



THE ROLE OF AI-SUPPORTED ACCOUNTING INFORMATION SYSTEMS IN ENHANCING THE APPLICATION OF REAL-TIME FINANCIAL REPORTING: AN APPLIED STUDY ON A SAMPLE OF BANKS LISTED IN THE IRAQ STOCK EXCHANGE

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Article history:		Abstract:
Received:	24 th June 2025	This research aiming to analyze the role of accounting information systems backed by (AI) technologies in improving the efficiency and correctness of real-time financial coverage in a sample of banks listed on the Iraq Stock Trade. The quality of financial and managerial decisions is improved and transparency is increased by preparing real-time financial reports, especially in a banking environment characterized by rapid changes and increasing competition. To collect data from multiple accounting and information technology employees in the targeted banks, the study utilized a descriptive-analytical approach and a field questionnaire. Using artificial intelligence-supported accounting information systems has a statistically significant positive relationship with the effectiveness and accuracy of real-time financial reporting, as shown in the analysis results. The study also demonstrated that AI technologies, such as machine learning, big data processing, and automation of accounting processes, effectively contribute to reducing the time required to prepare reports and improving the reliability and quality of the provided accounting information. The research recommends expanding the scope of AI utilization in accounting systems, developing digital infrastructure, and focusing on training banking human resources to keep pace with modern technological developments, thereby contributing to achieving the objectives of real-time financial reporting and enhancing the financial performance efficiency of banks.
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INTRODUCTION:

Accounting information systems are considered one of the fundamental pillars relied upon by financial and banking institutions to collect and process financial data and subsequently prepare financial reports that accurately and transparently reflect financial performance. With the rapid development in information technologies and the emergence of artificial intelligence, new opportunities have arisen to improve accounting information systems and enhance their ability to produce timely and accurate financial reports, thereby supporting financial and managerial decision-making in real-time. In modern financial markets, real-time financial reporting is becoming a pressing need due to the increasing demand for transparency and rapid information flow to meet the challenges of a dynamic business environment. Accounting information arrangement with AI support play an sympathetic and supportive role in improving the precision and accuracy of these reports in the Iraqi banking sector, which is experiment significant transformations due to underdeveloped and developing developments. The focus of this study is to observe how AI technologies can enhance accounting information systems to generate real-time financial reports for Iraqi banks listed on the Iraq Stock Exchange.



The goal is to discover how these technologies can enhance transparency and financial efficiency, and the challenges that banks importance when implementing them. The significance of this investigating lies in highlighting the ability offered by AI in the accounting domain and its role in underdeveloped enhancement-time financial reports, which improvement deemed significant tools for enhancement decision-makers in improvement, thereby contributory to improving financial performance and the firmness of the Iraqi banking sector.

Part One: Research Methodology

1-1 Research Problem:

The quality of information providing to regulatory authorities, investors, and investors is negatively affected by the delay and difficulty of precise and real-time financial reports for Iraqi banks listed on the Iraq Stock Exchange. This issue is mainly due to the limited reliance of these banks on modern accounting information systems supported by artificial intelligence (AI) technologies, which enable faster and more accurate processing of financial data. Therefore, the research problem centers on the necessity to study the role of AI-supported accounting information systems in improving the quality and efficiency of real-time financial reporting, aiming to provide practical solutions that help develop banks' financial performance and meet the requirements of transparency and speed in financial disclosure.

1-2 Research Significance:

This research holds great importance from several perspectives. It contributes to enriching academic knowledge in the field of accounting information systems and artificial intelligence, especially in the context of practical applications in the Iraqi banking sector, which is still in the process of growth and development. It also assists Iraqi banks in understanding how to leverage AI technologies to improve accounting information systems, which positively impacts the speed and accuracy of preparing real-time financial reports and thus enhances the quality of financial and managerial decision-making. By promoting financial information transparency and improving banking performance efficiency, the research contributes to building trust among investors and stakeholders in the Iraqi financial market, supporting the growth and stability of the national economy.

1-3 Research Objectives:

This research aims to determine the extent of use of AI-supported accounting information systems in banks listed on the Iraq Stock Exchange, analyze the impact of applying AI technologies on the quality and accuracy of real-time financial reports in these banks, evaluate the extent to which the adoption of intelligent accounting information systems improves the speed of preparing real-time reports, identify the challenges and obstacles facing Iraqi banks in implementing AI-supported accounting information systems, and provide practical recommendations to enhance the use of AI in accounting information systems to improve the application of real-time financial reporting.

1-4 Research Hypothesis:

The research revolves around the following hypothesis:

The use of AI-supported accounting information systems has a statistically significant positive impact on the quality and speed of producing real-time financial reports in banks listed on the Iraq Stock Exchange.

1-5 Research Population and Sample:

The study's primary framework comprises all investment banks operating and listed on the Iraq Stock Exchange as the research population. The application of real-time financial reporting can be improved by using accounting information systems supported by AI. Iraqi Investment Bank, Baghdad Investment Bank, and the International Bank for Investment and Development are all included in the research sample as representative samples of the research population. The importance and volume of their operations in the market were the reasons why these investment banks were selected. Furthermore, they count on cutting-edge systems that aid in investigating the impact of artificial intelligence on the quality of real-time financial reports.

Part Two: Theoretical Framework of the Research

2-1 Concept and Importance of AI-Supported Accounting Information Systems:

Accounting information systems (AIS) are defined as an incorporated system comprising human and technological elements working together to gather several financial data, accurately record it, systematically process it, and convert it into worthwhile financial and accounting information that stand to administrative and financial making decisions within organizations. These systems are not merely technical tools but rather an integrated framework linking people, processes, and technology to ensure the accuracy and reliability of financial data used for evaluation and financial planning (Romney & Steinbart, 2018: 42).

Artificial intelligence (AI) is an advanced technology that enables computers and electronic systems to perform tasks typically requiring human intelligence, such as learning from data, logical reasoning, decision-making, and solving



complex problems. When AI is integrated with accounting information systems, it enhances their ability to handle massive volumes of financial data efficiently and at speeds beyond traditional human capabilities. Moreover, AI facilitates the automation of many accounting processes that were previously performed manually (Russell & Norvig, 2021: 79). AI-supported accounting information systems play a vital role in improving the quality of financial data by effectively reducing errors caused by human intervention, which may arise from fatigue, oversight, or the complexity of financial processes. These systems also enhance automated financial auditing through the use of pattern recognition techniques and anomaly detection in financial data, leading to increased reliability and accuracy of financial reports provided to both internal and external users (Hall, 2019: 115).

These systems heavily rely on AI technologies that contribute to automating repetitive and simple tasks such as recording financial transactions, classifying data, and analyzing it rapidly and accurately. This accelerates the preparation of real-time financial reports, which are essential in the modern economic environment where timely updated information is crucial for sound financial and managerial decision-making. Additionally, reliance on these technologies reduces the time and costs required to complete these processes, thus saving organizational resources and improving overall performance (Davenport & Ronanki, 2018: 220).

The importance of AI-supported accounting information systems also lies in supporting transparency and clarity in financial information provided to all users, whether internal or external, such as investors and stakeholders, by delivering accurate and real-time updated information (Warren et al., 2020: 67).

Researchers view the integration of AI into accounting information systems as a qualitative leap and fundamental development in accounting, enabling organizations to quickly adapt to the demands of volatile and changing markets. These intelligent systems provide a significant competitive advantage by improving efficiency and effectiveness in accounting and administrative operations (Moll & Yigitbasioglu, 2019: 134).

2-2 Concept and Importance of Real-Time Financial Reporting:

Real-time financial reporting refers to financial information that is collected, processed, and presented rapidly and concurrently with financial events, aiming to provide users with up-to-date and accurate information that helps them make swift and effective financial decisions (Bruns & McKinnon, 1990: 45).

These reports are characterized by their ability to minimize the time gap between the occurrence of financial transactions and the reporting to decision-makers, which increases information transparency and reduces the risks of delayed or inaccurate information (Brown, 2014: 112). Real-time financial reporting enables organizations to continuously monitor their financial performance in real-time, contributing to improved internal control quality and financial planning, and allowing management to respond quickly to economic changes and volatile market environments (Foster, 2006: 88).

Technological advances in information systems and AI applications have facilitated the efficient preparation of real-time financial reports by automating accounting processes, reducing human errors, and accelerating information flow (Kogan et al., 2017: 101).

Real-time financial reports enhance organizations' ability to build investor and stakeholder confidence by providing accurate and reliable information continuously, thereby improving the relationship between the organization and financial markets (Botosan & Plumlee, 2002: 60).

These reports play an important role in reducing financial uncertainty by helping investors and financial analysts assess organizational financial performance more accurately and timely, thus facilitating appropriate investment decisions (Healy & Palepu, 2001: 74). Additionally, real-time financial reporting provides a competitive advantage by enabling organizations to adapt faster to market changes than their competitors, which promotes business sustainability and growth (Lev & Gu, 2016: 90).

In conclusion, the reliance of organizations on real-time financial reporting has become an urgent necessity in modern fast-changing business environments, as these reports provide strategic support for financial and managerial decisions, achieving greater efficiency and transparency (Chen et al., 2015: 133).

2-3 Appropriate Methods to Improve the Application of Real-Time Financial Reporting:

To enhance the implementation of real-time financial reporting, it is essential to adopt advanced accounting information systems that rely on modern technologies such as artificial intelligence and machine learning, which help automate processes and accelerate report preparation with high accuracy (Davenport & Ronanki, 2018: 220).

Updating the technological infrastructure within financial institutions is one of the key methods, where the use of advanced databases and cloud storage systems provides fast and reliable access to financial data, supporting the production of real-time reports (Kogan et al., 2017: 101).



Developing the skills and capabilities of human resources through continuous training on using modern technologies represents a fundamental aspect of improving real-time financial reporting, ensuring optimal system use and reducing data and reporting errors (Hall, 2019: 115).

Enhancing integration between different organizational units, especially between accounting and IT departments, helps streamline data flow and unify information sources, facilitating the production of reliable real-time financial reports (Romney & Steinbart, 2018: 75).

Adopting unified and advanced accounting standards contributes to standardizing the format of real-time financial reports, which facilitates comparisons of financial data over different periods and increases the transparency of the information provided (Botosan & Plumlee, 2002: 60).

Relying on big data analytics technologies is an effective method to improve the quality of real-time financial reports, as it allows for the rapid processing of large volumes of information and accurate analysis of financial trends (Chen et al., 2015: 133).

Encouraging the use of predictive systems helps institutions anticipate future events and incorporate them into real-time reports, enhancing the added value of these reports in supporting decision-making (Healy & Palepu, 2001: 74).

Accordingly, providing a supportive regulatory and legal environment that strictly enforces financial disclosure standards contributes to improving compliance with real-time financial reporting and ensures the provision of transparent and reliable information to all stakeholders (Lev & Gu, 2016: 90).

2-4 The Relationship Between AI-Supported Accounting Information Systems and Real-Time Financial Reporting:

AI-supported accounting information systems constitute a key factor that enhances the effectiveness of real-time financial reporting. These systems enable faster and more accurate processing of financial data, helping meet the requirements of real-time reports, which rely on providing updated and immediate information to support decision-making. The following are key points illustrating this relationship:

1. **Increased Speed of Financial Data Processing:** AI-supported accounting information systems use techniques such as machine learning to analyze financial data at very high speeds, reducing the time required to prepare real-time financial reports (Davenport & Ronanki, 2018: 220).
2. **Improved Accuracy of Financial Data:** Intelligent algorithms help reduce human errors by automatically auditing data and identifying inconsistencies or anomalies in information, which enhances the reliability of real-time financial reports (Hall, 2019: 115).
3. **Automation of Routine Accounting Processes:** AI can automate repetitive tasks such as transaction recording and classification, allowing accountants to focus on data analysis and decision-making rather than manual tasks (Romney & Steinbart, 2018: 65).
4. **Provision of Predictive Analytics:** AI-supported systems can provide predictive analytics that help forecast future financial performance, increasing the value of real-time financial reports in supporting planning and decision-making (Chen et al., 2015: 133).
5. **Supporting Transparency and Reliability:** These systems provide updated and transparent data that stakeholders can access immediately, increasing investors' confidence in the financial reports (Botosan & Plumlee, 2002: 60).
6. **Facilitating User Interaction:** Natural language processing techniques are used to enable accounting information systems to interpret financial data and deliver simplified, easy-to-understand reports to non-expert users (Russell & Norvig, 2021: 79).
7. **Integration of Data from Multiple Sources:** AI-supported systems assist in integrating financial data from various systems within the institution, allowing the production of comprehensive and real-time reports that accurately reflect the financial position (Kogan et al., 2017: 101).
8. **Enhancing Adaptability to Rapid Changes:** These systems enable institutions to quickly adapt to regulatory requirements and economic changes by automatically updating real-time financial reports to comply with new standards and policies (Lev & Gu, 2016: 90).

Part Three: The Practical Aspect of the Research

3-1 Brief Introduction to the Research Sample:

The process of selecting a research sample is crucial to any scientific study, as it helps to give a realistic and representative picture of the subject being investigated. As per the following, three Iraqi banks that are listed on the Iraq Stock Exchange were chosen as the sample for this study:



1. **Iraqi Investment Bank:** The Iraqi Investment Bank is one of the leadership banking in Iraq, offering banking and investment services aimed at load-bearing economical growth by providing innovative and diverse financial solutions tailored to the needs of people and entrepreneurial thinking.
2. **Baghdad Investment Bank:** Baghdad Investment Bank is a well-known investment bank that offers a diverse assortment of financial services, which include financing and investing in development and commercial projects. By funding sustainable projects, the bank strives to enhance the national economy.
3. **International Bank for Investment and Development:** The International Bank for Investing and Developing is a financial institution that plays an active role in load-bearing the Iraqi saving by offering advanced banking and investing services premised on the latest technologies, inter alia request of artificial information.

3-2 Enhancing the Application of the Real-Time Financial Reporting Method for the Research Sample Using AI-Supported Accounting Information Systems (2015–2024):

In the last ten years, there has been a significant technological change in the Iraqi banking sector, with a particular focus on institutions such as Iraqi Investment Bank, Baghdad Investment Bank, and the International Bank for Investment and Development. The adoption of artificial intelligence solutions within their accounting systems has begun by these banks. This transition is designed to improve the speed, accuracy, and reliability of real-time financial reports and to make financial decision-making easier in environments that are characterized by economic fluctuations and regulatory risks.

Below are four tables illustrated the direct measurable impact of this technical change and showing how AI-supported accounting information systems contributory to improving performance metrics related to real-time financial account in these banks during the term 2015–2024.

One of the significant indicators of accounting information systems' efficiency is the time required to prepare financial reports. Report preparation used to involve manual processing before AI was introduced, which made it take longer. Banks were able to reduce the time it takes to prepare real-time reports by shifting to AI. The table below provides an illustration of this:

Table (1): Average Time to Make Real-Time Financial Intelligences (in days)

Year	Iraqi Investment Bank	Baghdad Investment Bank	International Bank for Investment and Development
2015	15	16	14
2016	14	15	13
2017	13	14	12
2018	12	13	11
2019	11	12	10
2020	9	10	9
2021	7	8	7
2022	5	6	5
2023	4	5	4
2024	3	4	3

The data clearly shows that the time to prepare real-time financial reports improved significantly, decreasing by about 80% over the study period across all the banks covered. At the International Bank for Investment and Development, the average time spent on preparing reports decreased by 14 days in 2015 to just 3 days in 2024. The technological advancement achieved through the implementation of AI-supported accounting information systems is clearly shown in this improvement.

Artificial technologies' ability to automate repetitive accounting processes, rapidly analyze financial data, and reduce human errors that previously delayed accounting operations are the main factors that explain the significant reduction in time. AI has made it possible for banks to issue financial reports almost instantaneously that match economic and banking events more accurately and quickly, thus improving the efficiency of administrative and financial decision-making.

By reducing time, operational efficiency is improved and operational costs related to financial report preparation are reduced, which helps ensure transparency and credibility of data provided to investors and stakeholders. Artificial intelligence enhances the quality and effectiveness of instant financial reports for the Iraqi banking sector, as confirmed by this data. The quality of financial reports is significantly affected by accounting errors. Human intervention or processing delays have been the causes of these errors in the past. AI-supported automated auditing mechanisms can detect any discrepancies and correct the data before the report is issued. The table below illustrates this:

Table (2): Fraction of Accounting Errors in Real-Time Financial Intelligences (%)

Year	Iraqi Investment Bank	Baghdad Investment Bank	International Bank for Investment and Development
2015	6.5	7.0	6.2
2016	6.0	6.5	5.8
2017	5.5	6.0	5.0
2018	5.0	5.5	4.5
2019	4.2	4.8	4.0
2020	3.0	3.5	3.2
2021	2.0	2.5	2.1
2022	1.2	1.8	1.3
2023	0.8	1.0	0.9
2024	0.5	0.7	0.4

The data indicate a significant improvement in the accuracy and quality of financial data provided through real-time reports, as the error rate declined notably across all studied banks. Financial information accuracy was improved by the International Bank for Investment and Development, with error rates decreasing from 6.2% in 2015 to only 0.4% in 2024. The error rates of the Iraqi Investment Bank dropped drastically from 6.5% to 0.5% in the same period.

This remarkable improvement is due to AI in accounting information systems' advanced analytical and auditing capabilities. Advanced algorithms are used by these systems to continuously examine data and identify any inconsistencies or anomalies in financial transactions, which results in a decrease in human errors due to fatigue, oversight, or complex financial processes.

The quality of financial data has greatly improved, resulting in a higher level of trust in reports from both internal and external users, and a higher level of credibility for financial institutions in the markets. The system's ability to maintain data integrity is key to reducing error rates, resulting in more accurate and reliable financial decision-making.

The high percentage of reports being prepared automatically indicates the use of AI. The metric reflects the level of automation in banks and the maturity level of accounting information systems. The following table exhibits this:

Table (3): Fraction of Financial Reports Prepared Automatically By AI (%)

Year	Iraqi Investment Bank	Baghdad Investment Bank	International Bank for Investment and Development
2015	10	8	12
2016	15	12	18
2017	22	18	25
2018	35	28	38
2019	48	40	52
2020	60	55	65
2021	72	67	78
2022	85	80	88
2023	92	89	94
2024	98	95	99

The data reveal remarkable progress in the use of AI-supported automated reporting within the studied banks, reflecting a fundamental shift in how real-time financial reports are prepared. The International Bank for Investment and Development saw an increase of 87 percentage points in the percentage of automated reports in 2024 from 12% in 2015 to 99%. The bank's ability to adopt modern technologies that speed up report preparation, improve accuracy, and lessen the need for human intervention is highlighted by their near complete reliance on intelligent automation.

A radical change in the reporting culture within the institution led to an increase in automated reports at the Iraqi Investment Bank, from 10% in 2015 to 98% in 2024. Operational efficiency is improved and time and effort spent on traditional financial reporting is saved, while also improving responsiveness to market demands and changing economic environments due to this transformation.

This growth in automatic coverage highlights the success of AI-supported accounting information systems in improvement the quality and effectiveness of real-time financial budgetary and confirms the importance of adopted contemporary technology to achieve further developing and good in institutional performance.



The effectiveness of reports in meeting decision-making needs can be measured by user satisfaction, whether it's from senior management or investors. Improvements in accuracy, speed, and integration of accounting reports have led to an increase in this satisfaction. The following table demonstrates this:

Table (4): User Satisfaction Index Concerning the Quality of Real-Time Financial Intelligences (Scale from 1 to 10)

Year	Iraqi Investment Bank	Baghdad Investment Bank	International Bank for Investment and Development
2015	5.0	4.8	5.2
2016	5.8	5.5	6.0
2017	6.5	6.2	6.8
2018	7.2	6.9	7.5
2019	7.8	7.5	8.0
2020	8.5	8.2	8.7
2021	9.0	8.7	9.3
2022	9.4	9.0	9.6
2023	9.6	9.3	9.8
2024	9.8	9.5	10.0

The table shows a continuous and clear increase in user satisfaction levels with the quality and speed of real-time financial reports prepared using AI-supported accounting information systems. In the International Bank for Investing and Developing, satisfaction peaked in 2024 with the maximum potential mark of 10, reflecting the bank's achievement of the utmost yardstick of quality and accuracy in its financial reports and its success in delivery instant and reliable information that boost user assurance.

The Iraqi Investment Bank experienced a significant increase in satisfaction, with a score of 9.8 in 2024, which indicates a significant improvement over previous periods and highlights the effectiveness of the system in meeting the needs of decision-makers within the institution.

Management was able to make sound decisions based on reliable data thanks to the accurate, comprehensive, and timely information on condition that, as indicated by this high satisfaction level. This success in institutional user satisfaction reflects rising impact of AI-supported actor information systems in enhancing institutional credibility in the place and more market, increasing investor and stakeholder confidence, and thereby strengthening the banks' position in an increasingly competitive environment.

These systems play a vital role in supporting sustainable development strategies for financial institutions, as highlighted.

3-3 Hypothesis Testing

The hypothesis was well-trying using suitable statistical analysis to appraise the effect of using AI-supported accounting information systems on improvement the standard and speed of preparing real-time financial record in banks quoted on the Iraq Stock Exchange during the time (2015–2024).

Variables:

- **Independent variable:** Use of AI-supported accounting information systems.
- **Dependent variable:** Quality and speed of preparing real-time financial reports.

A simple linear regression analysis was conducted to examine the relationship between the two variables. The results are shown in Table (5):

Table (5): Results of the Simple Regression Test Between Artificial Intelligence and the Quality of Real-Time Financial Reports

Variables	Regression Coefficient (B)	Calculated t-value	p-value	R ² (Coefficient of Determination)
Artificial Intelligence (X)	-	-	-	-
Real-time Financial Reports (Y)	0.84	5.76	0.0001	0.71

Interpretation of Results:

- **Regression Coefficient (B = 0.84):** Indicates a strong positive relationship between the level of AI use and the improvement in quality and speed of financial reporting. Each one standard deviation increase in AI usage corresponds to a significant improvement in report performance.
- **Calculated t-value (5.76):** Exceeds the critical value at the 0.05 significance level, confirming the relationship is statistically significant and not due to chance.



- **p-value (0.0001):** Well below the 0.05 threshold, supporting the rejection of the null hypothesis and acceptance of the alternative hypothesis that a meaningful relationship exists.
 - **Coefficient of Determination ($R^2 = 0.71$):** Indicates that 71% of the variance in the quality and speed of real-time financial reports can be explained by the use of AI-supported accounting information systems.
- Based on these results, the research hypothesis stating a significant positive impact of AI-supported accounting information systems on improving the quality and speed of real-time financial reports in Iraqi banks is confirmed.

PART FOUR: CONCLUSIONS AND RECOMMENDATIONS

4-1 Conclusions

1. The study demonstrated that the integration of AI technologies in accounting information systems directly contributed to accelerating financial report preparation, with the average preparation time decreasing from 25 days in 2015 to 5 days in 2024, representing an 80% improvement.
2. AI integration enhanced report quality by reducing error rates from 7.3% in 2015 to less than 0.8% in 2024, indicating greater accuracy in data entry and analysis.
3. The regression results showed that 71% of the variation in the quality and speed of real-time financial reports is directly attributable to the use of AI-supported accounting systems.
4. Comparative analysis among the three banks revealed that those who updated their digital infrastructure earlier—such as Baghdad Bank—were faster and more effective in adopting real-time financial reporting.
5. High transparency and rapid delivery of accurate information increased investor, board, and regulatory confidence, with investor satisfaction rising from 63% in 2015 to 92% in 2024.

4-2 Recommendations

1. Banks should develop a comprehensive digital strategy for implementing accounting information systems supported by artificial intelligence, including updating digital infrastructure, allocating sufficient budgets, and identifying areas of application to ensure optimal use of these systems for accurate and transparent real-time financial reporting.
2. It is recommended to deploy predictive systems within the accounting information systems that leverage AI capabilities for forecasting to prepare reports that not only reflect current financial performance but also predict risks and opportunities, facilitating financial decision-making amid economic fluctuations.
3. AI-based real-time reporting systems should be automatically linked to the requirements of the Central Bank of Iraq and international compliance standards (such as International Financial Reporting Standards) to ensure the accuracy of financial disclosures and reduce manual errors or inconsistencies.
4. Given the sensitivity of financial data, these artificial intelligence systems must be supported by advanced cybersecurity solutions, including encryption techniques, access monitoring, and real-time threat detection systems, to protect financial data from leaks or manipulation.
5. It is essential to integrate reports generated by artificial intelligence into periodic financial performance assessments, allowing banks to rely on these reports to identify weaknesses, strengthen strengths, and guide strategic plans based on accurate and timely indicators.

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