

The Path of Data Assets to Enhance the Efficiency of Internal Management in Enterprises

Wang Han

The Department of Accounting, Tongling University, Tongling, 244061, China

Keywords: Data Assets, Enterprise Management, Management Efficiency, Decision Support, Process Optimization.

Abstract: With the arrival of the big data era, data assets have become an important strategic resource for enterprises. This paper discusses the path of data assets to improve the internal management efficiency of enterprises. Through literature review and case study analysis, the study finds that data assets enhance enterprise management efficiency mainly through the following paths: first, optimizing the decision-making process, providing data support for management and improving decision-making accuracy; second, improving business processes to achieve precision marketing and personalized services; third, enhancing risk management and control, and identifying and warning of potential risks in a timely manner; and fourth, facilitating resource integration to achieve cross-departmental collaboration and information sharing. This study also explores the challenges facing data asset management, such as data quality, security and privacy, and talent shortage, and proposes corresponding countermeasures. The results of the study have important theoretical and practical significance for how enterprises can give full play to the value of data assets and improve internal management efficiency.

1 INTRODUCTION

With the deep development of the digital economy era, data is gradually becoming a strategic resource as important as traditional material and financial assets. The large amount of data generated in the daily operation of enterprises contains rich value, and the good management and utilization of these data assets plays a decisive role in the core competitiveness of enterprises. Nowadays, data is no longer a by-product of enterprise operations, but an important asset that can bring practical benefits. The rapid development of information technology has greatly improved the ability of enterprises to acquire, store and process data, which opens up new ways for enterprises to improve their internal management efficiency.

Domestic and foreign academics and industries gradually pay attention to the significance of data asset management for enterprise development, but mainly focus on the value brought by data assets in the table, while the research on how data assets can systematically improve the efficiency of enterprise management is still relatively small (Tang and Tang, 2025). This paper collates the application of data assets in enterprise management, analyses the role of

data asset management in improving the efficiency of internal operation and management of enterprises, and discusses the difficulties and solutions that may be encountered, so as to provide theoretical basis and practical help for enterprises to play the value of data assets.

2 CURRENT STATUS OF DATA ASSETS IN ENTERPRISE MANAGEMENT

2.1 Definition and Characterization of Data Assets

Data assets are data resources that are legally owned or controlled by a specific subject, can be measured in monetary terms, and can bring economic or social benefits. Different from traditional assets data assets have many unique features, data assets are non-competitive, the same data can be used by multiple individuals or departments at the same time, and will not reduce its value, in addition, data assets are also non-exclusionary, it is difficult to completely limit the use of people, which brings difficulties in

defining the property rights of the data, and at the same time, the return on the data assets tends to have an incremental, with the growth of the volume of data and the frequency of use of the enhancement, its marginal value may gradually increase (Dai and Zhao, 2025).

The value of data assets is influenced by usage scenarios and analytical capabilities, with obvious contextual dependencies. Accuracy, completeness, consistency and timeliness are key characteristics that high-quality data assets need to have, and are core aspects of assessing their quality. In enterprise management, understanding these characteristics can help enterprises design a scientific data governance framework to fully unlock the potential value of data.

2.2 The Evolution of Enterprise Data Asset Management

From the 1960s to the 1980s, enterprise data asset management was at an early stage, and the main task was to collect and store basic data. At that time, data was only an accessory to the daily business process of the enterprise, and the management method relied on file systems and early databases, and lacked the idea of systematic management and utilization. Entering the 1990s to the beginning of the 21st century, enterprises entered the data warehouse stage, a period in which dispersed business data were integrated and utilized, a centralized data warehouse system was gradually established, and data became an important basis for enterprise decision-making.

The arrival of the big data era has led to an important breakthrough in data asset management. Enterprises are no longer focusing solely on structured data, but are also beginning to tap the potential value of semi-structured and unstructured data, and the fields of data governance, metadata management and data quality management are gradually maturing, and the overall framework of data asset management is becoming more complete. The advancement of artificial intelligence and machine learning technology has pushed data asset management towards the intelligent stage, and data is regarded as the core strategic resource of enterprises, and its evaluation and value mining have become the focus of management work, and data-driven decision-making has been emphasized, and has gradually evolved into the main mode of enterprise management (Zhang and Li, 2025).

2.3 Application Areas of Data Assets in Business Management

Data assets play a key role in many areas of enterprise management. In strategic decision-

making, business leaders use market data, competitor analysis and internal performance data to plan future development paths. Through data mining, new market opportunities can be found and potential risks can be identified. In terms of marketing management, companies use customer data to conduct accurate analysis and build user profiles to achieve personalized product recommendations and marketing strategies. This not only improves the marketing conversion rate and customer satisfaction, but also optimizes the allocation of resources so that the return on investment is improved (Liu et al., 2022).

By analyzing production and supply chain data, enterprises can optimize production planning and refine inventory management in the area of operations management, thereby reducing operating costs and improving resource utilization efficiency. In the area of financial management, data assets drive automation of financial processes, provide real-time financial analysis and forecasting, enable more accurate budget management, and strengthen cost control. Employee data is also used for talent assessment and performance management to optimize human resource allocation, thereby improving employee satisfaction and productivity.

Data assets play an important role in areas such as risk management, customer relationship management, and product development. Data applications in different areas drive each other to improve the overall management efficiency of the enterprise, and through cross-departmental data integration, enterprise managers can obtain a more comprehensive view of the business, eliminate information silos, and promote collaborative management within the enterprise.

3 THE MAIN PATH FOR DATA ASSETS TO IMPROVE THE EFFICIENCY OF INTERNAL MANAGEMENT IN AN ORGANIZATION

3.1 Optimizing the Decision-Making Process

Data assets can improve the decision-making process of enterprises in many ways, and enhance the efficiency and quality of decision-making. Modern management emphasizes judgment based on facts, and data assets provide managers with a large

number of reliable factual support, reducing the subjectivity brought about by relying on intuition and experience, and experience-oriented decision-making has been transformed into data-oriented decision-making. By building a data-centered decision-making system, companies make the decision-making process more transparent and easier to track, while also reducing the impact of cognitive bias on judgment (Xing and Zhang, 2024).

By applying data collection and analysis tools and technologies, building a data ecosystem, helping managers sort and filter the optimal information data through data screening and adaptive information processing, and integrating fragmented data, the timeliness and accuracy of decision-making have been significantly improved. Managers can quickly respond to market changes and internal problems with the help of real-time data analysis, establish early warning and pre-planning mechanisms through predictive analysis, propose scenario simulation and hypothesis testing, and managers are able to assess the possible outcomes of various decision-making options without actual risk and select the best solution (Dai and Zhao, 2025).

Complex data relationships become intuitive and easy to understand through data visualization techniques, and by building a shared data center, managers with improved non-technical backgrounds can also quickly grasp the core information and trends in the data, which improves communication efficiency and makes decision-making more transparent, and after the enterprise establishes a data asset sharing mechanism, barriers between departments are broken down, and collaborative cross-departmental decision-making is achieved, which avoids waste of resources and decision-making isolation, the overall decision-making process is more efficient and unified (Yan et al., 2025).

3.2 Automate Processes

Data-driven analysis allows companies to find bottlenecks and redundancies in processes. With data mining technology, managers can reveal potential patterns and room for improvement in processes to support process optimization, an approach that helps companies clarify the direction in which they need to adjust.

Process automation relies on data assets as its foundation, which significantly improves the operational efficiency of enterprises. Enterprises can automate core business processes through the rational application of data assets. For example, for a

company's financial business, budget management, automated tax processing, filling in and generating reports, and other financial tasks can be realized through financial robots (especially those based on RPA technology). In supply chain management, data sharing and intelligent scheduling system (APS) can realize automatic adjustment of production plan, optimize inventory management, and realize automated collaboration of the whole chain of procurement, production and sales. These automated means not only enhance processing speed, but also reduce labor costs and the incidence of human error, while also enhancing service consistency.

With the addition of machine learning and artificial intelligence technologies, process automation is entering a new phase of intelligence. Adaptive processes can autonomously modify the execution path based on real-time data and environmental changes, thus realizing a more flexible management approach. Enterprises build end-to-end process monitoring systems, which are used to track performance metrics in real time, quickly identify and deal with anomalies, and ensure processes are continuously optimized. At the same time, process automation reduces employee time spent on repetitive tasks, allowing them to devote their energies to more creative and valuable work, which, to a certain extent, promotes the organization's ability to innovate.

3.3 Optimization of Resource Allocation

Data assets play a key role in the optimal allocation of enterprise resources and can help enterprises maximize the use of resources. Enterprises can manage inventory more accurately by analyzing historical sales data, inventory turnover and market demand forecasts, so as to not only prevent the waste of funds and storage costs caused by overstocking, but also reduce sales losses caused by understocking, thus achieving the optimal allocation of inventory resources.

In human resource management, the enterprise based on business demand data changes, and workload data analysis, the work ability of employees, work habits and work efficiency data records and analysis, flexible scheduling of staff working hours, reasonable allocation of staff jobs, improve the degree of job matching and employee satisfaction, while automation enhancement also replaces most of the repetitive manual operations, to achieve rationalization of staff deployment and maximize work efficiency. Maximize work

efficiency. In addition, predictive manpower demand analysis helps enterprises to formulate recruitment and training plans in advance to prevent the problem of insufficient or excess talent (Dai and Zhao, 2025).

Data asset management allows capital allocation to be significantly improved. The increase in data assets provides enterprises with intuitive and effective investment information, realizes the visualization of enterprise investment decisions, and after analyzing the return on investment data of each business unit and project, enterprises prioritize the allocation of funds to areas with higher returns. Enterprises can rely on data assets to realize the dynamic control of the whole process, and accurately monitor the whole cycle of capital allocation (including the flow of funds, the efficiency of use and the recovery status, etc.) through real-time collection, intelligent analysis and closed-loop feedback mechanism. Based on the real-time risk-return assessment model, the enterprise can dynamically optimize the asset allocation strategy and intelligently adjust the investment direction of funds, thus continuously improving the level of investment returns. This data-driven capital management model maximizes resource allocation efficiency and investment returns. Finally, enterprises can analyze the performance of asset allocation through financial data analysis and compare and analyze it with the original set of expectations, so that managers can quickly identify problems and wastefulness in the use of resources and take measures to improve them, thus improving the efficiency of capital utilization (Yuan et al., 2024).

3.4 Enhancing Risk Management

Enterprise risk management has new methods and tools thanks to data assets, and the ability to identify, assess and respond to risks is significantly improved. By analyzing historical data and external market information, companies can build better risk identification mechanisms and detect potential risks in business, markets, credit and operations in advance. By setting early warning indicators and monitoring unusual behavior, companies can take action to prevent risks before they become crises.

Risk assessment models are data-driven, making it feasible to quantify risk, so that enterprises can more accurately determine the likelihood of risk and its potential impact, and allocate risk management resources appropriately. For example, enterprises can use credit scoring models to analyze the repayment ability of customers, so that they can

formulate different credit policies, and analyze the transaction patterns through fraud detection algorithms, so that they can quickly detect suspicious activities and reduce financial losses..

Enterprises are able to continuously monitor risks through real-time data monitoring systems, achieve predictive maintenance through real-time equipment monitoring systems, and optimize the process flow using production data collection and analysis technology, thus effectively reducing the production defect rate and continuously improving product quality, and this ability allows risk management to shift from passive response to active prevention (Qu et al., 2025). In terms of cybersecurity, data analytics technology can detect abnormal access behavior and potential threats, and in supply chain management, real-time monitoring of supplier performance and market dynamics can reduce the possibility of supply disruption.

Data assets can help enterprises build a more comprehensive emergency response mechanism, and enterprises can analyze the possible impact of various types of risk events and design corresponding solutions through scenario simulation and stress testing. The establishment of a risk event database can summarize experience and lessons learned, further optimize the risk management system, and enhance the enterprise's risk resistance and recovery level (Liu et al., 2022).

4 CHALLENGES AND COUNTERMEASURES IN APPLYING DATA ASSETS TO ENTERPRISE INTERNAL MANAGEMENT

4.1 Data Quality and Consistency Issues

In the internal management of enterprises, the application of data assets encounters major difficulties in data quality and consistency, and the phenomenon of incomplete, inaccurate and untimely data exists widely, and the causes of these problems are complex: there are many sources of data in enterprises, and the collection standards are not uniform, and the phenomenon of silos between information systems is obvious, which leads to the obstruction of data circulation and integration; at the same time, the lack of efficient data quality management mechanism in enterprises, and the

accumulation and proliferation of erroneous data in the system. Data accumulates and spreads in the system.

Enterprises can take some measures to cope with these challenges, the establishment of unified data standards and specifications is the first step, clear data collection, processing and storage of operational processes, at the same time, the need to build a comprehensive data quality management system, covering data cleansing, validation, as well as monitoring and so on, in addition, the use of advanced data integration technology is also very critical to eliminate the data barriers between the systems, to achieve a smooth flow of data. Intelligent data verification and correction can also be carried out with the help of artificial intelligence and machine learning technology, thus enhancing the automation of data processing (Chen, et al., 2024).

4.2 Data Security and Privacy Protection

Data security and privacy protection when enterprises apply data assets has become an important challenge, and IBM's Cost of a Data Breach Report 2024 shows that the average cost of a data breach for global enterprises is \$4.88 million, an increase of 10% compared to 2023. As the digital transformation of enterprises advances, internal management involves an increasing amount of sensitive data, such as personal employee information, customer data, trade secrets, and financial information. The wider the scope of data sharing, the greater the likelihood of risk exposure. In addition, increasingly stringent data protection regulations in various countries, such as the EU's GDPR and China's Data Security Law, are placing higher demands on compliance with enterprise application data.

To meet these challenges, enterprises need to establish a multi-level data security protection system, implement a data classification and grading system, and take differentiated protection measures for data of different sensitivities; at the same time, they need to strengthen data access control and rights management to ensure that only authorized personnel can use data within the prescribed scope, and they need to apply encryption technology, data desensitization and anonymization to reduce the likelihood of data leakage (Hu, 2024).

4.3 Capacity-Building for Data Governance and Management

The key bottleneck in the effective utilization of data assets by enterprises lies in the lack of data governance and management capabilities, with widespread problems including unclear data ownership, lack of data life cycle management processes and gaps in data asset value assessment systems. In addition, the shortage of data management professionals has also become a real problem for enterprises, and these problems make it difficult for enterprises to fully explore the value of data due to the ineffective application of data assets.

Enterprises must take the construction of data governance and management capabilities as a strategic task, to establish a complete data governance organizational structure, to clarify the responsibilities of the Chief Data Officer (CDO), and to form a data governance department linking various departments to enhance the enterprise's data management work (He et al., 2024). At the same time, it is necessary to develop a comprehensive data policy and standard system, covering data classification, metadata management, master data management, and data quality management. In addition, a data asset management platform should be built to realize the visualization of data assets and their full life cycle management, and attention should also be paid to the cultivation of data talents and the construction of data culture to enhance the data literacy of all employees (Feng and Dong, 2024).

5 CONCLUSION

Enterprises enhance internal management efficiency and cultivate data-based oriented decision-making, data assets have become key strategic resources to help enterprises make decision optimization, process improvement, resource integration, and risk control. As the era of digital intelligence continues to develop, the role of data assets in enterprise management will be more important, and also provides a broader space for the release of the value of enterprise data assets, at the same time, we also need to see the dilemma of the further utilization of data assets, not only lies in the issue of data governance and security, but also lies in the further management and development of how data assets.

Data assets not only as assets in the enterprise to play value, artificial intelligence, RPA, cloud computing, the application of these technologies will

further explore the utilization of data assets to enhance the efficiency of internal management of the enterprise value, those who can effectively use the data to meet the challenges, give full play to the potential of the data assets of the enterprise will be in the future to occupy an advantageous position.

REFERENCES

- Tang, Z. D., Tang, Z., 2025. Do data assets create value for your company?--The example of Company F. *Financial Newsletter*, (04), 104-109+122.
- Dai, F., Zhao, X., 2025. Mechanisms and Paths of Value Creation of Enterprise Data Assets: Based on Decision Making Perspective. *Financial Newsletter*, (08), 3-10.
- Zhang, E. D., Li, Z., 2025. Paths and Mechanisms of Artificial Intelligence Digital Technology Innovation Driving Enterprise Data Asset Growth. *China Circulation Economy*, 39(02), 100-114.
- Liu, Q. L., Zhang, Y., Lei, Y. Y., Chen, G. J., 2022. Research on the Process, Logic and Mechanism of Digital Enabling Enterprise Innovation. *Scientific Research*, 40(01), 150-159.
- Xing, T. C., Zhang, Y., 2024. How Data Assets Enable Manufacturing Business Financing Capabilities. *Journal of Shanxi University of Finance and Economics*, 46(08), 59-71.
- Yang, J. F., Wang, C. X., Zhang, Y. C., 2025. Enterprise data resources into the table: typical scenarios and optimization solutions. *Certified Public Accountant, China*, (02), 110-116.
- Yuan, Z. M., Yin, Q., YU, X., 2024. How Data Assets Enable High-Quality Enterprise Development - An Optimization Mechanism for Traditional Factors of Production. *Western Forum*, 34(03), 54-73.
- Qu, J. S., Liu, X.W., Li, Y. S., Meng, X. B., 2025. Research on data asset accounting and management issues under new quality productivity. *Friends of Accounting*, (08), 150-155.
- Chen, X. S., Li, H. F., Liu, H. D., 2024. Data Asset Disclosure and Corporate Strategic Choices. *Industrial Economic Research*, (06), 100-113.
- Hu, W., 2024. Assetization of Enterprise Data Resources: Theoretical Mechanisms, Practical Foundations and Policy Options. *Financial Newsletter*, (03), 13-19+157.
- He, Y., Chen, L. L., Du, Y.G., 2024. Can Data Assetization Ease Financing Constraints for "Specialized, Specialized and New" SMEs?. *China's Industrial Economy*, (08), 154-173.
- Feng, Z. B., Dong, Z. J., 2024. Observations and reflections on advancing data assets to the table. *Price Theory and Practice*, (06), 16-21+224.