's a consensus I think that the hype around Gen AI is justified, but really capitalising on the capability is going to take some time."

My sense is this is going to be the key Gen AI theme for 2024, and I'm really excited about how we and other firms engage with it and, ultimately, move things forward."

Tim Mace
Head of Data and Machine Learning
Man Group

Understanding the errors: hallucinations, copyright, and bias

Gen AI tools are adept at creating compelling answers to questions and can be highly effective as creative sounding boards and editors. They can also be significant time savers thanks to their ability to parse large documents and distill the essence down to a few paragraphs or bullet points in a fraction of the time it would take a human.

However, their convincing responses belie the limitations of their understanding. Given they are at an early stage of development, these tools are strictly limited to the data they train on, and they have no concept that contradictory data may exist. For example, if you ask a Gen AI tool about an obscure historical event that did not exist in its training data, it will confidently tell you the event never happened. Even worse, these tools are also capable of making up facts. These errors are euphemistically called "hallucinations". According to the survey, these aberrations are the second-most-concerning challenge for hedge fund managers, and experts agree that AI requires a user who deeply understands the generated content. We discuss this quirk in the right-hand column.

One high-profile example of a Gen AI hallucination was the incident in 2023 when [two New York lawyers submitted a legal brief written by ChatGPT](#) that included six fictitious case citations. The judge accused the lawyers of acting in bad faith and fined them. There are many similar examples across various industries, underscoring the need for staff training before using these tools.

Gen AI content has also brought a host of copyright issues to the fore. Gen AI uses training data that includes many creative works protected under copyright laws and that, in most cases, have been included in the training of the AI system without the creator's knowledge or consent. If the dataset includes copyright materials, questions then arise as to whether the model's output constitutes a derivative work, which could potentially violate copyright laws. Acquiring the rights to use large datasets can be very expensive and complicated, potentially limiting the scope and effectiveness of Gen AI tools in hedge fund manager's operations.

Similarly, around 27% of hedge fund managers surveyed flagged ethical considerations. Using AI in investment strategies raises ethical questions, particularly around market bias and the potential for market manipulation. Moreover, Gen AI has increased the risks of deep fakes, phishing and fraud, and hedge fund managers should protect against these risks, or client relationships could be affected.

Somewhat surprisingly, given the leading concern relates to data security, relatively few survey respondents cited concerns about the threat of a cyberattack and fraud being among the main challenges arising from incorporating Gen AI tools. This discrepancy implies that the threat to a firm's data will come from improper use by staff rather than external attacks.



Gen AI hallucinations: Why it makes mistakes

Gen AI hallucinations are instances where a system generates false or nonsensical information, often confidently presented as true.

What causes hallucinations?

Lack of understanding: *Gen AI does not understand content in the human sense. They process and generate text based on statistical patterns rather than comprehension. This lack of real understanding can lead to the generation of plausible but incorrect or nonsensical information.*

Data quality: *If the training data includes inaccuracies, biases, or is not representative, the model may replicate these flaws in its outputs.*

Overfitting: *When an AI model is too closely tailored to the training data, it can struggle to generalise well to new, unseen data. The model might generate responses more reflective of the patterns it saw in the training data rather than the actual input it received.*

Cost implications

The development and implementation of Gen AI tools demand substantial investment. Per the survey results, the largest firms using Gen AI tools are making significant investments by hiring specialist Gen AI hires and/or building their own proprietary Gen AI capability. This may involve the creation of licensed customisable and proprietary models with data and machine learning platforms, which can run to a significant cost. The cost of using these technologies and bringing in expertise to manage them may therefore be prohibitive for smaller hedge fund managers, leading to a competitive disadvantage.

A newly appointed AI expert at a large US hedge fund manager we interviewed suggested that the cost of hiring the right people to lead on AI integration was the primary hurdle for many, rather than a lack of conviction in the technology.



The cost of training Gen AI tools on internal data can be around \$4 million, according to sector specialists. More advanced models could cost up to \$10 million.

Source: CNBC



One interviewee explained that the challenges with training starts with the fact that each function within a hedge fund manager will need tailored training as their uses of Gen AI will differ.

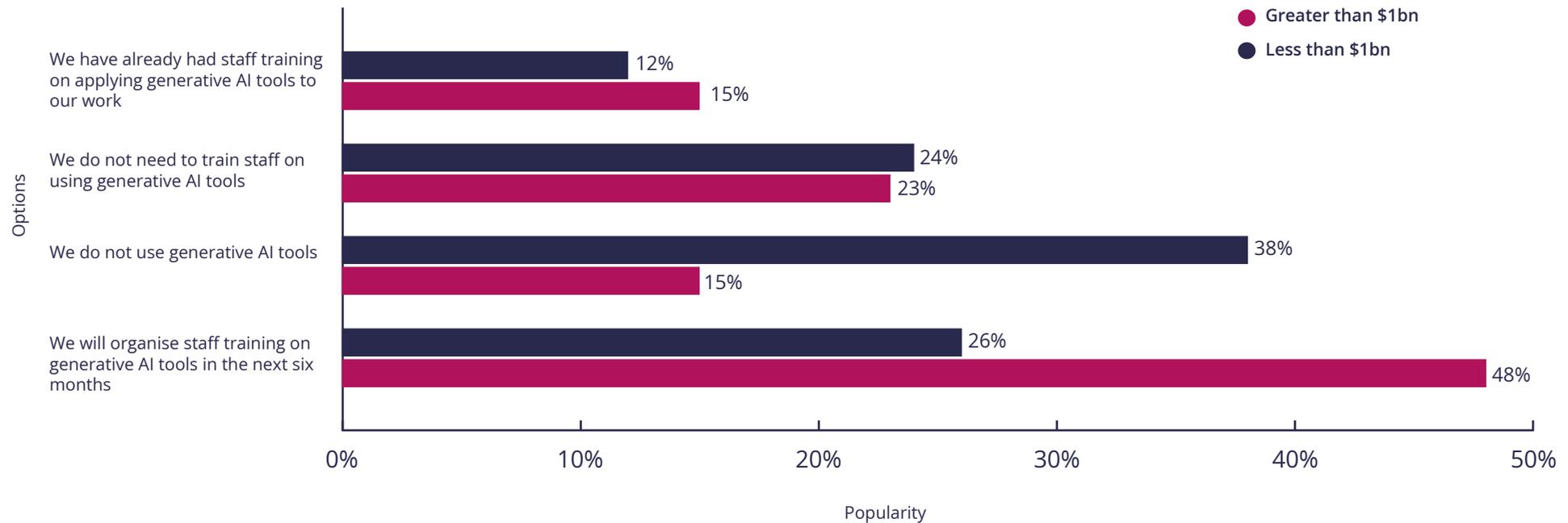
Equally, discovering appropriate use cases within each function would also require the Gen AI tools to be managed by a multi-disciplinary team.

Training

The survey demonstrates how hedge fund managers are adopting various approaches to staff hiring and training. Overall, roughly half of hedge fund managers surveyed said they would offer training or already have. But, once again, the divide between large and small is apparent. The top and bottom columns in Figure 14 are indicative of what may be an emerging trend for Gen AI adoption by hedge fund managers. Currently, the gap between larger and smaller hedge fund managers surveyed that have offered training is minimal.

However, within the next year, you will be much more likely to have access to Gen AI tools and receive training in using them if you work at larger hedge fund managers. Interviewees commenting on this data point noted that access to the latest Gen AI tools and training may be an enticing hiring incentive for those who can offer it.

Figure 14. What types of Gen AI training are/will you offer to relevant staff?



When asked what type of training they would offer, just under half plan to use third-party training services, while an in-house AI lead will carry out training for a nearly equivalent percentage, see Figure 15. Meanwhile, fewer than one in 10 plan to hire someone responsible for training.

Hiring

Around a third of respondents said it would be important that some or all of their upcoming hires have experience using Gen AI tools, see Figure 16. It is not surprising that 10% say this will be important for front-office hires, but somewhat surprising that 7% say this will be important for middle/back-office roles.

Asked separately whether they would hire at least one dedicated AI expert within the next year, 18% said they plan to do so or are considering it. A further 11% said they already have an AI specialist in-house. These are among the largest hedge fund managers surveyed.

When asked about the process of hiring a Gen AI expert, several interviewees questioned what was meant by such an AI "expert". One person drew a comparison to hiring environmental, social and governance (ESG) specialists as the skills they would need depended on where in the firm they would sit and the problems they were trying to solve. I.e. are they applying climate data to inform investments in a commodity portfolio or navigating the increasingly complex ESG-focused regulations around fund names? The former calls for a data scientist, while the latter needs a lawyer, but both could be called 'Head of ESG'. Similarly, an AI specialist could come in many flavours and require a clear mandate to decide the appropriate skillset.

Figure 15. What form of training on Gen AI tools is being organised?

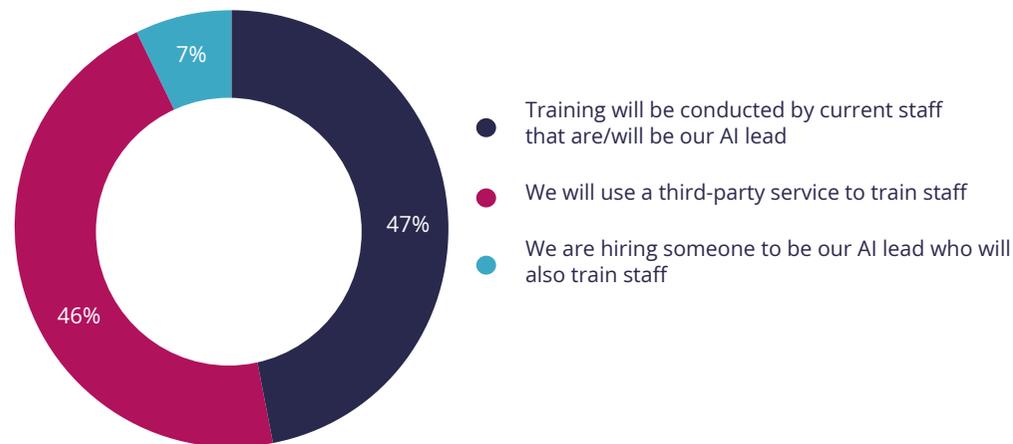
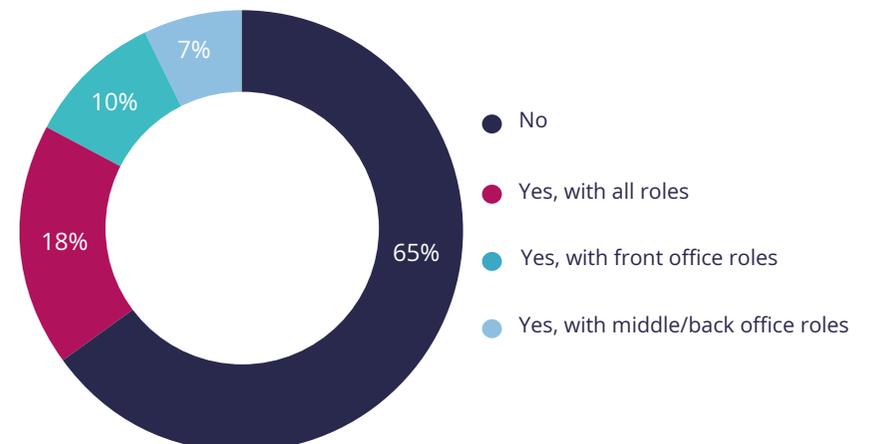


Figure 16. Will Gen AI experience be an important part of the hiring process for your firm in the short term?



Conclusion

This report demonstrates the breadth and significance of the change Gen AI could bring to the hedge fund business model. To some degree, every function across the firm will be affected. The largest hedge fund managers are already gifting their teams with a bespoke digital assistant, easing their workload and enabling them to focus on high-level tasks. This assistant will also graduate from what one interviewee described as "the world's best intern" to something much more sophisticated.

The launch of Microsoft Co-Pilot (see righthand column), for example, is widely considered the next big leap forward in adopting Gen AI within our professional and personal lives. As these tools mature and take on increasingly important tasks, the gap between those enabled by Gen AI and those without will become more apparent.

However, even those with limited resources could find use cases for open-access models to improve efficiency and avoid losing the new technology arms race. While it's true that the current technology has noticeable shortcomings, as highlighted by the respondents to this survey, the primary barrier to Gen AI adoption may lie closer to home.

At its core, Gen AI's effectiveness depends on the quality of data, the sophistication of models, and the understanding of the underlying financial theories and market dynamics. The phrase "garbage in, garbage out" remains as accurate as ever.

A successful adoption strategy, according to interviewees, will be a marriage between the user and the machine, where both are intimately aware of the other's needs. The firms that act now and achieve this first could reap the reward for years.

Hedge fund managers are inherently driven by the pursuit of any legitimate advantage over their competitors, and many view AI, especially Gen AI, as a significant opportunity to get ahead.



What is Microsoft Co-pilot?

Co-pilot is a Gen AI chatbot that uses natural language processing and machine learning to generate text and images. It is widely considered an improvement on even the latest version of open-source Gen AI tools due to its extensive customisation features that can utilise personal data and offer a broader range of use cases.

Larger hedge fund managers spoken to for this report are exploring how Co-pilot can be integrated right across the firm to allow access to relevant internal training data and, therefore, maximise effectiveness at improving efficiency.

The main differences between Co-Pilot and other LLMs include:

- Co-pilot is a Microsoft product that integrates with Microsoft 365 apps and services, such as Word, Excel, PowerPoint, Teams, and GitHub. By comparison, open-access LLMs are only available as APIs that can be integrated into different applications.
- Co-pilot uses the Microsoft Graph to access your data, such as your calendar, emails, chats, documents, and meetings, and provide personalised assistance. Other open-access LLMs cannot access your data but can use data from the internet to generate text and images.
- Co-pilot uses the same underlying technology from OpenAI as ChatGPT. However, they may have different versions, fine-tuning, and guardrails for their responses

Additional Resources

AIMA resources

[Checklist for Use of Generative AI by Investment Managers](#)

This checklist aims to help AIMA members identify how they can ensure safe, compliant and ethical use of generative AI tools within their business operations. By addressing the relevant sample questions, an investment manager can help ensure that their usage of generative AI tools aligns with legal requirements, ethical standards and the overall risk management strategy of the firm.

[The Long-Short Podcast: Full steam ahead or just hype – Unpacking the reality of Gen AI](#)

Dr. Mohammad Rasouli, a Stanford AI researcher, delves into the transformative potential of AI in our daily lives and answer whether AI is going to be evolutionary or revolutionary in how we do business.

Further reading

[GAM Systematic: What can LLMs offer the Systematic Manager?](#)

GAM Systematic's Chris Longworth discusses the rise of large language models in the investment world, their strengths and limitations, and assesses how systematic managers can maximise the opportunities they present.

[Goldman Sachs: The generative world order: AI, geopolitics, and power](#)

Escalating competition between the US and China, wars in Europe and the Middle East, and shifting global alliances have ushered in the most unstable geopolitical period since the Cold War. At the same time, we are experiencing what may be the most significant innovation since the internet: the rise of generative artificial intelligence. With the public release of ChatGPT on 30 November, 2022, the defining geopolitical and technological revolutions of our time collided.

[Man Group: Generative AI](#)

Cambridge Professor Neil Lawrence joined Yale Professor Nicholas Barberis and Duke Professor Campbell R. Harvey, along with practitioners from across Man Group, to discuss Generative AI. The discussion was moderated by Man Group's Otto Van Hemert.

About AIMA

The Alternative Investment Management Association (AIMA) is the global representative of the alternative investment industry, with around 2,100 corporate members in over 60 countries. AIMA's fund manager members collectively manage more than US\$3 trillion in hedge fund and private credit assets.

AIMA draws upon the expertise and diversity of its membership to provide leadership in industry initiatives such as advocacy, policy and regulatory engagement, educational programmes and sound practice guides. AIMA works to raise media and public awareness of the value of the industry.

AIMA set up the Alternative Credit Council (ACC) to help firms focused in the private credit and direct lending space. The ACC currently represents over 250 members that manage over US\$1 trillion of private credit assets globally.

AIMA is committed to developing skills and education standards and is a co-founder of the Chartered Alternative Investment Analyst designation (CAIA) – the first and only specialised educational standard for alternative investment specialists. AIMA is governed by its Council (Board of Directors).

For more information visit [aima.org](https://www.aima.org)



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