FStech & Red Hat Research Report

# AI in financial services:

## Trends, strategies and challenges


FStech In collaboration with Red Hat

# Introduction

The use of artificial intelligence (AI) and generative AI (genAI) is growing within financial services institutions (FSIs) and the technology is becoming increasingly sophisticated, taking on ever more complicated tasks.

There are many applications of AI in the financial services industry such as helping to prevent financial crime by flagging suspicious activity and improving lending decisions through more advanced modelling. Additionally, AI has the ability to automate routine tasks such as data entry, contributing to more streamlined back-office processes.

Red Hat and FStech surveyed key decision makers in the financial services industry including international banks, insurance brokers, asset management companies and payment services firms to examine how far FSIs are into their AI adoption journey and where they are facing hurdles to implement the technology.

For the purposes of this report, 'AI' refers to a broad range of computer systems capable of performing tasks that typically require human intelligence. This includes machine learning, natural language processing, expert systems, simulation, and robotics. The term encompasses both narrow AI (designed for specific tasks) and more advanced AI capabilities.

Where 'generative AI' or 'genAI' is mentioned, we are specifically referring to AI systems capable of creating new content, such as text, images, or code, based on training data. This includes large language models and other creative AI tools.

The survey provides a snapshot of the industry's current attitudes to AI and where FSIs could make more use of the technology.

# Methodology

FStech and Red Hat surveyed 100 financial services professionals from a range of leading financial institutions across the UK and EMEA regions.

**The key findings:**

1) **Data** – The majority of FSIs feel that their data is ready to facilitate the successful implementation of AI across their business but some firms said that there is still progress to be made before a completely successful AI strategy is possible. There are also number of data challenges currently facing firms, including data security and privacy risks; data latency; and poor data quality.

2) **Sustainability** – The role of AI in promoting sustainability is an emerging focus, with many FSIs recognising its potential to drive environmentally friendly practices

3) **Open Source AI** – While Open Source AI allows FSIs to set up AI technology to meet their specific needs, many FSIs are still in the early stages of recognising its potential benefits.

4) **Ethical AI** – The report indicates that FSIs are using a wide range of tools and measures to ensure the ethical deployment of AI in their business operations, suggesting that they take seriously their commitment to balancing innovation and responsibility.

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# Q1. How would you describe your organisation's approach to AI, including Open Source AI? [Select the most appropriate answer]

The survey results reveal a diverse range of approaches to AI adoption among FSIs. Only 15 per cent of respondents have a comprehensive AI strategy that includes a clear understanding and utilisation of Open Source AI tools and frameworks. This relatively low percentage suggests that many FSIs are still in the early stages of recognising the potential benefits of Open Source AI.

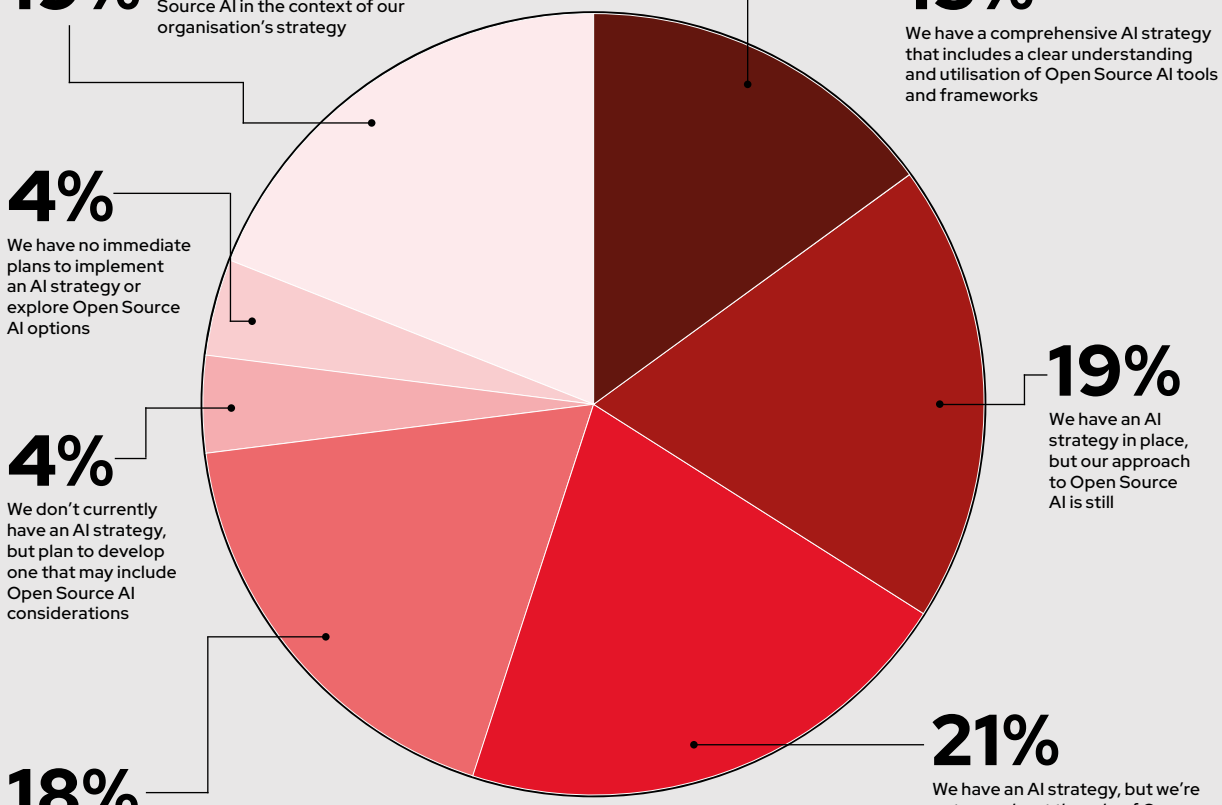
A significant portion of respondents (21 per cent) have an AI strategy but are uncertain about the role of Open Source AI in their plans. This indicates a need for greater awareness and education about the advantages of Open Source AI, such as cost-effectiveness, flexibility, and the ability to tailor solutions to specific organisational needs.

Interestingly, 18 per cent of respondents are in the process of developing an AI strategy and are exploring the potential of Open Source AI. This group represents a promising segment that could benefit from targeted support and resources to fully integrate Open Source AI into their strategies.

However, 19 per cent of respondents are not familiar with the distinction between Open AI and Open Source AI in the context of their organisation's strategy. This highlights a critical gap in knowledge that needs to be addressed to ensure that FSIs can make informed decisions about their AI investments.

The survey also underscores the importance of Open Source AI in preventing a handful of large companies from controlling and influencing the development of advanced AI technology, as recently highlighted by Meta chief executive officer Mark Zuckerberg.

Open Source AI platforms are growing rapidly and being increasingly adopted by organisations across different industries. FSIs for example can create and develop AI-enabled applications at scale across hybrid cloud environments.



# Q2. What are the top challenges for your organisation when it comes to implementing AI? [Select top three]

The survey identifies several key challenges that FSIs face when implementing AI. The primary concern, cited by 39 per cent of respondents, is regulatory compliance. This is a significant barrier, as the financial sector is heavily regulated, and any new technology must adhere to stringent guidelines.

The recent Global AI Safety Summit and the introduction of the EU AI Act in Spring 2024 underscore the importance of regulatory compliance. These regulations aim to minimise risks associated with AI deployment, ensuring that the technology is used safely and responsibly.

The Financial Conduct Authority (FCA), the Prudential Regulation Authority (PRA) have been leading discussions around regulation of AI within the UK's financial sector and have acknowledged the urgency of keeping pace with the complexity and fast pace of development of the technology.

Company culture is another major challenge, with 34 per cent of respondents highlighting it as a barrier. This suggests that there may be resistance to change within organisations, possibly due to a lack of understanding or fear of job displacement. To address this, FSIs can implement training sessions and internal communications to raise awareness about AI and its benefits, fostering a more AI-friendly culture.

Ethical concerns and a lack of skills or education are both cited by 33 per cent of respondents. Ethical concerns include issues such as bias in AI algorithms and the potential for AI to make decisions that could negatively impact customers. Addressing these concerns requires a robust ethical framework and ongoing monitoring of AI systems. The lack of skills and education points to a need for investment in training and development to ensure that employees have the necessary expertise to work with AI technologies.

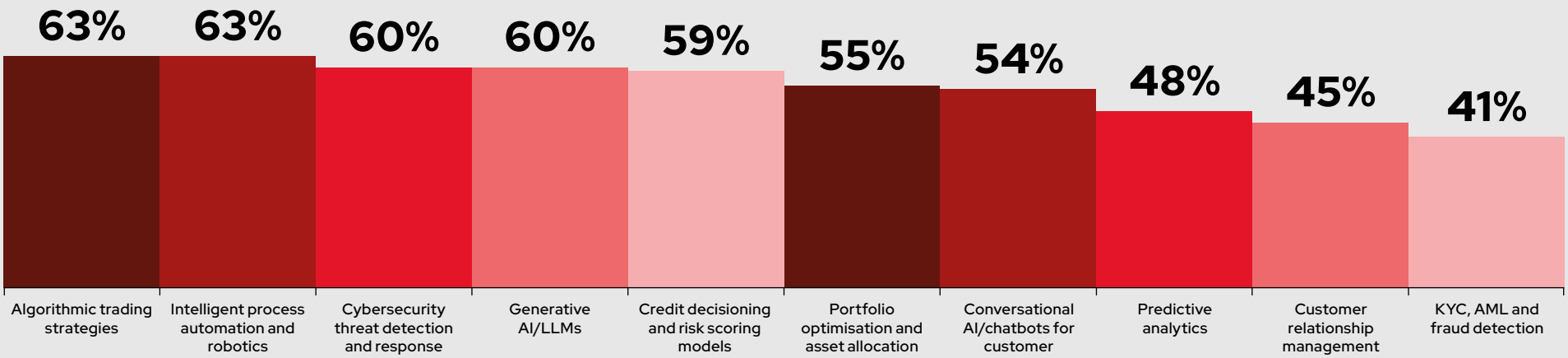
Other notable challenges include the lack of standardisation across AI workloads (32 per cent), lack of confidential computing capabilities (29 per cent), and data security/privacy risks (28 per cent). These issues highlight the technical and security hurdles that FSIs must overcome to successfully implement AI. Standardisation is crucial for ensuring consistency and interoperability between different AI systems, while confidential computing capabilities and robust data security measures are essential for protecting sensitive financial data.

Legacy systems are also a significant concern, cited by 28 per cent of respondents. Many FSIs rely on outdated technology that may not be compatible with modern AI applications. Upgrading these systems is a necessary step for integrating AI, but it can be costly and time-consuming.

Finally, poor quality data and data silos are mentioned by 22 per cent of respondents, and budget constraints by 21 per cent. High-quality, accessible data is the backbone of effective AI systems, and FSIs must invest in data management solutions to ensure their data is ready for AI. Budget constraints, meanwhile, highlight the financial investment required to implement AI, which can be a barrier for some organisations.

# Q3. Which of the following AI use cases is your organisation currently operating?

[Select all that apply]




The survey results indicate that FSIs are leveraging AI for a variety of applications, demonstrating the technology's versatility and potential to enhance operational efficiency and decision-making processes.

A significant 63 per cent of respondents reported using AI for algorithmic trading strategies and intelligent process automation. These applications allow FSIs to execute trades at optimal times and automate routine tasks, thereby increasing efficiency and reducing the potential for human error. The use of AI in these areas highlights its ability to process large volumes of data quickly and accurately, making real-time decisions that can significantly impact financial outcomes.

AI is also being utilised for cybersecurity threat detection and response, with 60 per cent of respondents indicating its use in this area. AI's ability to analyse patterns and detect anomalies makes it a powerful tool for identifying and mitigating cyber threats.

Additionally, 60 per cent of respondents are using generative AI and large language models (LLMs). These technologies can create new content, such as text and code, which can be used for various purposes, including customer service and content generation.

Another critical application of AI is in credit decisioning and risk scoring models, used by 59 per cent of respondents. AI can analyse a wide range of data points to assess creditworthiness and predict potential risks, leading to more informed lending decisions and better risk management.

AI is also being used for portfolio optimisation and asset allocation by 55 per cent of respondents. Advanced machine learning models can process vast datasets to identify hidden patterns and trends, helping asset managers to rebalance portfolios and minimise potential losses by considering real-time economic indicators and geopolitical events.

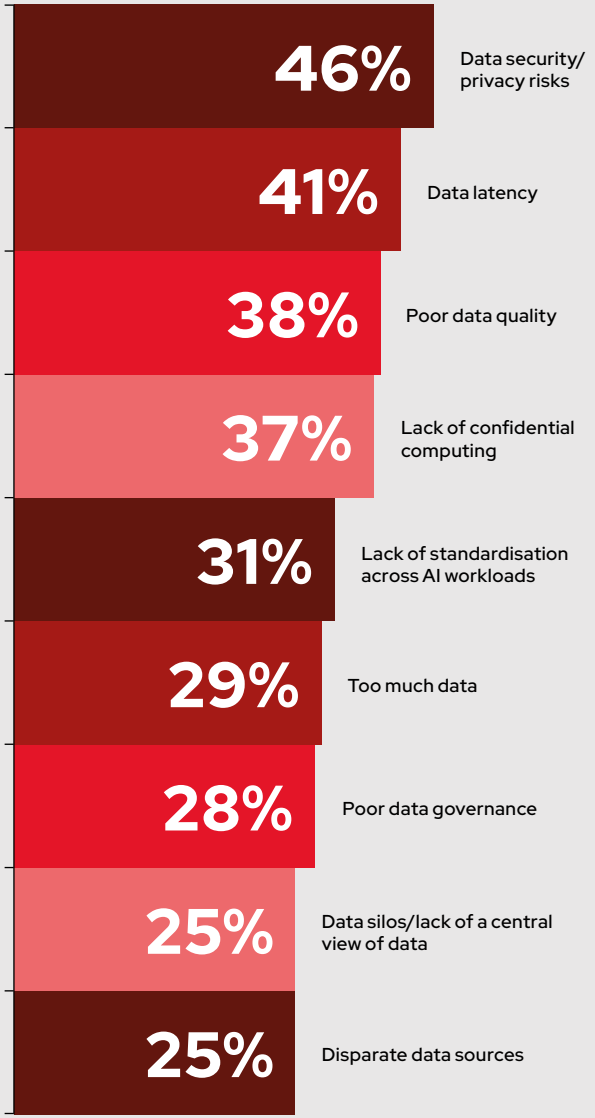
Conversational AI, such as chatbots for customer service, is employed by 54 per cent of respondents. These AI systems can handle customer inquiries efficiently, providing quick and accurate responses while freeing up human agents for more complex tasks. Predictive analytics, used by 48 per cent of respondents, allows FSIs to forecast future trends and behaviours, aiding in strategic planning and decision-making.

AI is also being utilised in customer relationship management (CRM) by 45 per cent of respondents. AI-driven CRM systems can personalise customer interactions and improve customer satisfaction.

However, only 41 per cent of respondents are using AI for Know Your Customer (KYC), Anti-Money Laundering (AML), and fraud detection. Given the stringent regulations governing fraud prevention, there is significant potential for AI to streamline these processes, reduce costs, and enhance compliance.

# Q4. What are the top data challenges your organisation faces in the roll out of AI?

[Select top three]




As AI applications draw heavily on data, it is important for FSIs to maintain good quality data sets and ensure that they can easily be accessed when needed. Yet some FSIs can struggle to manage and organise their data, which can be stored in different locations and formats. These challenges underscore the critical role that data quality, security, and management play in the successful deployment of AI technologies.

The most pressing concern, cited by 46 per cent of respondents, is data security and privacy risks. Given the sensitive nature of financial data, ensuring its protection is paramount. Recent high-profile cybersecurity breaches and data leaks have heightened awareness of these risks. FSIs must invest in robust security measures, such as encryption and secure access controls, to safeguard their data against potential threats.

Data latency is another major challenge, affecting 41 per cent of respondents. In the fast-paced financial sector, the ability to process and analyse data in real-time is crucial. High data latency can hinder decision-making processes and reduce the effectiveness of AI applications. To address this, FSIs need to optimise their data infrastructure to ensure low-latency data processing and transmission.

Poor data quality is a concern for 38 per cent of respondents. AI systems rely on high-quality data to generate accurate insights and predictions. Inconsistent, incomplete, or erroneous data can lead to flawed outcomes. FSIs must implement rigorous data governance practices, including data cleansing and validation, to maintain the integrity of their datasets.

The lack of confidential computing capabilities is cited by 37 per cent of respondents. Confidential computing involves protecting data in use, ensuring that it remains secure even during processing. This is particularly important for AI applications that handle sensitive financial information. FSIs should explore technologies that enable confidential computing to enhance their data security posture.

A lack of standardisation across AI workloads is a challenge for 31 per cent of respondents. Standardisation is essential for ensuring consistency and interoperability between different AI systems and applications. FSIs should adopt industry standards and best practices to streamline their AI workflows and improve collaboration across teams.

Interestingly, 29 per cent of respondents report that having too much data is a challenge. While abundant data can be a valuable asset, it can also be overwhelming if not managed properly. FSIs need to implement effective data management strategies to organise and prioritise their data, ensuring that the most relevant information is readily accessible for AI applications.

Poor data governance is a concern for 28 per cent of respondents. Effective data governance involves establishing policies and procedures for data management, ensuring data quality, and maintaining compliance with regulatory requirements. FSIs must invest in comprehensive data governance frameworks to support their AI initiatives.

Data silos and disparate data sources are challenges for 25 per cent of respondents. Data silos occur when data is isolated within different departments or systems, making it difficult to access and integrate. FSIs should work towards creating a centralised data repository or data lake that consolidates data from various sources, facilitating easier access and analysis.

# Q5. How ready is the data in your organisation to facilitate the successful implementation of AI across the business? [Select the most appropriate answer]

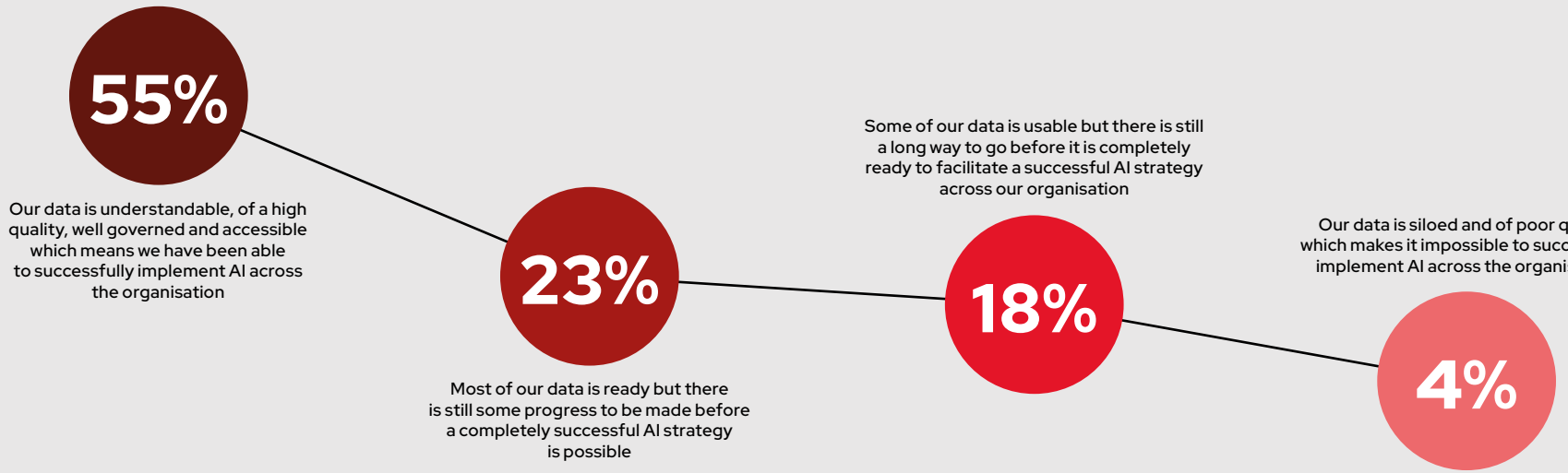
The data readiness among FSIs for successful AI implementation varies significantly. Just over half of the respondents (55 per cent) believe their data is understandable, of high quality, well-governed, and accessible, which has enabled them to successfully implement AI across their organisations. This – complemented by a previous answer that highlighted that 28 per cent of respondents found legacy systems to be a challenge when it comes to adopting AI – suggests that many FSIs have invested significantly in data management practices, ensuring that their data infrastructure supports AI initiatives effectively.

However, 23 per cent of respondents acknowledge that while most of their data is ready, there is still progress to be made before a completely successful AI strategy is possible. This group likely faces challenges related to data integration, quality, and governance that need to be addressed to fully leverage AI capabilities.

Eighteen per cent of respondents report that some of their data is usable, but there is still a long way to go before it is completely ready to facilitate a successful AI strategy across their organisation. These FSIs may struggle with data silos, inconsistent data quality, and inadequate data governance frameworks, which hinder their ability to implement AI effectively.

A small percentage (4 per cent) of respondents admit their data is siloed and of poor quality, making it impossible to successfully implement AI across their organisation. These FSIs face significant challenges in data management and must prioritise improving their data infrastructure to support AI initiatives.

GenAI algorithms, which learn to create new content by training on large amounts of existing data, can be particularly beneficial for FSIs. Once trained, these tools can be deployed for various IT and data management use cases, including data governance, documentation metadata generation, data cataloguing, schema matching and integration, and AI copilots. An in-memory Open Source data management system can assist FSIs in preparing their data for AI systems by fetching results across multiple servers and locations for increased data accuracy, as well as providing exact metadata matches and full-text search across disparate sources.



# Q6. What are the top priorities for your organisation's AI strategy?

[select top three]

FSIs have a diverse array of priorities in their AI strategies. A notable 41 per cent of respondents aim to make AI tools and capabilities accessible to a broader range of employees, reflecting a commitment to democratising AI within their organisations and enhancing overall efficiency.

Ensuring that AI-based applications and services are responsible and meet ethical standards is a priority for 34 per cent of respondents. This underscores the importance of addressing biases in AI models and ensuring fairness and transparency in AI decisions.

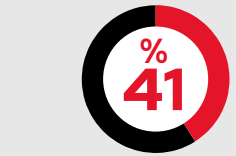
Similarly, 34 per cent of respondents prioritise improving customer experience and personalisation, indicating a desire to leverage AI to enhance customer interactions and satisfaction.

Optimising transparency and explainability in AI systems is important for 32 per cent of respondents. Making AI decisions understandable to both employees and customers can build trust and facilitate better decision-making. Additionally, 32 per cent of respondents focus on revenue growth, enhanced profitability, and cost reduction, highlighting the financial benefits AI can bring to FSIs.

Increasing operational efficiency and workforce productivity is a priority for 27 per cent of respondents. AI can automate routine tasks, allowing employees to concentrate on more strategic activities. Meeting regulation and compliance standards is crucial for 27 per cent of respondents, given the stringent regulatory environment in the financial sector.

Strengthening cybersecurity and fraud prevention is a priority for 26 per cent of respondents, emphasising the role of AI in enhancing security measures. Rolling out generative AI and large language models (LLMs) is a focus for 25 per cent of respondents, indicating an interest in advanced AI technologies.

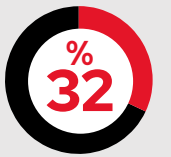
Finally, building a culture that understands AI's opportunities and risks is important for 22 per cent of respondents, highlighting the need for education and awareness within organisations.




Making AI tools and capabilities accessible to a wider range of employees across the organisation


Ensuring AI-based applications/ services are responsible and meet ethical standards


Improved customer experience and personalisation




Optimising transparency and explainability


Revenue growth and enhanced profitability/cost reduction


Increased operational efficiency and workforce productivity


Meeting regulation and compliance standards


Strengthening cybersecurity and fraud/financial crime prevention


Rolling out generative AI/LLMs


Building a culture for the organisation to understand opportunities and risks in AI

# Q7. To what extent does your organisation rely on external vendor partners for AI capabilities? [select one option]

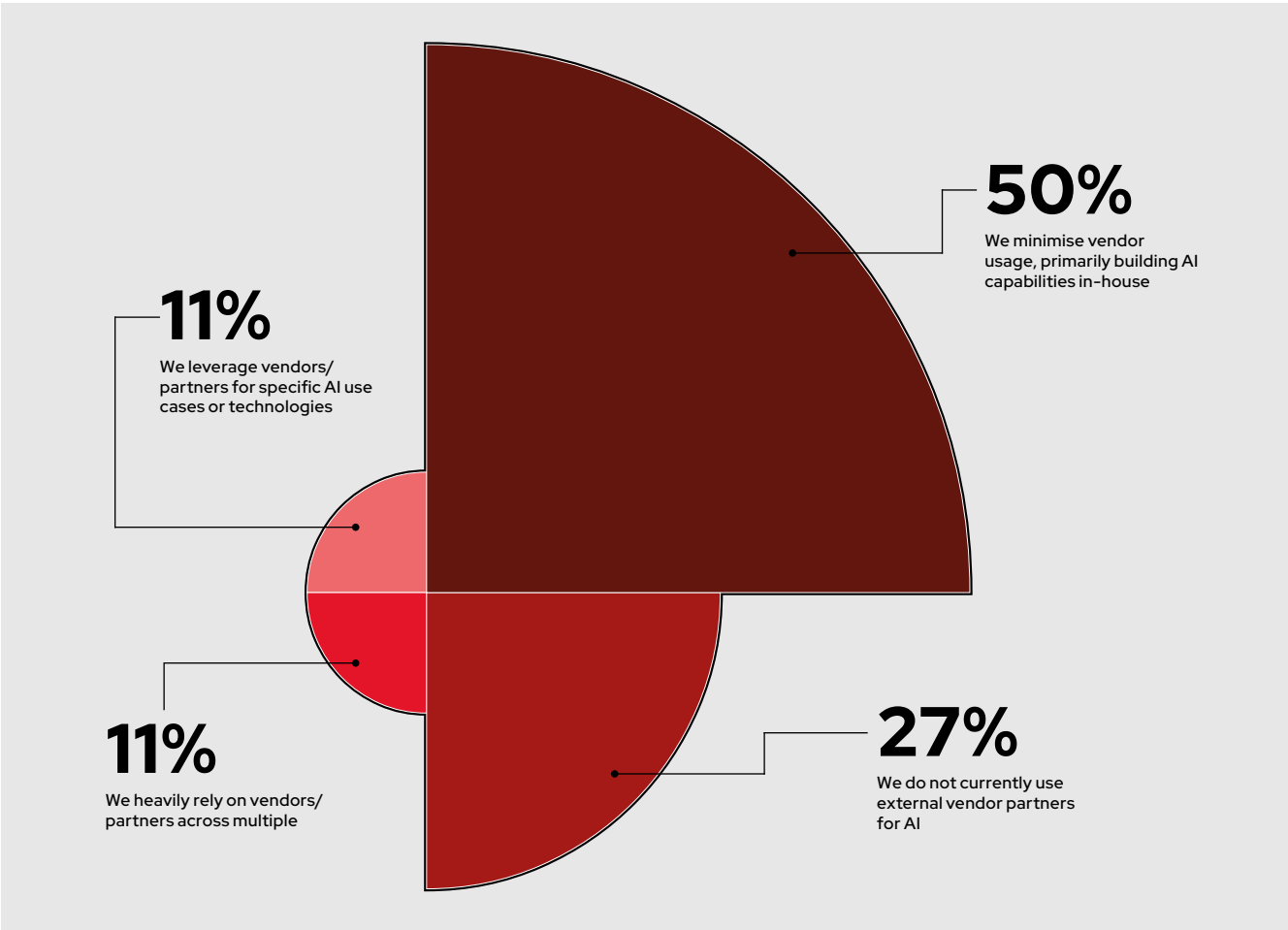
When it comes to leveraging external vendor partners for AI capabilities, FSIs demonstrate a strategic approach that underscores the benefits of collaboration. A notable 50 per cent of respondents prefer to minimise vendor usage, primarily building AI capabilities in-house. However, this approach may limit access to the latest advancements and specialised expertise that external vendors can provide.

Conversely, 27 per cent of respondents do not currently use external vendor partners for AI, potentially missing out on the advantages of cutting-edge technologies and innovative solutions developed by industry leaders. By relying solely on internal resources, these FSIs might face challenges in keeping pace with rapid technological advancements and maintaining a competitive edge.

A smaller segment, 11 per cent of respondents, heavily relies on vendors and partners across multiple areas. This approach offers significant benefits, including access to specialised knowledge, state-of-the-art technologies, and the ability to scale AI initiatives more rapidly. External vendors bring a wealth of experience and innovation, enabling FSIs to implement sophisticated AI solutions without the need for extensive in-house development.

Another 11 per cent of respondents use vendors and partners for specific AI use cases or technologies. This selective approach allows FSIs to benefit from external expertise where it is most needed, while still maintaining control over other aspects of their AI strategy. By strategically partnering with vendors, FSIs can enhance their AI capabilities, reduce development time, and focus on core business functions.

While some FSIs prefer to build AI capabilities in-house, leveraging external vendor partners offers numerous advantages. Access to specialised expertise, cutting-edge technologies, and the ability to scale quickly are compelling reasons for FSIs to consider external partnerships. By balancing internal development with strategic vendor collaborations, FSIs can effectively harness the power of AI to drive innovation and achieve their business goals.



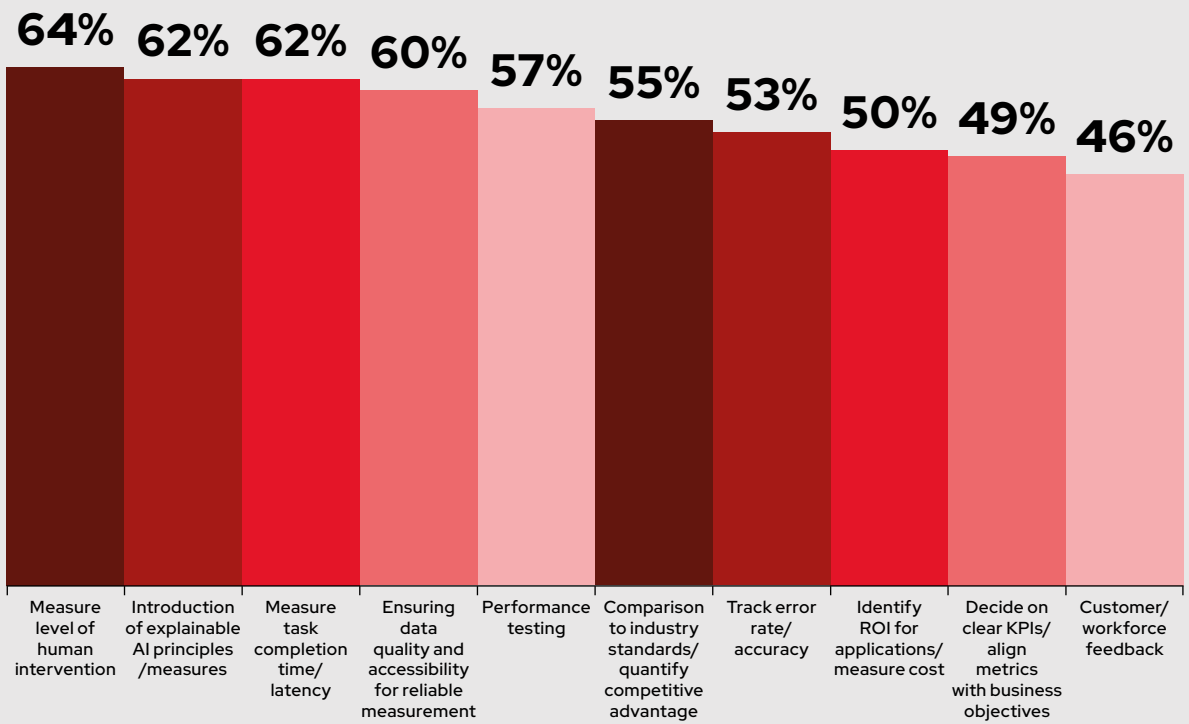
# Q8. How do you track the performance and impact of AI in your business?

[select all that apply]

The survey demonstrates that FSIs employ a variety of sophisticated methods to track the performance and impact of AI.

A significant 64 per cent of respondents measure the level of human intervention needed, indicating a preference for AI applications that operate with minimal oversight. This approach not only enhances efficiency but also allows human resources to be allocated to more strategic tasks.

The introduction of explainable AI principles and measures is utilised by 62 per cent of respondents. This practice ensures that AI decisions are transparent and understandable, fostering trust among users and stakeholders. Similarly, 62 per cent of respondents measure task completion time and latency, underscoring the importance of speed and responsiveness in AI applications.




Ensuring data quality and accessibility for reliable measurement is a priority for 60 per cent of respondents. High-quality data is the cornerstone of effective AI, and accessible data ensures that AI systems can function optimally. Performance testing, employed by 57 per cent of respondents, is another critical method, providing insights into the reliability and robustness of AI systems while also preventing dreaded AI hallucinations.

Comparison to industry standards and quantifying competitive advantage are strategies used by 55 per cent of respondents. These methods help FSIs benchmark their AI performance against peers, identifying areas for improvement and opportunities for gaining a competitive edge. Tracking error rates and accuracy, a practice followed by 53 per cent of respondents, is essential for maintaining the integrity and reliability of AI outputs.

Identifying return on investment (ROI) for applications and measuring cost savings are important for 50 per cent of respondents. These metrics provide tangible evidence of AI's financial benefits, justifying further investment. Meanwhile, deciding on clear key performance indicators (KPIs) and aligning metrics with business objectives, a strategy used by 49 per cent of respondents, ensures that AI initiatives are closely tied to organisational goals.

Finally, customer and workforce feedback, utilised by 46 per cent of respondents, offers valuable insights into the practical impact of AI on day-to-day operations and user satisfaction. This feedback loop is crucial for continuous improvement and adaptation of AI systems.

# Q9. Which of the following tools or measures is your organisation using to ensure the ethical deployment of AI in its business operations? [select all that apply]

The results indicate that FSIs are utilising a wide range of tools and measures to ensure the ethical deployment of AI in their business operations, suggesting that they take seriously their commitment to balancing innovation and responsibility.

Meeting industry regulation and compliance standards is a priority for 65 per cent of respondents, reflecting the importance of adhering to evolving legal frameworks designed to mitigate the potential risks of AI. This commitment to compliance underscores the sector's dedication to responsible AI use.

Rolling out tools and methods to identify and remove bias, such as Open Source software and counterfactual fairness, is a strategy adopted by 63 per cent of respondents. This proactive approach helps ensure that AI systems operate fairly and equitably, addressing one of the most significant ethical concerns associated with AI.

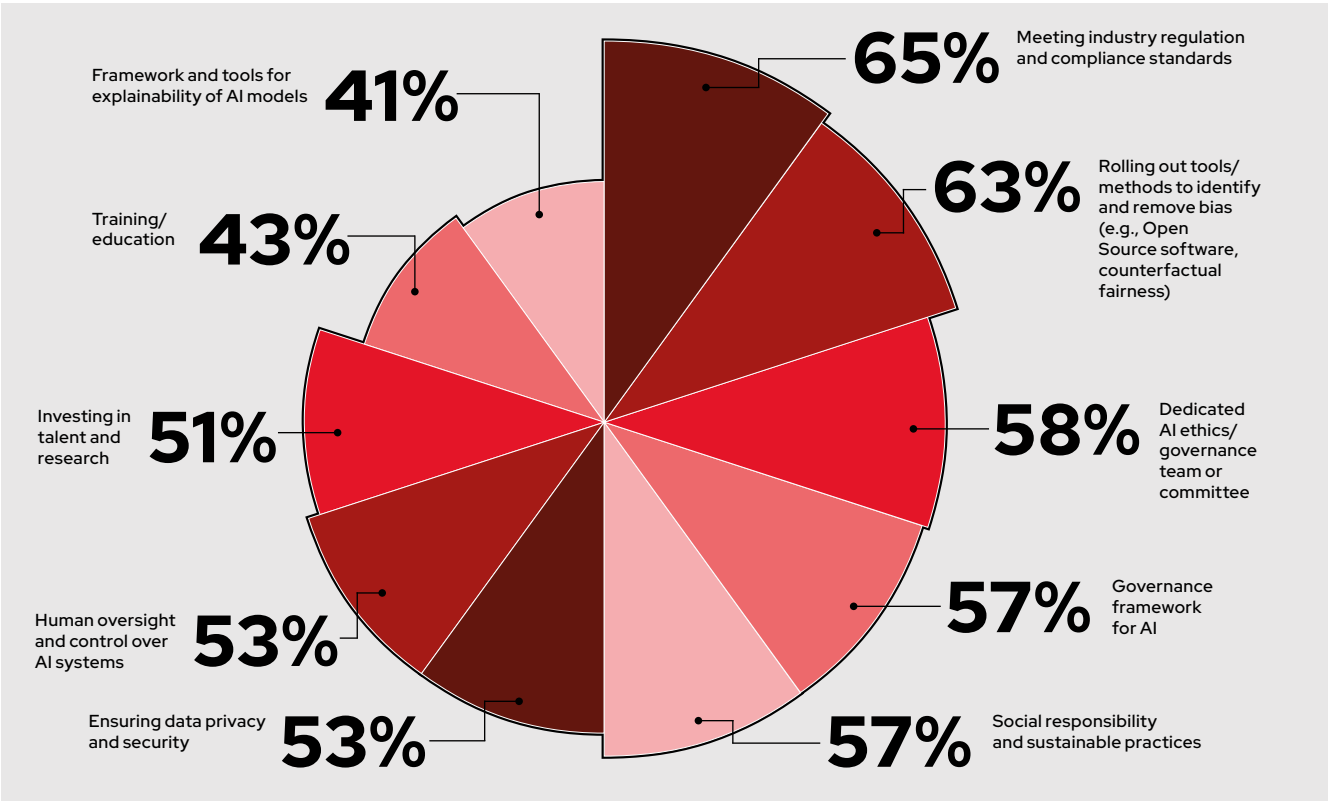
A dedicated AI ethics or governance team or committee is in place for 58 per cent of respondents, highlighting the importance of oversight and accountability in AI initiatives. These teams are crucial for developing and enforcing ethical guidelines, ensuring that AI applications align with organisational values and societal expectations.

Governance frameworks for AI are utilised by 57 per cent of respondents, providing structured approaches to managing AI risks and ensuring ethical standards are maintained. Social responsibility and sustainable practices are also a focus for 57 per cent of respondents, indicating a broader commitment to the societal impact of AI beyond immediate business benefits.

Ensuring data privacy and security is a priority for 53 per cent of respondents, reflecting the critical importance of protecting sensitive information in an era of increasing cyber threats. Human oversight and control over AI systems are also emphasised by 53 per cent of respondents, ensuring that human judgement remains integral to AI decision-making processes.

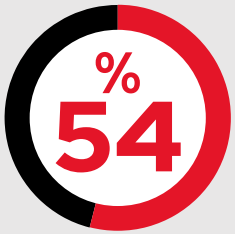
Investing in talent and research is a strategy for 51 per cent of respondents, addressing the skills gap and fostering innovation in AI. Training and education initiatives are in place for 43 per cent of respondents, ensuring that employees are well-equipped to understand and manage AI technologies responsibly.

Frameworks and tools for the explainability of AI models are used by 41 per cent of respondents, enhancing transparency and trust in AI systems. By adopting these comprehensive measures, FSIs demonstrate a strong commitment to ethical AI deployment.



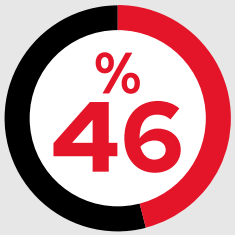
# Q10. How does sustainability factor into your organisation's AI strategy?

[select all that apply]

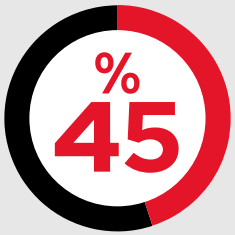



We are actively using AI to improve our organisation's sustainability

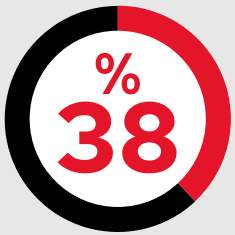

We're unsure how AI and sustainability intersect in our organisation



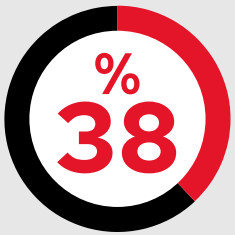

We're exploring ways to use AI for sustainability but haven't implemented anything yet




Sustainability is not currently a consideration in our AI strategy




Sustainability is a key factor in deciding which AI projects to pursue




We consider the potential environmental impact of our AI implementations (e.g., energy consumption of large models)

The survey's final question reveals that sustainability is increasingly factoring into the AI strategies of FSIs with over half of the respondents (54 per cent) actively using AI to enhance their organisation's sustainability efforts. This indicates a growing recognition of AI's potential to drive sustainable practices, such as optimising energy use, reducing waste, and improving resource management.

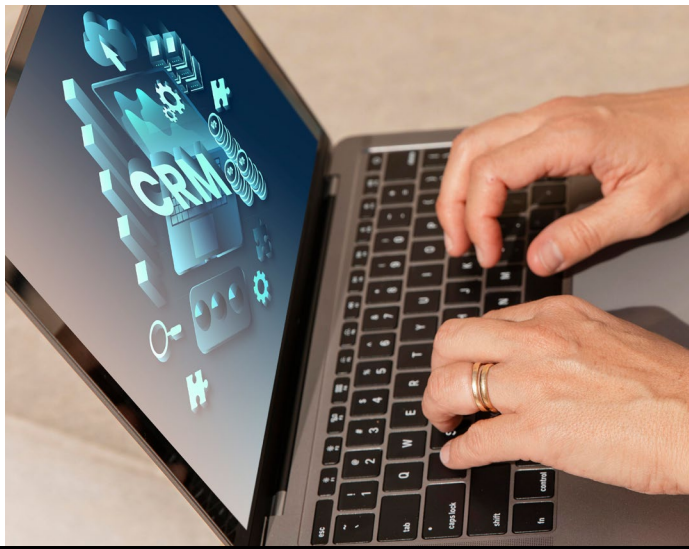
But while AI is already being used for good by the majority of FSIs surveyed, 50 per cent of respondents admitted they are unsure how AI and sustainability intersect within their organisation. This uncertainty suggests a need for greater awareness and understanding of how AI can contribute to sustainability goals. Exploring the intersection of AI and sustainability could uncover new opportunities for FSIs to reduce their environmental impact.

Forty-six per cent of respondents are exploring ways to use AI for sustainability but have not yet implemented any initiatives. This exploratory phase is crucial for identifying the most effective applications of AI in promoting sustainability. By experimenting with different AI solutions, FSIs can develop strategies that align with their sustainability objectives.

Some 45 per cent of respondents do not currently consider sustainability in their AI strategy, highlighting a significant opportunity for these organisations to integrate sustainability considerations into their AI initiatives. By doing so, they can contribute to broader environmental goals and enhance their corporate social responsibility.

Sustainability is a key factor in deciding which AI projects to pursue for 38 per cent of respondents. This approach ensures that AI initiatives are aligned with the organisation's sustainability goals, promoting long-term environmental benefits. Additionally, 38 per cent of respondents consider the potential environmental impact of their AI implementations, such as the energy consumption of large models. This consideration is essential for minimising the ecological footprint of AI technologies.

The responses to this question show that while some FSIs are actively leveraging AI to support sustainability, others are still in the early stages of exploring its potential. By increasing awareness and integrating sustainability into their AI strategies, FSIs can play a pivotal role in promoting environmental stewardship and achieving their sustainability goals.



# Conclusion

The findings from this survey highlight that Financial Services Institutions (FSIs) are making significant strides in integrating AI into their operations, yet there remains considerable room for growth and improvement.

The adoption of generative AI tools and the exploration of Open Source AI demonstrate a commitment to innovation and efficiency. However, challenges such as regulatory compliance, data quality, and ethical considerations must be addressed to fully harness AI's potential.

FSIs are at various stages of their AI journeys, with some already reaping the benefits of enhanced decision-making and operational efficiency, while others are still navigating the complexities of data readiness and cultural adaptation. The importance of a robust data infrastructure, coupled with a clear strategy for AI deployment, cannot be overstated. Investments in data management, employee training, and ethical frameworks are crucial for overcoming these hurdles.

Open Source AI presents a valuable opportunity for FSIs to tailor AI solutions to their specific needs while benefiting from the collective expertise of the global AI community. This approach not only fosters innovation but also ensures that AI development remains inclusive and transparent. By leveraging Open Source platforms, FSIs can create and develop AI-enabled applications at scale across hybrid cloud environments, allowing technology teams to experiment with different models and customise them to their specific requirements.

Furthermore, the strategic use of third-party providers can significantly enhance FSIs' AI capabilities. External vendors bring specialised knowledge, state-of-the-art technologies, and the ability to scale AI initiatives more rapidly. By partnering with these experts, FSIs can access cutting-edge solutions and accelerate their AI adoption, ensuring they remain competitive in a fast-evolving market.

The role of AI in promoting sustainability is an emerging focus, with many FSIs recognising its potential to drive environmentally friendly practices. By integrating sustainability into their AI strategies, FSIs can contribute to broader environmental goals and enhance their corporate social responsibility.

In conclusion, while FSIs have made commendable progress in AI implementation, continuous efforts are needed to address the challenges and maximise the benefits. By focusing on data quality, regulatory compliance, ethical considerations, and sustainability, and by leveraging the strengths of Open Source AI and third-party providers, FSIs can drive innovation, improve customer experiences, and achieve their strategic objectives. The journey towards fully integrated AI is ongoing, and with the right strategies and investments, FSIs can navigate this path successfully.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