

Artificial Intelligence as a Catalyst for Financial Performance: From Predictive Analytics to Risk Mitigation

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Abstract :

This study aims to identify the applications of artificial intelligence and their contribution to improving the performance of institutions in general, and the extent of its impact on the financial management in particular. This study highlights the importance of artificial intelligence as an urgent necessity for financial management and highlights the extent of its contribution to improving this management and thus increasing the accuracy of financial information, and making appropriate decisions. By relying on the descriptive analytical approach, we concluded that artificial intelligence facilitates the inclusion of daily operations, analyzes big data accurately, and provides accurate financial also contributes to detecting fraud and improving risk management.

Keywords: Artificial intelligence, financial management, financial information, fraud, risk management.

JEL Classification : G32, O33, G17

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Introduction :

With the advancement of information technology and the explosion in data volume resulting from digital transformation, electronic services, and smart systems, the need has emerged to utilize this data and leverage artificial intelligence, a technology that mimics human behavior in thinking, problem-solving, learning, handling complex tasks, and making decisions. The use of its techniques has become increasingly widespread in all fields and industries, extending to the financial field, as a result of the expertise, experiments, and research of many thinkers and researchers.

Throughout history, advances in information processing, from simple bookkeeping to artificial intelligence, have transformed the financial sector, with generative AI, AI agents, and AI in general impacting finance.

Focusing on the functions of the financial system, securing financial intermediation, managing confirmations and payments, and evaluating the effects of advances in

artificial intelligence on financial stability. There are also potential side effects of AI on the real economy and how it will impact financial and risk management.

Research problematic : it is as follows :

What is the role of artificial intelligence in financial management ?

To be more familiar with this topic, we try to ask the following sub-questions:

- What is Artificial intelligence ?
- How financial management is improved ?
- What is the impact of artificial intelligence on financial management ?

Research hypotheses: To answer the above questions, we formulate the following hypotheses :

- Artificial intelligence is branch of computer science that develops machines capable of simulating human intelligence.
- Improving financial management requires a combination of disciplined budgeting, regular cash flow monitoring, and strategic planning.

Research objectives :

- Determining the definition of Artificial intelligence , its objectives, and the digital transformation.
- Identifying the concept of financial management and its role.
- Explain the relation between Artificial intelligence and financial management.

Research methodology :

We used descriptive approach in the theoretical part, and case study approach in the practical part, to explain the impact of artificial intelligence on financial management.

Research Structure :

To address the various aspects of the problem, we divided this research into three sections. In the first, we addressed the concept of artificial intelligence its objectives, and the digital transformation. In the second section identifying the concept of financial management and its role. In the third section, we explain the relation between Artificial intelligence and financial management.

I-artificial intelligence :

We will discuss the definition of artificial intelligence, its objectives, and we will also talk about the digital transformation.

1-Définition :

There are several definitions of artificial intelligence. In the Turing test :

« AI is the ability of machines to communicate with humans (using electronic output devices) without revealing the identity that they are not humans, where the essential judgment criterion is binary» (Jiang, Li, & Luo, 2022, p. 1).

In another definition «AI is the study, contruction, and application of multiagent systems, that is systems in which several interacting, intelligent agents pursue some set of of gools or perform some set of tasks» (Weiss, 1999, p. 1).

As we can define it «AI use of new digital technologies, such as social networks, mobile technologies, analytical or integrated tools, in order to allow major improvements in the company's activities such as improving customer experience, streamlining operations or creating new business models » (Alice, 2020-2021, p. 6).

From the previous definitions, our definition can be formulated as follows :

Use of new digital technologies, such as social networks, mobile technologies, analytical tools or integrated, in order to allow for major improvements in the company's activities such as improving the customer experience. The streamling of opérations or creation of new business models AI : Artificial Intelligence.

2-Objectives :

Modern approaches of Artificial Intelligence, which are data-driven and computational model centric, have a broad impact on how each field tackles its own challenges. There are increasing interests in the HCI field of using these modern AI methods to address both classic and emerging HCI.

problems. While these methods offer great capacities to solve complex problems, using these methods in HCI works also pose challenges. The goal of this workshop is to start the conversation on several fronts regarding how to effectively use these methods in our field in conjunction with traditional HCI approaches. In particular, the workshop will discuss :

-HCI topics that have been investigated by using modern AI methods and problems that are still under explored.

- Challenges in working at the intersection between AI and HCI, including the tension between the limited scale of HCI dataset and that demanded by these AI methods such as deep learning.
- Issues about how AI model-based work can make useful contribution to the HCI field, reconciling aspects of a contribution valued by different fields.

- Progress and methods for deriving analytical understandings about AI models that are relevant to HCI, rather than only using the output of the model.
- Cases and insights into how to combine guideline or heuristic-based approaches with data-driven ones.
- Tools and datasets can be shared in the community to accelerate works at the intersection of HCI and AI (Li & Kumar, 2020, p. 6).

HCI : human computer interaction

Artificial intelligence also adds value to robotic automation of processes, as the latter are virtual employee-like software that simulates human behavior on a computer, reducing time and effort. Therefore, artificial intelligence must be present to help this robotic automation through:

- Uses artificial intelligence to understand unstructured files.
- Making decisions through data analysis, and thus artificial intelligence makes smart decisions.
- Learn and develop through previous processes to automatically improve its performance.
- Processing invoices and data, as artificial intelligence extracts them and enters them into web automation processes.
- Customer Service Artificial intelligence can talk to customers.
- Human resources management through CV conformity checking.
- The financial sector by detecting fraud and matching banking transactions. (Automation Anywhere, 2026).

3-The digital transformation :

The digital transformation for companies affects all the company's activities, that is to say the professional activity as a whole, so not only the marketing of products, this transformation is based on data exchanges, example, E-commerce, platforms, database on servers, virtual currencies. (Lahchame & Djilali, 2021, p. 520)

Most companies have realized that they need to digitize their opérations to ensure their economic monitoring There are several reasons that approved this change as follows :

3-1-The fear of being uberized : it is the main cause to integrate digitalization, that's why the majority of start-up companies have digitized their commercial sector and even other sectors, it's to facilitate contact between the professionnel and the clients using the new technologies.

3-2-A minimization of costs : digitalization helps to minimize costs, and contact between all stakeholders becomes easier, and also all digital services cost less than printed ones.

3-3-Good management : digitalization facilitates all the company's transactions, because all the data is digital. (Brown, Delpy, Tailard, & Vizet, 2018, p. 2).

II-Financial management :

We will discuss the definition of financial management and its role.

1-Definition :

There are several definitions of financial management as follows :

« Finance management is a long term decision making process which involves lot of planning, allocation of funds, discipline and much more. Let us understand the nature of financial management with reference of this discipline» (Biswo, p. 1).

In another definition «Financial statements provide a summary of the accounting of a business enterprise, the balance-sheet reflecting the assets, liabilities and capital as on a certain data and the income statement showing the results of operations during a certain period» (C. Paramasivan & T. Subramanian, p. 11).

Through the previous definitions, we can present our definition as follows :

Financial management is a function concerned with analyzing and evaluating financial statements in order to make appropriate decisions.

2-The role of financial management :

Shareholders wealth is determines by the stock price in the market, which in turn represents the extent of the company's ability to develop its investments and its ability to repay its debts and self finance, as the stock price even affects.

Good financial management is based on standards to achieve its objectives. The main goal of financial management is to expand investments to increase profits. Using returns to expand profits results in a reduction in each owner's share of the profit. That's why management resorts to maximizing earnings per share as well.

There are also many goals that financial management seeks to achieve, as follows :

2-1-Agency problems :

One of the most important conflicts that occur at the corporate level is the separation of ownership from management. This in turn leads to a conflict of interest between them. In most large companies, shareholders are not good at managing the company well, this is what makes management act in its interests in a way that harms shareholders.

2-2-Corporate Social Responsibility (CSR) :

Maximizing shareholder wealth does not mean that management should ignore corporate social responsibility such as consumer protection and paying employees fair wages to maintain fair employment practices and safe working conditions,

support for education, and participation in environmental issues such as clean air and water make it appropriate for management to take into account the interests of stakeholders other than shareholders. This stakeholders include creditors, employees, customers, suppliers, communities in which the company operates, and others only by addressing the company's legitimate concerns, operations, and others, by paying attention to the legitimate concerns of the various stakeholders in the company, and the company can achieve its ultimate goal of maximizing shareholder wealth. (Van Horne & Wachowicz, 2008, p. 3).

III-Relation between AI and financial management :

Artificial intelligence has contributed significantly to improving financial management performance, by facilitating the process of dealing with large amounts of data and analyzing it faster through its algorithms. Artificial intelligence can also warn before any crisis occurs and in the event of risks, it can better assess them.

(Akaileh, Alshraah, Alomari, & Almaaitah, 2025, p. 1045)

Financial management previously relied on manual effort to enter its data and prepare all financial reports and statements in a way that reduces the performance of financial management, making it slow, somewhat expensive, and ineffective with errors. This is why artificial intelligence is the solution. Through its systems, financial data is processed with precision and in less time, thus avoiding human errors, improving financial operations and increasing the efficiency of financial management. Thus financial management works to increase accuracy, speed of decision-making, and reduce costs, but on the other hand it requires quality information and high skilled to create artificial intelligence systems (ORACLE, 2026).

We will explain the relationship between artificial intelligence and financial management through the following elements:

1-Analyze to inform decision-making :

Artificial intelligence analyzes large amounts of data to identify weak indicators in order to improve cash management and financial forecasting and thus make appropriate decision.

1-2-Optimize financial investments :

Artificial intelligence influences decision-making by predicting and forecasting future treasury flows by analyzing all organizational flows, such as sales and spending data flows, market trends, etc. (Quel est l'impact de L'IA sur la finance d'entreprise, 2026).

1-3-Predictive analyses :

Artificial intelligence works through its algorithms to improve financial management through the possibility of more accurate predictions of market trends and optimal use of assets. Through advanced artificial intelligence technologies, a set of big data is analyzed that exceeds human capabilities, and thus appropriate decisions are made, which works to achieve potentially higher returns. (Anand & Patel, 2024)

1-4-Risk management:

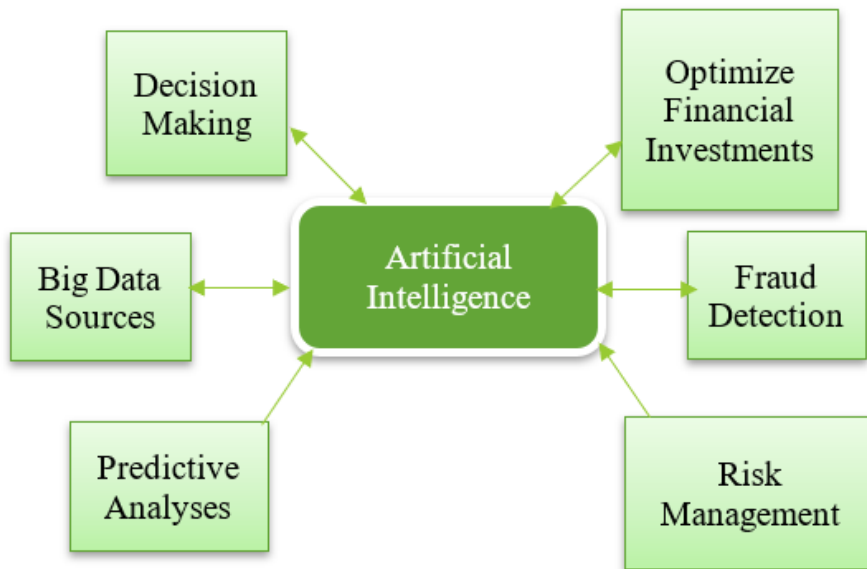
On the base level, AI capabilities, including machine-learning systems, big-data integration, automation tools, and an AI-skilled workforce become one of the central organisational assets.

Such capabilities create a high quality of decision making as they facilitate more effective forecasting, strategic planning based on data and minimization of human cognitive bias. At the same time, AI reinforces the efficiency of risk management by means of predictive risk analytics, fraud-detection tools, and real-time observation of financial and functional uncertainty (Ogunmokun et al., 2021). Increased decision-making and increased risk management are both examples of intermediary processes converting the AI-based capabilities into high organisational performance as is reflected by high financial returns, operational efficiency, market competitiveness, and expansion of innovation. The framework also recognises the moderating factors include AI governance, ethical and regulatory compliance, and organisational culture which determine the strength and effectiveness of these relations. Finally, the model defines AI as a strategic potential, which optimises the inner management procedures and, thus, leads to sustainable organisational success.

Machine learning systems and the automation of big data analysis for artificial intelligence are among the most important assets that create high-quality decision-making capabilities, as they facilitate forecasting and improve strategic planning.

Artificial intelligence is among the most effective factors in enhancing the efficiency of risk management through predictive risk analysis and increasing the detection of fraud and uncertainty. The primary goal of artificial intelligence algorithms is to increase decision-making and improve risk management, which reflects high organizational performance in a way that increases financial returns and competitiveness, stimulates innovation and ethical and regulatory compliance, and thus activates corporate governance. (Salman & Shan, 2026)

We can summarize the relation between them in this figure.

Figure 1 : «The impact of Artificial Intelligence in Financial Management»

Source: Compiled by the author based on various sources.

We can also highlight the role that artificial intelligence has contributed to financial management through the following table:

Table 1 : «The importance of using artificial intelligence on financial management»

	Before using artificial intelligence	After using artificial intelligence
Analysis of the data	Decisions are based on previous financial reports	IA anticipates cash flows, market volatility, and credit risks before they occur
Risk management	Errors and cheating attempts are identified manually, often when it is too late	Anomalies are analyzed in large transactions, which leads to reduced risks
Prediction	forecasts based on simple historical trends, not well suited to volatility	Artificial intelligence, through its algorithms, can improve financial management by obtaining more accurate predictions of all market trends and

		the possibility of optimal use of assets
Operational role	the operational role is crucial to ensure a successful adoption. it is not simply a matter of installing software but of preparing the organization to transform its business processes	The operational role of AI is to integrate algorithms and intelligent models directly into business processes to improve efficiency, reduce costs, and accelerate decision-making.

Source: Compiled by the author based on various sources.

IV-Field study :

1-Presentation of the institution under study :

Ant Group belongs to the Chinese Alibaba Group, which is the company specialized in all its financial transactions. It was established in 2004. Initially, Ant Group faced many problems, including the lack of a payment system to process payments for its Alibaba websites on all of its websites.

Despite the existence of Imal, and Alibaba's B2B website through which payments can be made via Alipay, which has made the volume of traffic profitable despite the low transaction fees due to the number of users, which has currently witnessed a significant increase to more than one billion users, as it was ranked in March 2019 as the sixth largest financial technology company in the world. (Ant Group, 2026)

2-Application of Artificial Intelligence in Ant Group :

The Ant Group has worked on several models of artificial intelligence and developed ling-2.5-1T. Ant Complex has released several models of artificial intelligence two trillion, in order to expand its business and develop financial services.

Ant Group relies on artificial intelligence in all fields, especially in predictive analytics, as it works to predict customer requests after analyzing transactions, which increases efficiency in foreign exchange operations. Artificial intelligence also enables customers' needs for foreign currencies to be predicted by a percentage exceeding 90%. It also has very advanced fraud detection mechanisms.

Artificial intelligence is also used to manage credit risks by analyzing user behavior and transaction data. Through the advanced mechanisms of artificial intelligence in the graph, accurate credit is recorded by mapping complex networks.

Each user's variable is evaluated in order to make faster lending decisions. More than 3,000 variables are evaluated, and a risk engine linked to artificial intelligence called ALPHA RISK is relied upon. Through its algorithms, all fraudulent activities are

detected, The artificial shoe relies on the AlphaRisk engine to detect all fraudulent operations and is very effective in neutralizing and managing risks.

The Ant Group also focuses specifically on operational risks to predict potential system outages or poor performance by analyzing infrastructure data using advanced artificial intelligence mechanisms that also work to identify early warning signs of systemic risks in the Ant Group and monitor all transactions and market movement (Hadjab & Mansouri, 2025, p. 11).

We will explain through the following table all the artificial intelligence modifications for the Ant Group.

Table 2 : «A timeline of key organizational events and AI adjustments for the Ant Group»

Year	Main regulatory event (China)	AI modifications or responses relevant to the Ant Group
2019	The People's Bank of China FinTech Development Plan (2019-2021) mentions unified technological standards for QR codes	This may have affected the Ant Group's focus on interoperability and standardization in payment technologies
2020	Ant Group IPO suspended due to regulatory concerns over systemic financial risks	Restructuring the business model, increasing focus on regulatory compliance, and potential adjustments to lending practices and risk management strategies
2020	New regulations require credit creators to keep at least 30% loans on their balance sheet	Significant impact on Ant's capital requirements and private lending model. Which may lead to adjustments in the evaluation of credit paid with artificial intelligence to mitigation risks

Source : (Hadjab & Mansouri, 2025, p. 12)

We note from the following table the major developments taking place in the lending model and the extent of the impact on the capital requirements of the Ant company, which requires the necessity of amending the credit rating using Artificial Intelligence in order to reduce risks.

3-Obstacles to applying artificial intelligence:

Artificial intelligence technologies are a major goal of the financial sector, especially with the development and multiplicity of financial technologies.

However, a recent study showed that 1.7 billion people in the world, representing 50% of the total number of workers in the world, have never dealt with advanced banking services. This is due to several reasons, including developing regions or weak income. This shows that financial services have a long way to go to be applied throughout the world. (Alan, Ant Financial Applies AI in Financial Sector, 2019)

There are many risks and limitations facing artificial intelligence. Therefore, for developing artificial intelligence, all its applications must be carefully examined in proportion to the potential harm. If inequality and error persist, structural inequality will persist. (Henry P. Foote & Michael Cohen, 2024, p. 338)

Among the obstacles to implementing artificial intelligence, the opacity of artificial intelligence algorithms or the black box refers to the inability of humans, including designers, to understand how an AI system moves from input data to a decision or recommendation given as output, as follows :

- Complexity of deep learning: unlike traditional algorithms based on logic rules, modern models such as deep neural networks process billions of statistical parameters.
- Machine learning: the machine creates its own rules from input data, often in a way that is not intelligible to the human mind.
- Trade secrets: many algorithms are private properties that make their code and training data inaccessible to the public or regulators

There are several risks related to the issue; we will summarize them as follows:

- Algorithmic bias.
- Absence of liability.
- Manipulation of information. (Université Laval, 2026)

There are also many other challenges facing artificial intelligence, including the high cost of the latter for several reasons, including:

- Training and infrastructure costs: Advanced artificial intelligence programs are considered advanced programs and intensive training, as the cost of training some models reaches \$2 million per day, in addition to graphics processing units, which are considered expensive.
- Data development and processing: The process of developing and processing data requires a long time and specialized resources to ensure data quality .
- Cloud operating expenses. This type of treatment is considered to cost a lot of money and is ongoing

- Integration and compliance. Integrating AI into the right processes requires significant investment
- Lack of competencies: One of the biggest challenges facing the application of artificial intelligence is the scarcity of specialists in this field, which requires training in this field. The manager's skills must also be developed. Here, his role is not limited to a person who makes random decisions, but rather to an analyst of accurate data through which he can predict the risks that could reduce the organization's performance and thus make appropriate decisions (ELECTE , 2026).

Conclusion :

Artificial intelligence plays an important role in shaping the dynamics of the financial sector. It is considered the brain of the economy, as artificial intelligence works to process information, manage risks, and serve customers within the financial sector by working to develop its systems.

Results :

There are many results that we will summarize as follows :

- Artificial intelligence works through its algorithms to improve financial management.
- Artificial intelligence influences financial risk management by enhancing accurate prediction.
- Artificial intelligence analyzes large amounts of data to identify weak indicators in order to improve cash management and financial forecasting and thus make appropriate decision.
- Artificial Intelligence can predict treasury flows by analyzing all regulatory flows in a way that impacts the decision-making process.

References :

- Anand , P., & Patel, K. (2024, Priyanka Anand Kumar Pate). Transforming Financial Management With Ai: Opportunities,Challenges, And Regulatory Implications. Educational Administration: Theory and Practice, p. 13372.
- Akaileh, M., Alshraah, S., Alomari, A., & Almaaitah, N. (2025). The role of Artificial Intelligence in Enhancing Decision Making Progress in Financial Risk Management. JEFB.
- Alan, Q. (2019). Ant Financial Applies AI in Financial Sector. Alibaba Cloud.
- Alice, G. (2020-2021). L'impact de la digitalisation des Entreprises sur leur mission: le cas d'un organisme de formation. Mémoire de fin d'étude. European business school Paris, Ecole européenne de Management.
- Ant Group. (April 2026), Récupéré sur Wikipedia: https://en.wikipedia.org/wiki/Ant_Group
- Automation Anywhere) .Avril, 2026 .(automationanywhere.com
- Biswo, R. M. (s.d.). Fundamentals of financial management. India: UTKAL University DDCE Education for ALL.
- Brown, A., Delpy, J., Tailard, A., & Vizet, V. (2018). La transformation digitale des entreprises. Aurélie Dudèzert. La découverte.
- C. Paramasivan, & T. Subramanian. (s.d.). Financial Management. Mumbai: New Age International Publishers.
- ELECTE (April, 2026) .Retrived <https://www.elect.net>
- Hadjab, A., & Mansouri, A. (2025). The chinese experience in predicting crises using AI. Yahia Fares university Médéa: Algeria.
- Henry P. Foote, F., & Michael Cohen, C. (2024). Applying Artificial Intelligence in Pediatric Clinical Trials: Potential Impacts and Obstacles. J Pediatr Pharmacol Ther.
- Jiang, Y., Li, X., & Luo, H. (2022). Quo vadis artificial intelligence. Discover Artificial Intelligence.
- Lahchame, K., & Djilali, C. (2021). La digitalisation des entreprises: une opportunité pour leur performance. Journal of Contemporary Business and Economoc Studies.
- Li, Y., & Kumar, R. (2020). Artificial Intelligence for HCI A Modern Approach. workshop summary.
- ORACLE. (2026, 02 26). Récupéré sur AI:

<https://www.oracle.com/middleeast-ar/erp/ai-financials/what-is-ai-in-finance/#:~:text=%22%D9%8A%D8%AD%D9%88%D9%84%20%D8%A7%D9%84%D8%B0%D9%83%D8%A7%D8%A1%20%D8%A7%D9%84%D8%A7%D8%B5%D8%B7%D9%86%D8%A7%D8%B9%D9%8A%20%D9%88%D8%A7%D9%84%D8%AA%D8%B9%D9%84%D9%85%>

- Quel est l'impact de L'IA sur la finance d'entreprise. (2026, mars 26). Récupéré sur Groupe SVP: <https://www.svp.com>
- Salman, A., & Shan, A. (2026). Artificial Intelligence in Business and Financial Management: Transforming Decision-Making, Risk Analysis, and Organisational Performance. *International Journal of Social Sciences Bulletin*, p. 828.
- Université Laval. (2026, Avril 20). Récupéré sur <https://www.administration-numerique.chaire.ulaval.ca>
- Van Horne, J., & Wachowicz, J. (2008). *Fundamentals of Financial Management*. England-London: Prentice Hall.
- Weiss, G. (1999). *Multi Approach to distributed Artificial Intelligence*. London, England: Library of congress Cataloging in publication Data.