



AI/ML: AI for the Finance Function | 2024

Revolutionizing the Finance Function with Scalable, Predictive and Automated Solutions

This report uncovers cutting-edge AI/ML use cases driving efficiency, forecasting and decision-making in finance.

Leveraging AI/ML for Finance Transformation: Navigating Key System Selection Challenges

Finance leaders must choose AI platforms that not only automate workflows but also empower predictive insights, optimize operations and support intelligent decision-making—all while ensuring seamless integration into their existing finance

Transaction & Workflow Automation

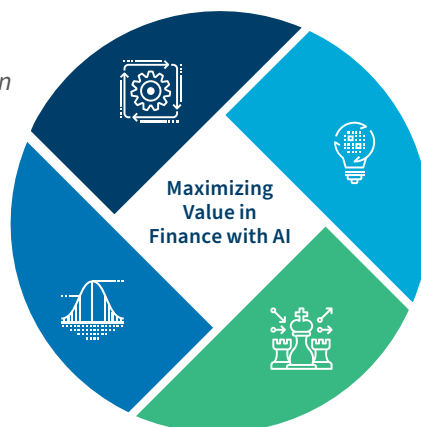
- Document Processing
- Workflow & Reporting Automation
- Ledger Harmonization

CFO challenge: Integrating automation tools seamlessly with existing finance systems.

Optimization & Efficiency

- Policy Optimization
- Business Optimization
- Capital Optimization
- Scenario Evaluation

CFO challenge: Framing high value problems and implementing optimization algorithms to drive financial efficiency.



Predictive & Analytics

- Intelligent Analytics
- Predictive Modelling
- Large Language Models (LLM) Chatbots

CFO Challenge: Balancing real-time analytics, scalability and data complexity.

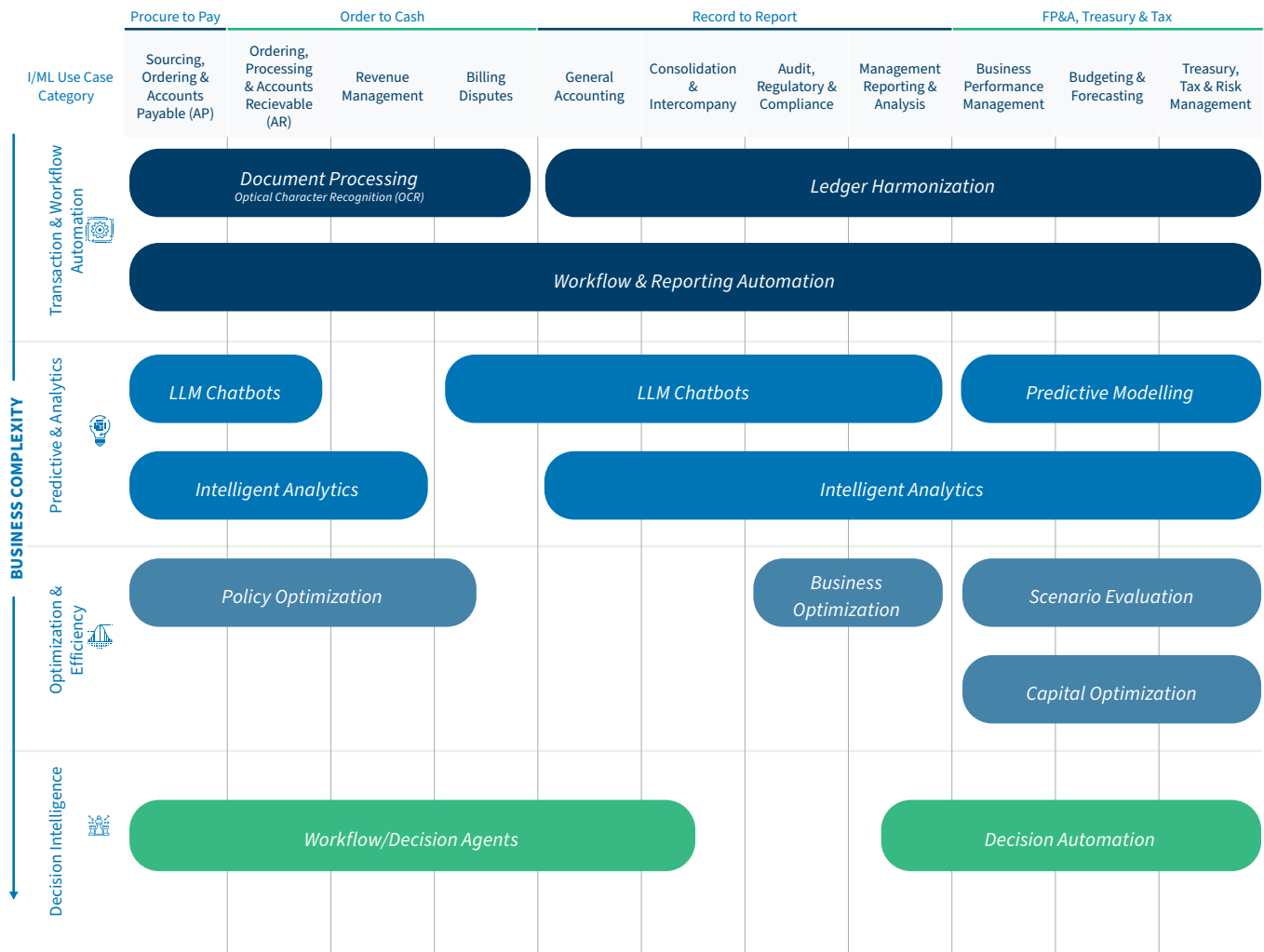
Decision Intelligence

- Workflow & Decision Agents
- Decision Automation

CFO Challenge: Enhancing decision-making without overwhelming teams with complexity and/or losing insights over competitive advantages.

AI/ML Use Cases for Transforming the Finance Function

The rise of AI/ML in finance is reshaping how organizations handle transaction efficiency and improve decision accuracy. These advancements also offer a new level of strategic depth, creating new opportunities for companies to unlock value and setting a new standard for CFOs.



Proven Approaches to Driving the Best Outcomes



- 1 Identify and develop talent to lead the tools (Machine Learning tools, analytics, modelling and other data tools) to have ownership of processes and ensure operational and financial goals are accomplished
- 2 Work with the organization to create a well-defined reporting model that provides visibility to essential KPIs, including any generated from AI models
- 3 Utilize complementary advanced analytics with the AI models to enhance and accelerate decision making
- 4 Ensure that a clear data strategy is in place along with the necessary governance to maintain reliable and secure data
- 5 Compare AI/ML capability among existing technology solutions that the firm has already invested, along with new tool sets

Depending on the data maturity and current technology stack, there are numerous tools to help accelerate the ML delivery and ensure a smooth model handoff. The chart below illustrates a sample of software solutions that can help the finance function enable Machine Learning.

- **Finance platforms** have ML features or plugin solutions and enable more general finance-based ML solutions. These platforms can vary in maturity, control and ML capabilities.
- **Low-code platforms** allow less technical finance users to transform, build and deploy repeatable limited ML solutions that can be extended with more advanced programming plug-ins.
- **Code oriented** protocols or platforms are aimed at more advanced users who want control over many aspects of development and deployment.
- **Platform ML** solutions offer end-to-end ML ops solutions, compute hosting, delivery and integration with other infrastructure elements.
- **LLM (Large Language Models)/GPTs** tools can be deployed across all types of platforms. Some platforms have native integration abilities while others require intermediate steps. LLMs can enable summarization, classification, ideation, generation, analysis and personalization among many other mature AI LLM capabilities.

The Tools to Start

Embedded ML

Anaplan

SAP

Oracle

Low-Code/ AutoML

Alteryx

DataRobot

Data iku

H2O AutoML

Code Oriented

Scikit-Learn

AutoKeras

Platform ML Ops

Vertex.ai

Amazon SageMaker

Azure Machine Learning

AutoKeras

Large Language Models/GPTs

OpenAI

LLaMA

Gemini

Anthropic

AI Platform Categories for the Finance Function

Depending on the company's AI maturity, each of the following AI platform categories will offer unique benefits. The most adaptable platforms integrate with Excel and the more capable platforms deploy full-scale ML Ops technologies.

Categories	Description	Leaders
Excel Plug-ins	<ul style="list-style-type: none"> — Benefits: Easy to use, integrates seamlessly with existing workflows, cost-effective for basic tasks — Examples: Alteryx Designer Add-In, Microsoft Power BI AI, XLMiner — Use Cases: Forecasting, data exploration, anomaly detection in financial data — Limitations: Limited functionality compared to dedicated AI platforms, may require scripting knowledge — Best for: Finance professionals with basic data analysis needs who are comfortable with Excel 	Akkio, Coefficient, Ajelix, Excel Formula Bot, PromptLoop, AI Excel Bot
Finance Platforms	<ul style="list-style-type: none"> — Benefits: Pre-built financial models, industry-specific functionalities, user-friendly interfaces — Examples: BlackLine, Oracle Hyperion Planning Cloud, Anaplan — Use Cases: Financial planning & analysis (FP&A), budgeting, risk management — Limitations: Vendor lock-in, limited customization options compared to low-code platforms — Best for: Finance teams looking for pre-built solutions for specific financial tasks 	Oracle, OneStream, Anaplan
Low-Code Platforms	<ul style="list-style-type: none"> — Benefits: Drag-and-drop interface for building models, faster prototyping, accessible to non-technical users — Examples: Knime, Dataiku, RapidMiner — Use Cases: Fraud detection, customer churn prediction, credit scoring — Limitations: May require some coding for complex tasks, limited scalability for large datasets — Best for: Departments with a mix of technical and non-technical users seeking user-friendly model development 	Alteryx, DataRobot
Code Oriented	<ul style="list-style-type: none"> — Benefits: Full control over model development and deployment, highly customizable, integrates with existing toolchains — Examples: TensorFlow, PyTorch, Scikit-learn — Use Cases: Advanced tasks like algorithmic trading, sentiment analysis of financial news — Limitations: Requires strong programming skills, longer development time, complexities in model deployment and management — Best for: Data science teams or developers with deep expertise in AI development and deployment 	Python, R Studio
Platform ML Ops	<ul style="list-style-type: none"> — Benefits: Streamlines model development life cycle, automates tasks like training, deployment and monitoring — Examples: Amazon SageMaker, Google Cloud AI Platform, Microsoft Azure Machine Learning — Use Cases: End-to-end ML lifecycle management, easier scaling of AI solutions across the organization — Limitations: Higher costs compared to other options, requires expertise in the specific platform — Best for: Enterprises with mature AI initiatives looking for a robust solution for model operationalization 	Databricks, Google, Microsoft
LLM / GPT	<ul style="list-style-type: none"> — Benefits: Automate, enhance and innovate finance function processes and operating model. — Examples: OpenAI, Gemini, Anthropic, LLama — Use Cases: LLMs can enable summarization, classification, ideation, generation, analysis, personalization, retrieval, among others — Limitations: Requires over-engineering, possible inaccuracies — Best for: Organizations that have leaders and employees that have an appetite for experimental and iterative value capture 	OpenAI, Gemini, Anthropic, LLama



Use Case Selection Criteria: Transaction & Workflow Automation

Excel can be limited with transaction and workflow automation, while finance platforms shine in automation and scalability for finance.

AI/ML Use Case	Finance Capability	High-Level Requirement	Excel Plug-In	Finance Platforms	Low-Code Platforms	Code Oriented	Platform ML Ops	Explanation
Document Processing	Document Processing	Extraction of key data from financial documents using OCR and NLP techniques	1	5	3	5	5	OCR with NLP for document processing is best handled by finance and ML Ops platforms; Excel is too manual for these advanced use cases
	Expense Approval Workflow	Automated and customizable workflows for expense approvals and reimbursements	1	5	4	3	3	Finance platforms are well-suited for workflow automation, with low-code options enabling flexibility. Excel lacks automation here
	Expense Reporting Automation	Automated extraction, categorization and reporting of expenses from financial documents	2	5	4	3	4	Finance platforms excel at end-to-end expense reporting automation, with customization options in low-code and code-based solutions
	Accounts Payable/Receivable Automation	Automation of invoicing, payment approvals, reconciliations and transaction management	2	5	3	3	4	Full automation is best handled by finance platforms, with ML Ops enhancing reconciliation accuracy. Excel can only manage simple tasks
Workflow & Reporting Automation	Regulatory Reporting Automation	Generation of regulatory compliance reports with real-time data integration and standardized formats	3	5	3	4	4	Regulatory reporting is best handled by finance platforms, but code-based tools and ML Ops can add value for customization and real-time data integration
	Revenue Management	Generate Revenue Waterfall based on the contract terms related to tenure, contract value, subscription etc.	2	3	2	4	4	Review for customer contracts, identify key terms and generate revenue waterfall model that can be used to generate monthly revenue entries
	Real-Time Financial Updates	Real-time updates to financial data based on new inputs, with automated adjustments where applicable	2	5	4	3	4	Real-time functionality is critical in finance platforms and ML Ops. Excel cannot handle real-time updates effectively
	Financial Dashboards & Visualization	Integration of tools to build comprehensive, interactive dashboards for financial insights	3	4	4	5	4	ML Ops and code-oriented platforms provide superior customization for visualizations. Finance platforms offer robust standard dashboards
Ledger Harmonization	Intercompany Transaction Automation	Automation of intercompany transactions, eliminations and adjustments across multiple entities	4	5	3	3	2	Finance platforms handle this well due to their complexity, but Excel requires significant manual effort and is not scalable for large intercompany structures
	Month-End Close Automation	Automation of month-end close processes, including journal entries, adjustments and reconciliations	3	5	3	2	2	Finance platforms excel at automating month-end close processes, while Excel requires manual handling. Code-based platforms offer flexibility





Use Case Selection Criteria: Predictive & Analytics

Excel handles foundational predictions, while ML Ops and finance platforms deliver advanced insights and scalability.

AI/ML Use Case	Finance Capability	High-Level Requirement	Excel Plug-In	Finance Platforms	Low-Code Platforms	Code Oriented	Platform ML Ops	Explanation
Intelligent Analytics	Advanced Analytics	Application of advanced statistical methods and machine learning to derive insights from financial data	2	3	3	5	4	Excel has limited analytical capabilities; finance platforms offer basic functionality, while ML Ops and code-oriented solutions provide more advanced analysis
	Risk Assessment & Modeling	Use of AI/ML for identifying financial risks and running simulations to assess potential impacts	2	4	3	5	4	Finance and ML Ops platforms are robust for risk modeling. Code-based solutions provide custom algorithms; Excel's capacity is limited for detailed simulations
	Variance Analysis	Automated variance analysis between actuals and forecasts, with AI/ML identifying root causes of deviations	3	5	4	3	3	Excel is traditionally strong for variance analysis; finance platforms automate much of this process, providing faster and deeper insights
Predictive Modelling	Predictive Modeling	Application of machine learning models to forecast financial outcomes using historical and external data	2	3	3	4	5	Predictive modeling thrives in ML-enabled platforms, while Excel and finance platforms offer limited but manual options
	Revenue Forecasting	Prediction of future revenues using historical data and market trends with ML models	2	3	3	4	5	ML Ops and code-oriented solutions dominate for revenue forecasting, providing scalability, accuracy and adaptability to changing conditions
	Key Drivers & Factors Forecasting	Predictive analytics for external factors influencing financial performance, such as market trends or currency fluctuations	2	2	3	4	5	ML-driven approaches outperform others in forecasting key external drivers. Code-based and ML Ops platforms provide the most accurate predictions
LLM Chatbots	Management AI Bots	AI-powered virtual assistants for managerial decision-making support and reporting automation	1	2	3	5	4	ML platforms and code-based solutions excel in implementing management bots; Excel lacks capability here
	Audit & Compliance AI Bots	AI-powered bots designed to assist in regulatory compliance and internal auditing processes	1	3	3	5	4	AI-driven bots are valuable for auditing and compliance, with ML Ops and code platforms providing higher flexibility and accuracy
	Informational AI Bots	AI-powered bots for handling financial inquiries, reporting and customer service interactions	1	2	3	5	4	Informational bots are best implemented using code-oriented and ML Ops platforms; Excel cannot support these capabilities





Use Case Selection Criteria: Optimization & Efficiency and Decision Intelligence







Optimization and decision intelligence thrive on advanced platforms, while basic tools fall short in complexity.

AI/ML Use Case	Finance Capability	High-Level Requirement	Excel Plug-In	Finance Platforms	Low-Code Platforms	Code Oriented	Platform ML Ops	Explanation
Policy Optimization	Policy Compliance & Monitoring	AI-driven monitoring to ensure adherence to financial policies and automatic updates for compliance	2	4	3	4	5	ML Ops platforms excel at real-time policy monitoring and optimization, while Excel is limited to manual processes
	Integrated Business Planning	Seamless integration of financial and operational planning for optimized resource allocation	3	5	3	2	2	Finance platforms handle business planning integration efficiently, whereas Excel struggles with complex cross-functional planning
Business Optimization	Cost Management & Optimization	AI/ML-based analysis to optimize cost structures and identify inefficiencies across the value chain	2	4	4	5	4	AI and ML Ops platforms are superior in identifying cost optimization opportunities, while Excel requires significant manual input for such tasks
	Scenario Analysis	Generation of multiple financial scenarios using AI-driven forecasts based on various assumptions	3	4	3	3	4	Finance platforms excel at complex scenario modeling; Excel is suitable only for small-scale and manual scenario analyses
Capital Optimization	Capital Allocation & Portfolio Management	AI-driven optimization of portfolios to maximize return and minimize risk	2	2	2	5	4	ML Ops platforms offer high scalability and accuracy for portfolio optimization, while Excel and finance platforms are limited in this use case
	Cash Flow Management	AI-driven models to optimize cash flow through efficient asset allocation and forecasting	2	3	3	4	4	Cash flow optimization through ML is best achieved in ML Ops platforms. Excel can handle basic cash flow management but lacks real-time adjustments and automation
Workflow & Decision Agents	Workflow & Task Automation	AI agents to automate workflows, approvals and recurring tasks within finance functions	1	2	3	5	4	AI-driven workflow agents are best suited for ML Ops and code-oriented platforms, enabling dynamic task automation across finance processes
Decision Automation	Intelligent Decision Support	AI-powered agents to support and automate decision-making in areas such as budgeting and investment	1	2	3	5	4	Decision automation is highly effective in ML Ops and code-oriented platforms due to their capability to handle complex datasets and automate decision workflows



Representative AI System Selection Criteria for Finance Applications

An ideal technology selection balances solution benefits with a company's ability to implement, support and absorb total costs.

Key Capability	High Level Requirement	Excel Plug-In	Finance Platforms	Low-Code Platforms	Code Oriented	Platform ML Ops	Explanation
Vendor Support	Support infrastructure including ability to troubleshoot, resolve issues related to the S/W & related configuration	 4	 5	 4	 1	 2	Finance Platforms tend to offer leading services, while code oriented are dependent on team capabilities or external technical contractors
Scalability	Ability for the product to scale to support hundreds and even thousands of users. This measure goes beyond user counts as most cloud solutions don't have the limitations often found in a data center for server support	 1	 4	 3	 4	 5	Platform ML Ops is the most scalable because it is designed to automate many of the core ML aspects. Excel runs into many limitations and is typically best for one off implementations
Ease of Implementation	This refers to the solution's ability to be designed and implemented rapidly and with a minimum of specialized skills and outside consulting expertise	 4	 3	 5	 3	 2	Low-Code platforms are designed for teams with growing capabilities and rapid implementation to value realization. ML Ops can require more advanced ML capabilities
Ease of Maintenance & Upgrade	Capability describes the ability of a solution to be maintained and upgraded with a minimum of effort, specialized skills and cost. Cloud-based applications that include upgrade capabilities score higher in this area	 3	 4	 3	 2	 4	Finance and ML Ops Platforms are designed to create maintainable and sustainable deployments. Code oriented must follow package and software updates
Ease of Use & End User Skills	Ability for the end-users in the organization to do most of the maintenance of the system, with limited reliance on IT for support. Tool should require minimal user training, with a feel that should be comfortable to the casual user and power users	 4	 4	 5	 2	 3	Low-Code Platforms excel at building AI capabilities for less technical users. The Finance Functional often has very few staff with both functional and technical capabilities needed for Code Oriented
Subscription/License Costs	Cost of annual subscription/licensing related to the software/vendor	 5	 2	 3	 5	 3	The platform solutions typically require enterprise-wide subscriptions
Implementation Costs	Cost to implement software using vendor or 3rd party/System Integrator (SI) resources	 5	 3	 4	 3	 3	Finance Platforms can be less costly to implement depending on the existing data and solution capabilities

The capability assessment compares the effectiveness of AI applications across five finance tool categories. Each tool category is rated based on its relative strengths and completeness in addressing key finance function requirements, providing a high-level comparison of overall performance. It should be noted that the capabilities of these tools are evolving rapidly, and exceptions may exist regarding specific capabilities. Therefore, this assessment is intended to serve as a broadly directional guide rather than an exhaustive evaluation.

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