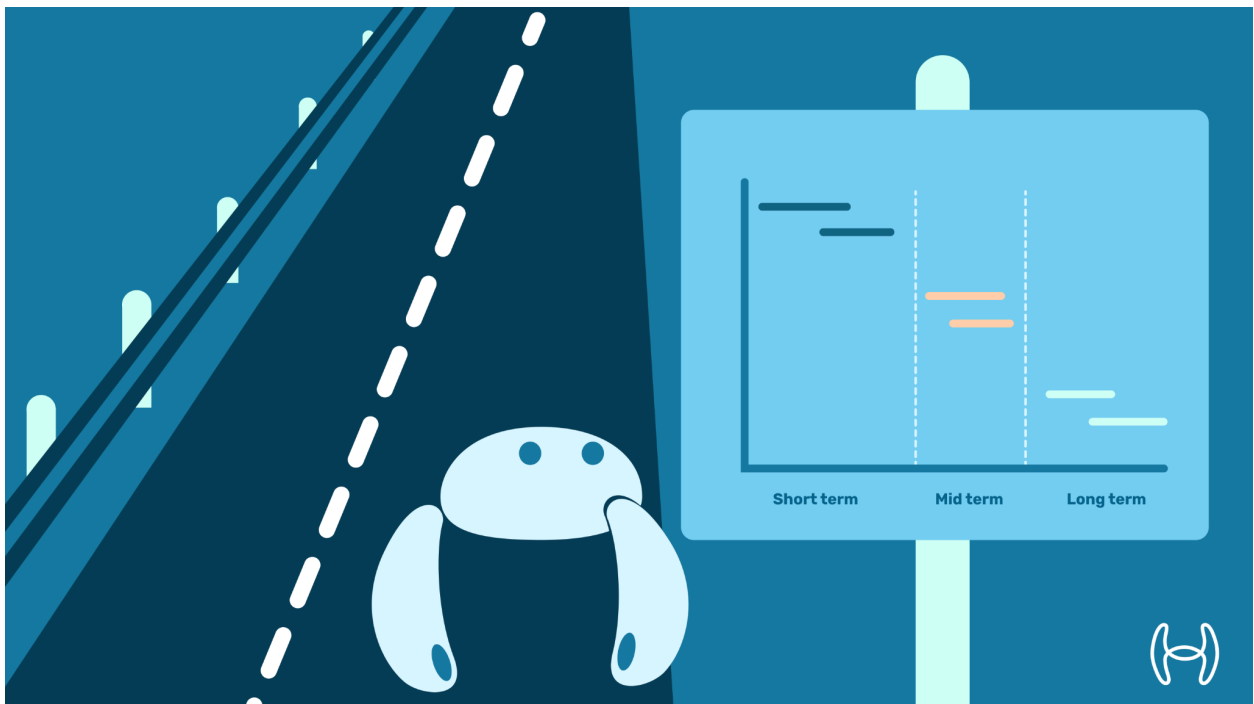


AI in Finance and Accounting

A Strategic Roadmap



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Finance and accounting (F&A) are critical to the operational efficiency and strategic decision-making of any business. The advent of artificial intelligence (AI) presents a transformative opportunity for these functions. This article analyzes manual, analytical, and strategic activities within these functions and determines the most optimal AI adoption roadmap.

1. Nature of Activities in F&A Functions

1. **Procure to Pay (P2P):** This function involves ordering goods and services, receiving them, and processing supplier payments. It is high in manual activities due to numerous transactional processes and medium in analytical activities for optimizing cash outflow and vendor rationalizations.
2. **Order to Cash (O2C):** This function involves receiving an order to deliver the product or service and collecting payment from the customer. It is high in manual activities for order processing and collections and medium in analytical for credit risk and cash flow forecasting. It is medium in strategic activities for maximizing customer relationships and revenue.
3. **Expense Management:** This function involves processing company expenses to ensure they are within policy and accounted for correctly. It is high in manual activities for processing reimbursements and medium in analytical activities for monitoring costs and compliance.
4. **Tax and Compliance:** This function ensures that the organization complies with tax laws and regulations, and manages tax planning and filing. It is medium in manual activities for regular reporting. It is high in analytical and strategic activities due to the complex nature of tax planning and compliance.
5. **Treasury:** This function manages the organization's cash and financial risk, focusing on liquidity management, funding, and investment strategies. It is medium in manual activities for cash handling. It is high in analytical and strategic activities for managing financial risks and investment strategies.
6. **Financial Planning & Analysis (FP&A):** This function focuses on budgeting, forecasting, and helping management make strategic data-driven decisions. It is low in manual activities due to already available automation and high in analytical and strategic activities, as it provides the basis for strategic decisions.
7. **Mergers & Acquisitions (M&A):** This function deals with the financial, legal, and operational aspects of acquiring businesses or merging with other companies. It is

low in manual activities. It is high in analytical and strategic activities, given its impact on company valuation and strategic growth opportunities.

The following table estimates the volume of manual, analytical, and strategic activities in these functions as high, medium, or low:

| Functions | Manual | Analytical | Strategic |
|----------------------------------|---------------|-------------------|------------------|
| 1. Procure to Pay | High | Medium | Low |
| 2. Order to Cash | High | Medium | Medium |
| 3. Expense Management | High | Medium | Low |
| 4. Tax and Compliance | Medium | High | High |
| 5. Treasury | Medium | High | High |
| 6. Financial Planning & Analysis | Low | High | High |
| 7. Mergers & Acquisitions | Low | High | High |

2. The AI Revolution Opens a Path to New Automation

AI techniques for interpreting unstructured data have advanced significantly in recent years. These techniques now permit what was previously considered human-level intelligence tasks.

Transformer-based frameworks allow for unstructured content understanding, language generation, and predictive tasks. Large language models (LLMs) accelerate the AI system's ability to understand language, retrieve information, summarize, generate text, and use conversational AI. **Data-driven econometrics** models for forecasting and trend analysis enable numeric and financial data analysis.

In finance automation, this is how these AI techniques can radically transform each of these tasks:

1. **Classification:** Transformer-based frameworks and LLMs can perform preprocessing tasks for extraction, such as document classification, spam detection, selection, filtering, assessment, and enhancements of the document before proceeding with data extraction. In simple words, it can pick the correct document for further processing.
2. **Extraction:** Transformer-based frameworks and LLMs make sense of unstructured data extracted from documents. It's like OCR but way smarter. For example, OCR may extract information from PDF documents, such as invoices but it cannot identify them as invoices.
3. **Interpretation:** Fine-tuned techniques coded on top of LLMs understand the meaning of numbers and text. It interprets the extracted data and converts it into structured finance and accounting data by tagging it with labels used in AP, like penalty date and unit price. Using math reasoning, AI can draw inferences from this information, like discount availability. It can then augment data missing within the invoice and the ERP using accounting business rules. For instance, it can infer the payment due date from a phrase extracted from the invoice date and the payment term "Net 30".
4. **Matching:** In the case of AP, using transformer-based contextual retrieval and ranking, interpreted invoice data is matched against POs and GRN/SRN data from the ERP.
5. **Recommendations:** The AI can tell you which expenses are due for accruals for the month, which GL to post a particular invoice to, and whether to capitalize an expense. These recommendation models are highly contextualized and based on a company's chart of accounts.
6. **Reasoning:** Using root-cause analysis, the AI can summarize in natural language what action a user can take based on the matching outcome and recommendations. For example, a failed match may be routed via a predefined workflow to an AP clerk with instructions on recommended action. On the other hand, the matched set of invoices can go for straight-through posting to GL without human review.
7. **Forecasting:** Using deep learning, AI can perform forecasting, trend, and financial data analysis based on historical data, helping with cash flow predictions.
8. **Communication:** All system communication is summarized in natural language for the user (human-in-the-loop) and translated as nudges in the form of in-app and email notifications.

9. **Conversations:** A chatbot-like assistant allows users to ask questions and get answers from the assistant. It generates actionable insights, reports, analytics, and dashboards on the fly. For instance, when a user queries the assistant, “Show me all invoices from vendor ABC that are pending my review for this month,” the assistant will fetch the list of those invoices within the chat window, from which the user can launch and complete the review.

10. **Feedback:** This captures human feedback and allows the model to learn. For instance, if the AI recommends a particular GL, but the AP clerk keeps changing it, the AI will learn and stop recommending it again.

The structured and orderly nature of finance processes, underpinned by a robust ERP knowledge base, provides a solid foundation to leverage sophisticated machine learning and AI methodologies. Now is an opportune moment to invest in the adoption of AI-native strategies for a substantial positive business impact.

3. The AI Applications in Finance & Accounting

3.1 Procure to Pay

The P2P function involves numerous repetitive and manual activities where AI can significantly increase efficiency and reduce errors.

| AI Capabilities | Readiness |
|--|------------|
| Uses machine learning and LLMs to achieve straight-through processing for 80% of invoices. This includes automated invoice extraction, understanding, validation, matching, GL coding, and posting | Short term |
| Uses forecasting systems to automate accruals | Short term |
| Uses predictive and prescriptive models for optimal vendor payment timings | Short term |
| Uses advanced ML techniques to detect fraudulent and duplicate invoices | Short term |
| Uses classification techniques to classify expenses for capitalization | Short term |

| | |
|---|-------------|
| Uses AI models and tax dictionaries to verify the sales and other types of applicable taxes | Short term |
| Builds company and F&A-specific conversational AI models to provide chatGPT-like analytics | Medium-term |
| Optimizes vendor selection using predictive analytics | Medium-term |

3.2 Order to Cash

The O2C function is also highly manual and prone to AI automation.

| AI Capabilities | Readiness |
|---|------------------|
| Uses machine learning and text processing techniques to extract and validate purchase order information from customers' PO documents and contracts and auto-uploads information into the ERP system, resulting in 95% plus automation | Short term |
| Uses advanced AI techniques to generate customer invoices based on purchase orders, customer master, inventory, and shipment information to generate 100% First Time Right (FTR) invoices. | Short term |
| Uses recommender systems to create a daily/weekly priority list of customers for collections. | Short term |
| Uses dynamic models to enhance customer credit scoring | Short term |
| Uses advanced data science techniques for cash management including discovery of discrepancies, over and under-payments | Short term |
| Uses generative AI to automatically communicate with customers on invoices and payments, including follow-ups | Short term |
| Uses generative AI for conversational analytics on O2C data | Medium-term |

3.3 Expense Management

Employee expense management continues to be tedious for employees and the finance teams. This process can make use of AI to achieve a very high degree of automation.

| AI Capabilities | Readiness |
|---|------------------|
| Uses image and text processing techniques to automatically extract information from receipts and bills, and validate and auto-create expense reports for employees. | Short term |
| Uses machine learning techniques to verify expense reports against policies and proofs. | Short term |
| Uses advanced ML techniques to detect fraudulent and duplicate expenses. | Short term |
| Uses classification techniques to identify the correct GL code for each expense | Short term |
| Uses generative AI to communicate and answer employee queries | Medium-term |

3.5 Tax and Compliance

AI has a high potential to optimize and streamline the tax and compliance function.

| AI Capabilities | Readiness |
|---|------------------|
| Automates collection and validation of data required to file tax returns, ensuring higher accuracy and reduced human effort | Medium-term |
| Applies the correct withholding rates based on payer and recipient jurisdiction, reducing errors | Medium-term |
| Helps organize documentation related to taxation for audit purposes | Long term |
| Tracks applicable sales and use taxes across jurisdictions, ensuring accurate application to transactions | Long term |

| | |
|--|-----------|
| Uses generative AI to map financial statements to the latest reporting standards. Facilitates SOX compliance | Long term |
|--|-----------|

3.4 Treasury

AI can provide substantial value by automating routine activities and improving decision-making in treasury management.

| AI Assistance | Priority |
|---|-----------------|
| Machine learning models analyze historical cash flow patterns to predict future cash needs. | Medium-term |
| Monitors cash balances across accounts and recommends the most efficient pooling techniques. | Medium-term |
| Compares fee structures across banks, helping to negotiate better terms. | Medium-term |
| It uses advanced predictive models to assess market risks and helps optimize long-term portfolio allocation. It also recommends low-risk, high-return, short-term investment opportunities. | Long term |
| Predicts currency fluctuations to help develop effective hedging strategies. Identifies forex arbitrage opportunities. | Long term |
| Builds models to identify market and operational risks using various internal and external debts. | Long term |

3.6 Financial Planning & Analysis

FP&A involves many analytical and strategic activities. AI can help improve decision-making for these activities.

| AI Capabilities | Readiness |
|--|------------------|
| Automates the data extraction from structured and unstructured sources like documents and ERPs | Long term |

| | |
|--|-----------|
| Analyzes the historical data to build predictive budgets and rolling forecasts | Long term |
| Simulates scenarios and recommends outcomes | Long term |
| Helps in variance analysis between planned and actual budgets | Long term |
| Analyzes capital allocations and predicts ROI using historical data | Long term |
| Predicts future cashflows based on historical trends | Long term |

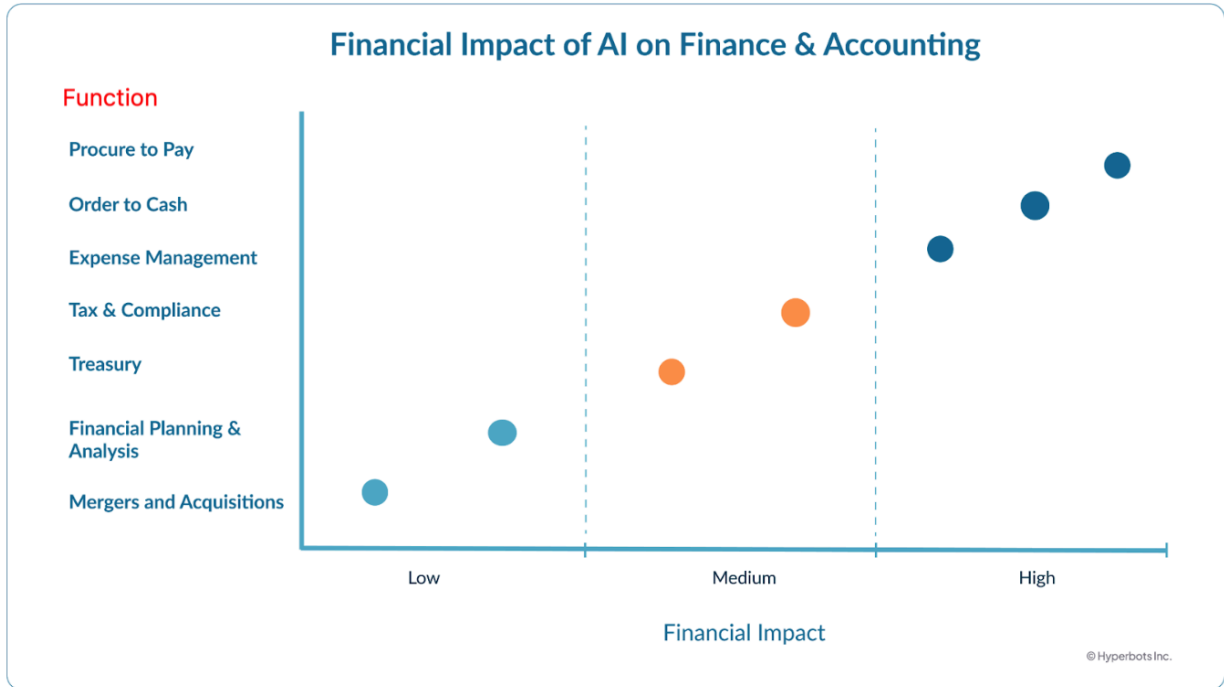
3.7 Mergers and Acquisitions

AI can play a significant role in M&A, improving efficiency and strategic decision-making.

| AI Capabilities | Readiness |
|--|------------------|
| Analyzes financial reports and news articles to assess potential targets. | Long term |
| Builds sophisticated financial models using machine learning to provide a more accurate valuation of the target companies. | Long term |
| Analyzes contracts and other financial statements for risks and liabilities. | Long term |
| Identifies and predicts potential risks. | Long term |
| Provides data-backed insights into potential negotiation points. | Long term |

4. Financial Impact of AI on Finance & Accounting

Now that we have analyzed the specific AI-based automation of the above finance functions, we can estimate the financial impact it can create.



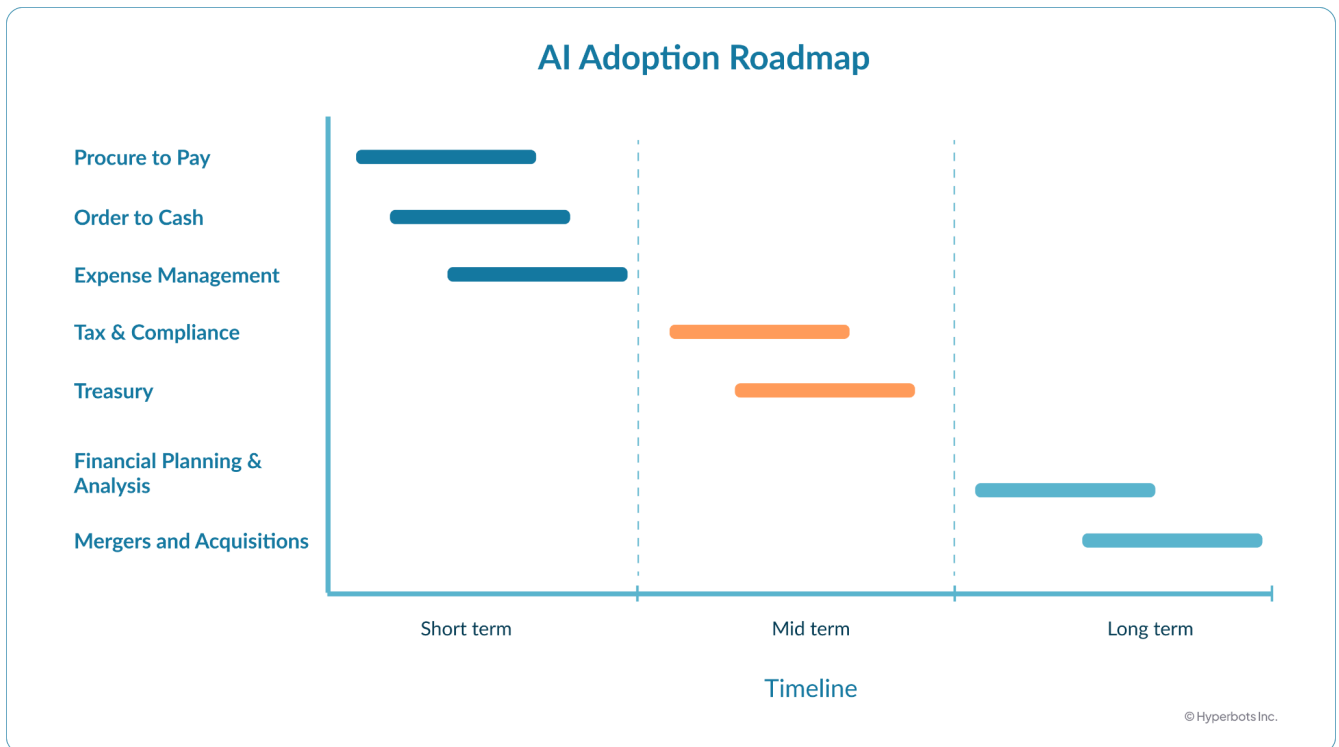
1. **P2P:** The AI-led P2P transformation has a high financial impact (significant cost reduction) as all highly manual activities, such as invoice processing, tax verification, GL posting, accruals, vendor payments, and capitalization, are fully automated.
2. **O2C:** The AI-led O2C transformation also has a high financial impact, as manual activities such as order processing, invoice generation, collections, and cash management are highly automated.
3. **Expense Management:** The application of AI has a **high** financial impact when the automation of expense report creation (for employees) and straight-through processing of expenses (for the finance team) is achieved.
4. **Tax and Compliance:** AI facilitates better compliance and efficiency in tax processes; however, the direct cost savings are moderate compared to areas with more repetitive tasks, so there is a **medium** financial impact.
5. **Treasury:** AI-driven improvements in liquidity management and investment decisions contribute to better financial health and potential savings. Still, these are more strategic than direct cost-cutting, so the financial impact is **medium**.
6. **FP&A:** While AI significantly enhances accuracy and efficiency in FP&A tasks, the cost savings are more indirect, derived from better strategic decisions rather than

direct cost reductions. Hence, the financial impact is **low**.

7. **M&A:** AI helps streamline the due diligence process and improve accuracy in valuations, but the nature of M&A involves high-value, low-frequency transactions where the primary benefits are strategic insight and risk reduction rather than direct cost savings, so the financial impact is **low**.

5. AI Adoption Roadmap in Finance & Accounting

Having evaluated the financial impact on all F&A functions, we can recommend the AI adoption roadmap.



1. **P2P:** The application of AI in P2P leads to high financial impact, optimized business processes, improved vendor satisfaction, and reduced cash outflow, so we recommend this as the first high-priority function for AI adoption in the **short term**.
2. **O2C:** The application of AI in O2C leads to a high financial impact, a significant reduction in DSO, optimized business process, improved customer satisfaction, and enhanced cash inflow. Therefore, we recommend this function as the second priority for AI automation in the **short term**.
3. **Expense Management:** AI automation leads to improved employee satisfaction and high financial impact. Hence, we recommend implementing AI as a third-priority business function in the **short term**.
4. **Tax and Compliance:** While AI facilitates better compliance and efficiency, the financial impact is medium, so we recommend this for AI adoption in the **medium**

term.

5. **Treasury:** AI-driven improvements are more strategic than direct cost-cutting. Hence, we recommend this as a lower priority for AI adoption and one that can be done in the **medium term**.
6. **FP&A:** We recommend adopting AI automation for FP&A in the long term, as the financial impact is low.
7. **M&A:** We recommend that AI automation for these activities be done long-term as the direct ROI is relatively low.

6. Conclusion

The next-generation AI technologies are mature and can be applied well in Finance and Accounting with a significant financial impact. We recommend prioritizing the Procure-to-Pay, Order-to-Cash, and Expense Management functions for AI adoption.