AI in Finance: Real-World Applications and Adoption Trends in Scotland

Scottish Accountancy & Finance Leaders Survey 2024

Report Highlights

Introduction

This report provides a unique perspective on the current state and future potential of AI in Scottish finance functions drawing on AI-specific insights from a survey of 99 CFOs, Accountancy Partners, and Finance Directors.

While the demand for AI-specific skills is still emerging, we've observed a growing appetite for finance professionals who possess a dual skill set, combining traditional expertise with proficiency in data analysis and visualisation tools.

The survey responses reveal that finance functions are in the early stages of the AI adoption cycle, brimming with opportunity, but not without potential risks. Finance leaders must proactively address these emerging trends and equip their teams with the necessary skills to navigate this evolving landscape effectively.

We extend our sincere gratitude to Gilles Bonelli from See The Next Move for his invaluable AI expertise, and to the 99 finance leaders who generously shared their insights. We hope this report serves as a valuable resource for those seeking to understand the transformative power of AI in Scottish finance.

"We're early in the AI cycle, but the engagement and exploration from Scottish finance leaders is clear."

Andrew Murphy
Director
Ceres Financial Talent

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Overview

Artificial Intelligence (AI) is swiftly establishing itself as an indispensable asset within Scotland's finance function. This comprehensive report, drawing on insights from 99 finance leaders, delves into the present state of AI adoption and its transformative potential.

Key Highlights:
- Current AI Adoption
- Diverse Use Cases
- Talent and Skills

**Ceres Financial Talent &
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AI in Finance 2024**

Scottish Finance Embraces AI Across Key Use Cases

69% of Finance leaders are taking steps to address this important agenda across the most promising use cases covered by the study

AI: Top of Mind, Bottom of Action? The Disconnect Between Awareness and Upskilling.

AI ranks among the top challenges in Finance, yet less than 10% of the respondents are taking steps to train their teams in AI

Inflation Pressures and Talent Acquisition Top Priorities for Finance Leaders

"Inflation pressure and cost control" ranked top priority by finance leaders, followed closely by "Talent recruitment and retention"

AI Ranks In The Top 10 Challenges for Finance Leaders

"Which of the following challenges are significantly impacting your Finance team's workload and priorities?"

1 – Inflation pressures and cost control

2 – Talent recruitment and retention

3 – Supporting growth

4 – Geopolitical & economic uncertainty (UK and global)

5 – Cybersecurity threats and data protection

6 – Regulatory changes

7 – Keeping pace with rapid technological advancements

8 – **AI adoption and integration**

9 – Interest rate volatility

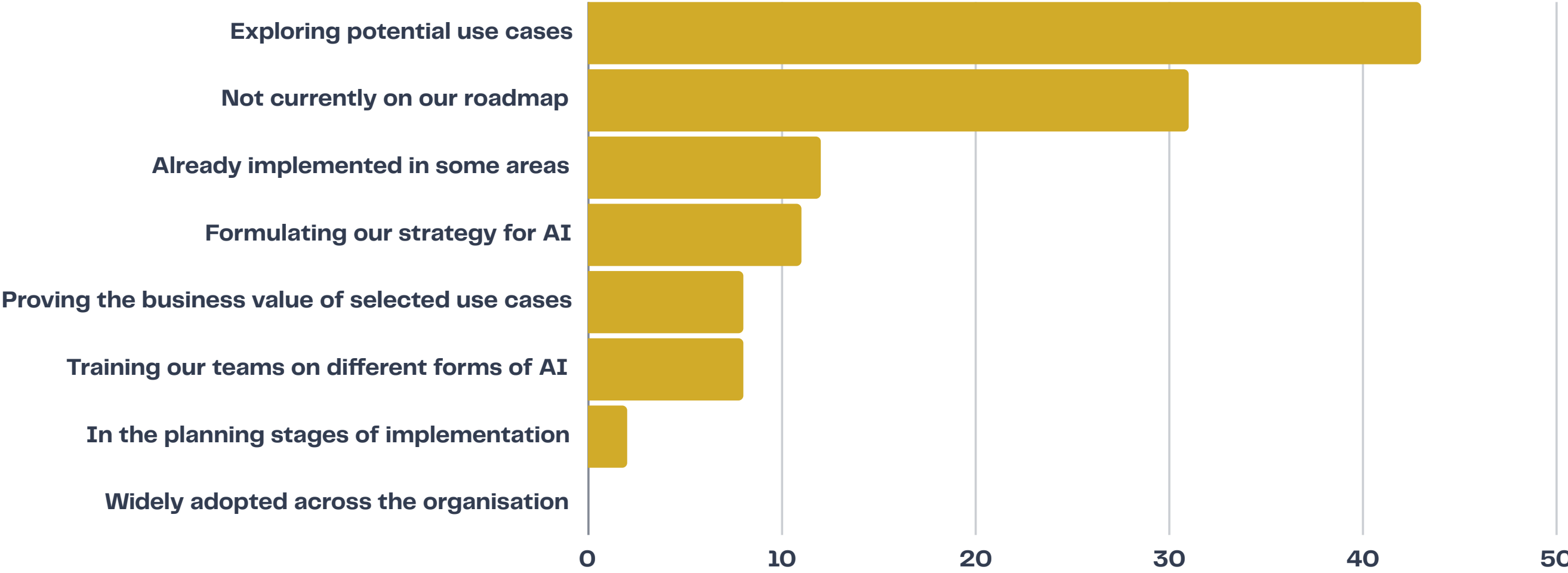10 – Integrating ESG factors into financial decision–making

"Where is your organisation in terms of AI adoption?"

69%

of respondents are actively addressing AI

31%

of respondents replied that AI is not currently on roadmap

Chart: Bar chart showing responses (approximate values):
- Exploring potential use cases — ~43
- Not currently on our roadmap — ~31
- Already implemented in some areas — ~12
- Formulating our strategy for AI — ~11
- Proving the business value of selected use cases — ~8
- Training our teams on different forms of AI — ~8
- In the planning stages of implementation — ~2
- Widely adopted across the organisation — ~0

X-axis: 0, 10, 20, 30, 40, 50

"Which of the following AI use cases in finance are you focused on?"

Use Case	Learning	Experimenting	Proof of Value	Fully Implemented
Spend Analytics & Misstatements Detection	67%	30%	3%	0%
Financial Reporting	73%	12%	12%	3%
Budgeting & Forecasting	58%	35%	6%	0%
Tax Compliance & Planning	68%	24%	8%	0%
Investment Analysis	68%	21%	10%	0%
Financial Strategy & Analysis	67%	26%	4%	7%
Audit, Risk & Compliance Management	72%	16%	16%	0%
Autonomous AI Assistants	50%	35%	8%	8%

Introduction to AI Use Cases in Finance

"Embracing AI is no longer optional in finance; yet most finance leaders are unprepared. Learning leading practices is critical to harness the true potential of AI-driven solutions."

Gilles Bonelli
Founder
See The Next Move Ltd

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The integration of Artificial Intelligence (AI) into finance offers unprecedented opportunities for value creation, efficiency, accuracy, and strategic decision-making. Despite the clear benefits, many finance leaders remain unprepared to fully leverage AI technologies. This document explores the leading use cases where AI is making a significant impact, from enhancing financial reporting and improving tax compliance to revolutionising investment analysis and audit risk management. By understanding and adopting these leading practices, finance leaders and their teams can unlock the true potential of AI-driven solutions, ensuring they remain competitive and forward-thinking in an evolving financial ecosystem. Leading practices spanning strategy, governance, talent strategy and recruitment, and implementation are emerging, and we would be delighted to discuss them with you.

AI Use Cases in Finance

Case Study 1: Spend Analytics & Misstatements Detection

Case Study 2: Financial Reporting

Case Study 3: Budgeting & Forecasting

Case Study 4: Tax Compliance & Planning

Case Study 5: Investment Analysis

Case Study 6: Financial Strategy & Analysis

Case Study 7: Audit Risk & Compliance Management

Case Study 8: Autonomous AI Assistants

Spend Analytics and Misstatements Detection

Organisations: Global Consumer Goods Company, Healthcare

AI Component Scope:
Companies utilise AI-driven spend analytics platforms that leverage machine learning algorithms to analyse procurement data. The AI system identifies spending patterns and detects anomalies, ensuring accurate financial data and compliance with corporate policies.

Software and Algorithms: Companies uses a spend management platforms like HunterAI, that incorporates machine learning algorithms like clustering and anomaly detection to analyse procurement and invoice data.

- **Clustering Algorithms (e.g., k-means)**: These algorithms group similar procurement transactions, helping to identify patterns in spending behaviour. By clustering similar items, the company can better understand and optimize its procurement strategies.
- **Anomaly Detection Algorithms:** These algorithms identify deviations from normal spending patterns, which can indicate errors, fraud, or unusual activities. This ensures the accuracy of financial data and helps maintain compliance with corporate policies.
- Using these algorithms, the company can automate the analysis of large volumes of procurement data, enhance the accuracy of financial reporting, detect and prevent fraudulent activities, and ensure that procurement processes adhere to corporate policies and standards.

Financial Reporting

Organisation: A Multinational Oil and Gas Company

AI Component Scope:
The multinational oil and gas company employs AI to automate and enhance the accuracy of their financial reporting. Natural Language Processing (NLP) algorithms analyse financial statements and reports to extract and verify financial data. AI tools then generate comprehensive financial reports, ensuring compliance with accounting standards.

Software and Algorithms:
The company uses IBM Watson for NLP and text analysis, leveraging machine learning algorithms such as BERT (Bidirectional Encoder Representations from Transformers) to extract and verify financial data.
Natural Language Processing (NLP) Algorithms: These algorithms interpret and process human language, enabling the extraction of relevant information from financial statements and reports. NLP helps automate the verification of financial data, ensuring accuracy and reducing manual effort.
Bidirectional Encoder Representations from Transformers (BERT): BERT enhances the understanding of the context in text by considering the surrounding words in both directions. This results in more accurate data extraction and verification, which is crucial for generating reliable financial reports.

•Using these algorithms, the company can streamline the process of financial reporting, ensuring that all extracted data is accurate and comprehensive. This not only enhances compliance with accounting standards but also reduces the risk of errors and improves overall efficiency in financial operations.

Budgeting and Forecasting
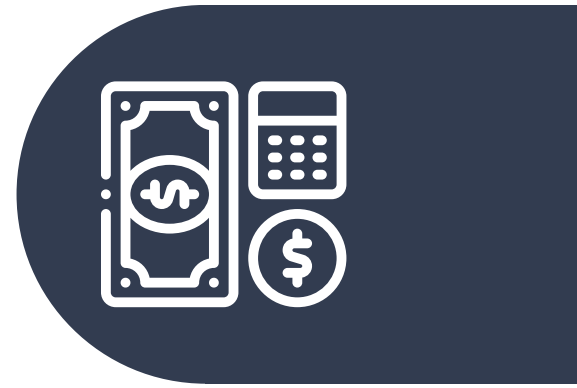
Organisation: A Leading Technology Company

AI Component Scope:
The leading technology company integrates AI in their budgeting and forecasting processes to enhance financial planning accuracy. Predictive analytics models, such as time series forecasting and regression analysis, are used to project financial performance and budget allocations.

Software and Algorithms:
The company uses the Anaplan platform for budgeting and forecasting, which incorporates predictive analytics and machine learning algorithms like ARIMA (AutoRegressive Integrated Moving Average) for time series forecasting.

- **Predictive Analytics Models:** These models use historical data to predict future outcomes. In the context of budgeting and forecasting, they help the company anticipate financial performance and allocate budgets more accurately. Techniques include regression analysis and time series forecasting.
- **AutoRegressive Integrated Moving Average (ARIMA):** ARIMA models are specifically designed for analyzing and forecasting time series data. They help the company predict future financial trends based on past data, improving the accuracy of financial planning and resource allocation.
- By leveraging these algorithms, the company can enhance the accuracy of their financial forecasts, making more informed decisions about budgeting and resource allocation. This helps in maintaining financial stability and planning for future growth effectively.

Tax Compliance and Planning

Organisation: A Major Energy Company

AI Component Scope:
The major energy company uses AI to manage tax compliance and planning, particularly regarding tax regulations and incentives. AI systems analyse regulatory changes, calculate tax obligations, and ensure compliance with tax laws. Machine learning algorithms assess the financial benefits and risks of various tax strategies.

Software and Algorithms: The company utilises Thomson Reuters ONESOURCE for tax compliance, which employs machine learning algorithms to analyse tax data and regulatory changes.

- **Anomaly Detection Algorithms:** These algorithms identify deviations from normal patterns in tax data, ensuring that any discrepancies or potential compliance issues are promptly addressed. They help maintain accurate financial records and adherence to tax laws.
- **Machine Learning Algorithms:** These algorithms, used within the Thomson Reuters ONESOURCE platform, assess the financial benefits and risks of various tax strategies by analysing vast amounts of tax data and identifying optimal approaches to tax planning and compliance.
- By leveraging these algorithms, the company can efficiently manage tax compliance, stay updated with regulatory changes, and optimise tax strategies to minimise risks and maximise financial benefits. This ensures compliance with tax laws and improves the overall financial health of the organisation.

Investment Analysis

Organisation: A Leading Investment Management Firm

AI Component Scope:
The leading investment management firm employs AI to incorporate various financial criteria into investment analysis. Machine learning algorithms analyse vast datasets, including financial performance and market trends, to assess the viability of potential investments. AI-driven platforms integrate these insights, providing a comprehensive analysis of risks and opportunities for informed decision-making.

Software and Algorithms:
The firm uses a platform that integrates machine learning algorithms such as decision trees and random forests to evaluate financial risks and opportunities.

•**Decision Trees:** These algorithms provide a clear, interpretable model for decision-making by splitting data into branches based on various financial criteria. This helps in evaluating the risks and benefits of different investment options, making it easier to select the best opportunities.

•**Random Forests:** This ensemble method combines multiple decision trees to improve prediction accuracy and robustness. Random forests reduce the risk of overfitting and provide more reliable assessments of financial risks and opportunities, helping the firm make informed investment decisions.

•By leveraging these algorithms, the firm can efficiently analyze large volumes of financial data, identify profitable investment opportunities, and mitigate potential risks. This enhances the firm's ability to make data-driven decisions that optimize returns and manage risks effectively.

Financial Strategy & Analysis

Organisation: A Leading Electric Vehicle Manufacturer

AI Component Scope: The leading electric vehicle manufacturer uses AI to support their financial strategy and analysis. AI-driven predictive analytics models forecast the financial impact of innovation and market expansion. Machine learning algorithms analyse market trends, consumer behaviour, and regulatory changes to refine the company's long-term financial strategies.

Software and Algorithms: The company employs SAS Analytics for predictive modelling, using algorithms like neural networks and support vector machines (SVM) to forecast financial impacts and market trends.

- **Neural Networks:** These algorithms are used for predictive modelling to understand complex patterns in market trends and consumer behaviour. Neural networks help forecast the financial impact of innovations and market expansion by learning from historical data and making accurate predictions.
- **Support Vector Machines (SVM):** SVMs are effective in handling high-dimensional data and are used to classify and forecast financial data. They provide robust predictions for financial planning, helping the company refine long-term financial strategies based on market trends and consumer behaviour.
- By leveraging these algorithms, the company can enhance the accuracy of their financial forecasts, make informed strategic decisions, and stay competitive in the rapidly evolving market of electric vehicles. This ensures that the company remains agile and well-prepared for future market developments.

Audit, Risk & Compliance Management

Organisation: A Multinational Banking and Financial Services Company
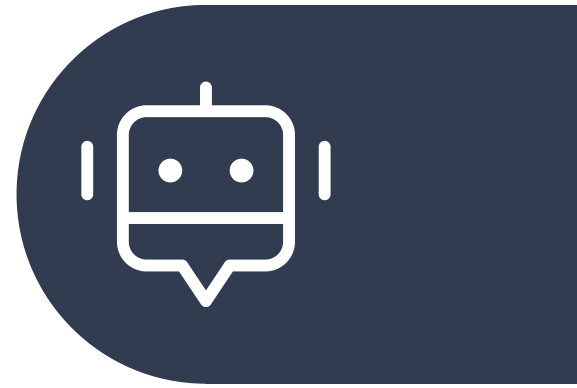
AI Component Scope:
The multinational banking and financial services company incorporates AI in their audit, risk, and compliance management processes to ensure adherence to financial standards and regulations. AI systems use anomaly detection algorithms to monitor transactions and identify potential financial risks. Natural Language Processing (NLP) tools analyse regulatory documents and company reports to ensure compliance with financial regulations, while machine learning models assess and mitigate financial risks.

Software and Algorithms:
The company uses the NICE Actimize platform for compliance management, which employs machine learning algorithms such as k-means clustering and anomaly detection to monitor and analyse data.

- **Anomaly Detection Algorithms:** These algorithms identify deviations from normal patterns in financial transactions, helping to detect fraud, errors, or unusual activities. They are crucial for maintaining accurate financial records and ensuring compliance with regulations.
- **Natural Language Processing (NLP) Algorithms:** NLP tools analyse text data from regulatory documents and company reports, extracting relevant information to ensure compliance with financial regulations. This reduces the manual effort required for compliance checks and increases accuracy.
- **K-means Clustering:** This clustering algorithm groups similar data points together, helping to identify patterns and segment transactions. This is useful for categorising transactions and detecting any unusual clusters that may indicate potential risks.
- By leveraging these algorithms, the company can enhance its audit, risk, and compliance management processes. This ensures that the company adheres to financial standards and regulations, detects potential financial risks early, and maintains the integrity of its financial operations.

Autonomous AI Assistants

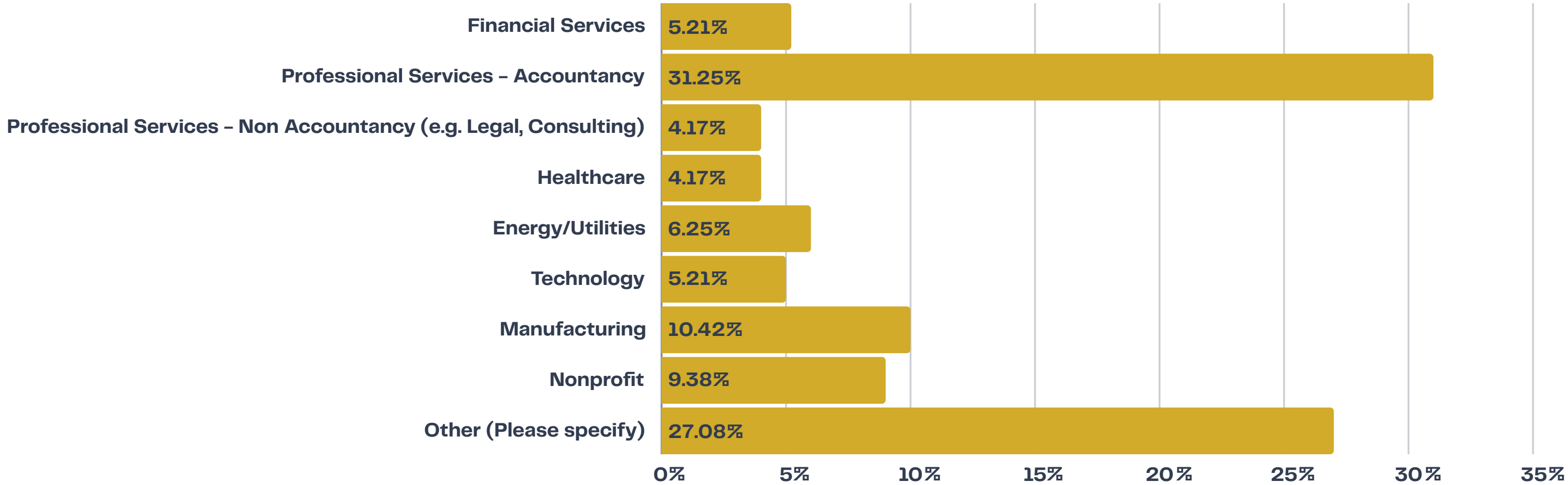**Organisation: A Major Technology Corporation**

AI Component Scope:
The major technology corporation leverages AI-powered virtual assistants to monitor and improve financial operations. These AI assistants use machine learning algorithms to track financial performance metrics, such as revenue and expenses. The AI provides real-time insights and recommendations to enhance financial practices. The corporation's AI platforms analyse financial data to support decision-making in areas like budgeting and forecasting.
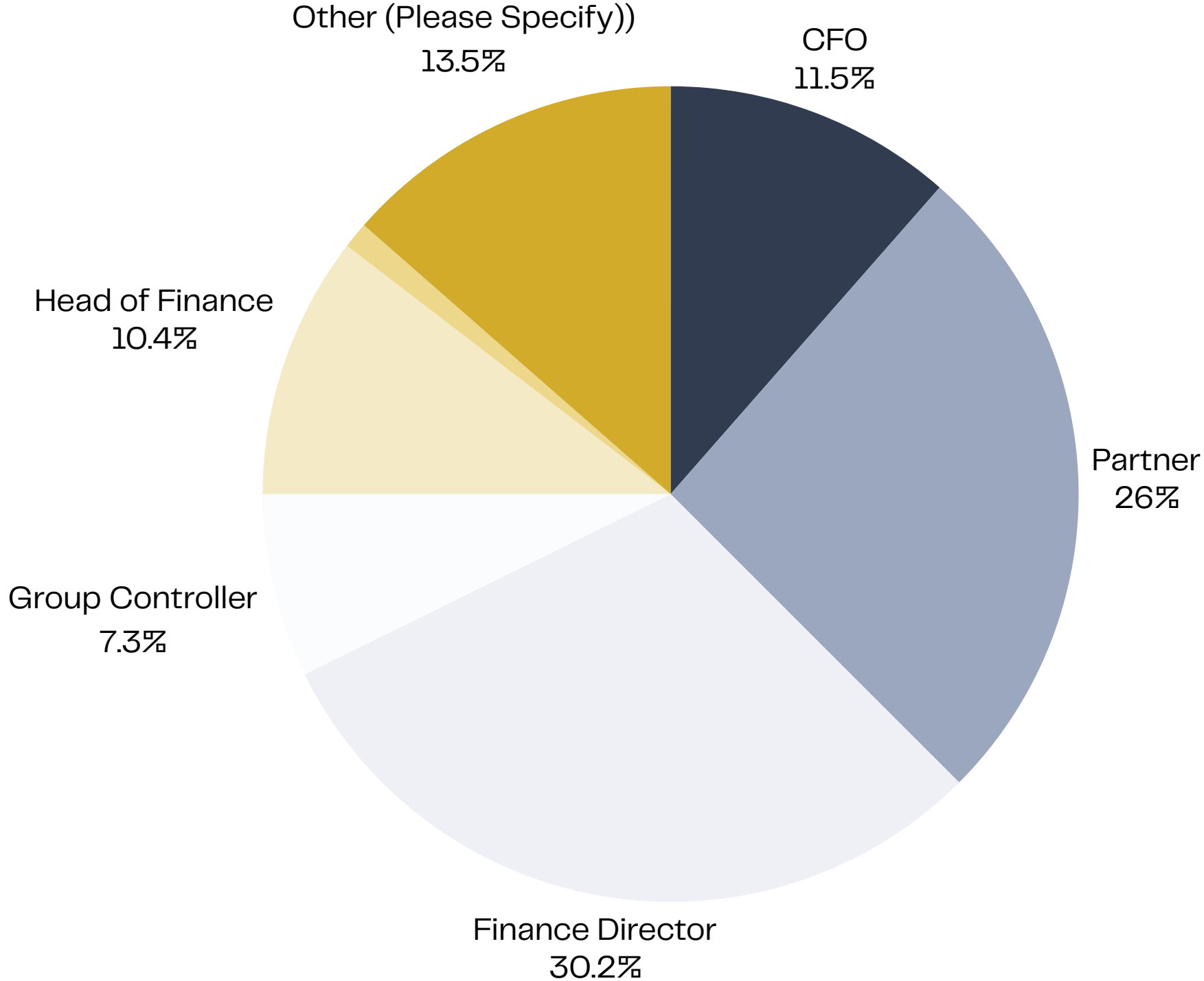
Software and Algorithms:
 The corporation uses its own AI platform, which integrates machine learning algorithms such as gradient boosting machines (GBM) and deep learning models to analyse and provide insights on financial metrics.
- **Gradient Boosting Machines (GBM):** GBM is an ensemble learning method that builds models sequentially. Each new model corrects the errors of the previous ones, improving the overall accuracy. GBM is useful for tracking and predicting financial performance metrics, as it provides refined and precise predictions.
- **Deep Learning Models:** These models are used to analyse complex and high-dimensional data, such as financial metrics. Deep learning models can identify intricate patterns in the data, offering deep insights and supporting robust decision-making in areas like budgeting and forecasting.
- By employing these algorithms, the corporation can enhance the accuracy and efficiency of its financial operations. Real-time insights and recommendations from AI assistants help improve financial practices, while advanced machine learning models support strategic decision-making, ensuring the corporation remains agile and competitive in its financial management.

Study Demographics – Industries

Industry	Percentage
Financial Services	5.21%
Professional Services – Accountancy	31.25%
Professional Services – Non Accountancy (e.g. Legal, Consulting)	4.17%
Healthcare	4.17%
Energy/Utilities	6.25%
Technology	5.21%
Manufacturing	10.42%
Nonprofit	9.38%
Other (Please specify)	27.08%

Study Demographics – Roles of Participants

Other (Please Specify))
13.5%

CFO
11.5%

Partner
26%

Finance Director
30.2%

Group Controller
7.3%

Head of Finance
10.4%

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