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Data Assets and Enterprise Innovation Performance

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Abstract: In recent years, data has shown an exponential growth trend in the era of rapid economic development. As a new asset, data has also played its practical application value on various platforms. It has become an important strategic resource for enterprises and even countries, providing favorable conditions for stimulating enterprises' innovation willingness and improving their innovation performance. Taking the data of China's A-share listed companies from 2014 to 2023 as research samples, this paper examines the impact of data assets on enterprise innovation performance and its mechanism. The results show that: (1) Data assets can help improve enterprise innovation performance; (2) Easing corporate financing constraints and promoting corporate integration into the global innovation network are the ways that data assets affect corporate innovation performance; (3) Compared with smaller enterprises, the promotion effect of data assets on innovation performance is more significant in larger enterprises. The research in this paper provides new empirical evidence for the microeconomic benefits of data assets, and has important practical significance and theoretical value for promoting enterprises to improve new quality productivity and promote high-quality economic development.

Keywords: Data assets, Enterprise innovation performance, High-quality economic development, New quality productivity.

1. Introduction

With the application of big data, mobile Internet, artificial intelligence and cloud computing in human production and life, data assets have become the most important strategic resources in the information age. The concept of data as an asset has become an industry consensus. However, in reality, the management and application of data assets are often still in the exploratory stage, and enterprises face many challenges in the management of data assets. Unlike information assets and digital assets mentioned in previous studies, data assets are the only concepts that meet accounting norms and actual situations (Tan, 2021). To this end, the Ministry of Finance formulated and issued the Guiding Opinions on Strengthening the Management of Data Assets to standardize and strengthen the management of data assets. The Guiding Opinions make it clear that the goal is to promote all people to share the dividend of the digital economy and fully release the value of data assets, to promote the compliance and efficient circulation and use of data assets as the main line, to orderly promote data assets, strengthen the whole process management of data assets, and better play the value of data assets. Therefore, enterprises should actively develop data resources that can be controlled, feasible and contribute to the future economic earnings of enterprises as corporate data assets (Luo et al., 2023), so that they can bring economic value to enterprises in the future and stimulate the vitality of enterprise innovation. Only in this way can enterprises find a new direction for future development in innovation and become the main force for promoting high-quality economic and social development.

As we all know, innovation is the primary driving force for development. The Party pointed out in its report to the 20th National Congress that we must adhere to the core position of innovation in China's overall modernization drive, accelerate the implementation of the innovation-driven development strategy, and strengthen the principal position of enterprises in scientific and technological innovation. Although China's innovation in science and technology has made great progress compared with the past, there are still many problems such as no new breakthroughs in key technologies, insufficient independent innovation ability of enterprises and so on. This is often due to the incomplete market caused by information asymmetry, which makes enterprises face financing constraints and give up some investment projects with large capital demand (Fazzari et al., 1987). In the era of data elements enabling enterprise development, data assets may become a new path to improve enterprise innovation performance by easing financing constraints. Most of the existing literatures indirectly analyze and study the impact of data assets on enterprise behavior from the perspectives of the combination of digital economy and market structure, digital transformation and data element empowerment (Tang et al., 2022; Li et al., 2022; Xu et al., 2023). There are few direct studies on the impact of data assets on the business activities of enterprises, and most of the current studies on this part only stay at the theoretical level. For the research on the influencing factors of innovation performance, most scholars study from the two aspects of internal governance and external policies. Internal governance includes ownership concentration and principal-agent issues (Hill et al., 1989; Wu, 2014), external policies include government subsidies and tax incentives (Guo, 2018; Czarnitzki et al., 2011). However, there are few studies on the impact of data assets on enterprise innovation behavior from the perspective of production factors.

In view of this, this paper selects China's A-share listed companies from 2014 to 2023 as research samples to explore the impact of data assets on enterprise innovation performance. Compared with the existing research, the possible contribution of this paper is mainly reflected in the following three aspects: First, it enriches the empirical evidence about the impact of data assets on micro enterprises. Based on existing research, some scholars are committed to building a value evaluation model for data assets (Xu et al., 2022; Fang et al., 2021). A few scholars have studied the impact of data assets on micro-factors such as improving financing ability and easing financing constraints (Xing et al., 2024; Ying et al., 2024). From the perspective of enterprise innovation performance, this paper deeply analyzes the

mechanism of data assets' influence on enterprise innovation performance, and makes a useful supplement to the research on the correlation between data assets and economic consequences of enterprises.

Second, it expands the research on the influencing factors of enterprise innovation performance. The existing literature covers equity incentive, internal control, executive compensation and other aspects (Wu et al., 2024; Gu et al., 2021; Liu et al., 2022) to study its impact on enterprise innovation performance. At this stage, data assets have become a new production factor. At the same time, data assets can further link traditional production factors and enable them to form a closer interactive relationship (Xie et al., 2020), so as to reduce costs and increase efficiency, and become the driving force for enterprise innovation. Therefore, to some extent, this paper complements the relevant research on the factors affecting enterprise innovation performance.

Thirdly, the research conclusion of this paper has certain guiding and enlightening significance for enterprise operators. Innovation is the primary driving force for development. Under the trend of rapid development of big data technology, giving full play to the value of data assets and promoting enterprise innovation performance is of important reference value for helping entities to have core competitiveness in the era of digital economy and further achieve high-quality economic development.

2. Theoretical Analysis and Hypothesis

As a new type of asset, data asset refers to the data that has a certain application scenario and is recycled or continuously used in the production process of an enterprise for more than one year. Data that can be used as assets is production assets, and the corresponding expenditure will have an impact on the production and operation of enterprises (Xu et al., 2022). As a key production factor, data assets can also help enterprises improve the process and product quality, so as to enhance labor productivity and obtain more profits (Xu et al., 2020). Similarly, the quantity and quality of data assets will affect the market value and performance of enterprises (Lu et al., 2023), so that enterprises can obtain more profits, provide sufficient funds for enterprises' innovation activities, and lay the foundation for enterprises' future production and operation development. Due to the diversity of data assets, enterprises can also integrate relevant digital technologies into the governance structure of the organization, so as to realize the reorganization of the organizational structure of the enterprise (Matt et al., 2016), so as to change the innovation process and innovation model of the enterprise, and thus improve the innovation performance of the enterprise. Therefore, this paper argues that data assets may help enterprises improve innovation performance.

First, data assets can help ease corporate financing constraints. Financing constraint is an important hindrance to enterprise innovation. This is because enterprise innovation has higher financing costs and adjustment costs. High financing cost means that enterprises need to store enough internal funds, and high adjustment cost requires that enterprises' investment activities should be sustainable to ensure the smooth progress of innovation activities (Ju et al., 2013). The development of data assets has eased the situation of corporate financing constraints. First, with the expansion of the scale of data assets, the status of enterprises is also changing, which is conducive to enterprises to obtain more competitive financing conditions and reduce debt financing costs (Wang et al., 2023). In addition, data assets can connect the information of various departments of an enterprise, solve the problem of separation between departments under the traditional business model, alleviate the agency problem between enterprises and creditors, and bring more debt financing to enterprises (Li, 2024). Secondly, the circulation of data resources is free of geographical and traffic restrictions, which enables the advantages of data resource sharing dividends to be fully played (Farboodi et al., 2019), enabling investors to fully and accurately understand the operating conditions of enterprises, solving the problem of information asymmetry, and easing the internal financing constraints of enterprises. Thirdly, data assets reshape the business process of enterprises, achieve efficient collaboration in production, sales and other links, reduce production costs and improve product quality. Excellent product quality is the basis for enterprises to obtain commercial credit financing (Zhang et al., 2024). It can be seen that data assets can alleviate financing constraints, reduce enterprises' financing costs and adjustment costs in innovation activities, and enable enterprises' innovation to continue, thus improving their innovation performance.

Second, data assets help companies integrate into global innovation networks. Nowadays, it is difficult for a single innovation subject to independently carry out innovation activities, and it is necessary to form a cooperative relationship with other organizations to create new value through exchange and sharing of knowledge and technology, which is open innovation. Companies seek external knowledge through cooperation and integrate it into their own innovation activities, while transferring unused internal knowledge to other organizations, so that knowledge is widely distributed among organizations (Chesbrough et al., 2018). In particular, the speed of technology upgrading and product updating in the information age is getting faster and faster, and it is becoming more and more difficult for enterprises to innovate independently, and enterprises are gradually transforming from closed innovation to open innovation (Jiang et al., 2021). Open innovation breaks down the boundaries between enterprises and other organizations and improves their innovation performance by cooperating with other companies, and both high-tech and low-tech enterprises can benefit from it (Zhang et al., 2024). Integration into the global innovation network means that enterprises embed in the world innovation network and join the international innovation team by participating in international trade and global value chain, which is a typical open innovation behavior (Li et al., 2022). And the sharing and exchange characteristics of data assets (Acquisti et al., 2016) can realize the exchange of knowledge resources among enterprises, enhance the international technological innovation cooperation, and promote the open innovation of enterprises. Moreover, the virtuality of data assets also overcomes the limitations of space and region, strengthens the connection among innovation subjects, shares the research and development process in real time, deepens the cooperation among organizations, improves the efficiency of the use of innovation resources, and thus improves the innovation performance of enterprises.

Therefore, based on the above analysis, this paper proposes the following hypothesis:

H1: Data assets can help improve enterprise innovation performance.

3. Research Design

3.1. Sample Selection and Data Source

This paper chooses China's A-share listed companies from 2014 to 2023 as the research object. In May 2014, the China Academy of Information and Communications Technology published the White Paper on Big Data, aiming at the problems existing in the development of big data in China, proposing strategies and suggestions to promote the application of big data technology and promoting the emergence and development of data assets in China. On this basis, the sample is further processed as follows: (1) Excluding companies with abnormal transactions such as ST and *ST companies, the data of these companies are not comparable; (2) Exclude insolvent companies, whose data are meaningless; (3) Excluding listed companies in the financial industry, the asset liability structure of the financial industry is special, which will cause data instability; (4) Eliminate companies with missing relevant variables to prevent them from affecting the accuracy of the analysis results. Finally, A total of 28876 observations were obtained from 4336 A-share listed companies. Company-level data mainly comes from the CSMAR database, the Wind financial terminal database and the China Research Data Service Platform (CNRDS).

3.2. Variable Selection and Model Design

3.2.1. Explanatory Variable

The value of data assets can be quantified by using the gap between the market value and the book value of the enterprise (Veldkamp,2023). Therefore, in this paper, the value of the enterprise data assets is quantified by combining the measurement of data assets by Tamble et al. (2020) and Lu et al. (2023): Data_Asset=Ln (Market value - fixed assets - financial assets - intangible assets). Among them, the market value of an enterprise is the sum of the book value of total liabilities and the market value of stocks, and intangible assets include financial assets and intangible assets in the narrow sense of accounting. In addition, according to the identification of the scope of financial assets by Peng et al. (2018), the sum of transactional financial assets, derivative financial assets, loans and advances, net available-for-sale financial assets, net hold-to-maturity investment and net investment real estate is taken as the net financial assets of enterprises.

3.2.2. Explained Variable

Based on the study of Li et al. (2022), this paper uses the number of invention patent applications (Innovation) in the current year to measure the innovation performance of enterprises. Due to the uncertainty and instability of patent authorization, the number of patent applications can better reflect the innovation performance of enterprises. Compared with the strategic innovation tendency of utility model patents and design patents, the application of invention patents can better reflect the innovation of enterprises. The number of patent applications comes from the Chinese research data service platform. Due to the situation that the number of applications of some enterprises is 0 in the early stage of entrepreneurship or other reasons, this paper adopts the logarithmic method of adding 1 to the corresponding data to construct the enterprise innovation performance.

3.2.3. Control Variable

With reference to existing research literature (Tang et al., 2020; Wu, 2024; Li et al., 2022), this paper selected enterprise Age (Age), asset-liability ratio (Lev), return on total assets (Roa), ownership concentration (Share), cash flow level (Cfo), Merge (Merge) and audit opinion (Optin) as the control variables in this paper.

In order to verify the research hypothesis of this paper, the regression model of this paper is as follows:

$$Innovation_{i,t} = \alpha_0 + \alpha_1 Data\_Asset_{i,t-1} + \alpha Controls_{i,t-1} + \mu_t + \theta_i + \varepsilon_{i,t}$$

Among them, Innovation represents enterprise innovation performance, Data_Asset represents enterprise data assets, Controls represents a series of control variables, and it represents random disturbance term. In order to reduce the negative impact of missing variables, the firm fixed effect θ and year fixed effect μ are also added to the regression equation.

Table 1. Variable Definition

Variable	Instructions
Data_Asset	Ln (Market Value - Fixed assets - Financial assets - intangible assets)
Innovation	The number of invention patent applications add 1and then take the natural logarithm
Age	The value is calculated by subtracting the year of establishment from the year of observation
Lev	Total liabilities/Total assets
Roa	Net profit/Total assets
Share	Number of shares held by the top five shareholders divided by the total number of shares
Cfo	The direct method is used to calculate the cash flow position
Merge	If the chairman and the general manager are the same person, take 1; otherwise, take 0
Optin	The value of unreserved opinion is 0, otherwise it is 1

4. Empirical Result

4.1. Descriptive Statistics

Table 2 lists the descriptive statistical results of the main variables in this paper. The results show that the mean value of Data_Asset is 22.981, the minimum value is 19.737, the maximum value is 30.419, and the standard deviation is 1.286, which indicates that there is a large difference in the value of data assets in the sample. The mean value of Innovation performance is 2.032, while the standard deviation is 1.585, which indicates that there are significant differences in innovation performance of enterprises. In addition, there are no outliers in other variables, indicating that the selection of variables in this paper is generally reasonable.

Table 2. Descriptive Statistics of Primary Variables

Variable	Obs	Mean	Std	Min	Max
Data_Asset	28876	22.94	1.29	19.74	30.41
Innovation	28876	2.04	1.60	0	8.84
Age	28876	2.89	0.34	1.10	4.14
Lev	28876	0.42	0.20	-0.20	1.70
Roa	28876	0.04	0.65	-1.65	108.37
Share	28876	0.54	0.16	0.01	0.99
Cfo	28876	0.05	0.10	-10.22	2.22
Merge	28876	0.30	0.46	0	1
Optin	28876	0.98	0.15	0	1

4.2. Correlation Analysis

In order to test the correlation between the main variables, Pearson correlation coefficient test and Spearman correlation coefficient test were conducted in this paper. It can be seen from the test results of the data in this paper that data assets are significantly positively correlated with enterprise innovation performance, which preliminarily validates the hypothesis H1 above, that is, data assets can promote the improvement of enterprise innovation performance. Secondly, from the correlation coefficient of other variables, there is no high correlation between the variables. This paper further measured the inflation factor (VIF value) of each variable. It can be seen from Table 3 that the VIF value of each variable is less than 5, indicating that there is no multicollinearity between the variables.

4.3. Correlation Analysis

Table 3. Regression Analysis

	(1)	(2)	(3)
	Innovation	Innovation	Innovation
Data_Asset	0.401***	0.523***	0.283***
	(58.16)	(62.70)	(22.89)
Age		-0.415***	-0.059
		(-15.32)	(-0.58)
Lev		-1.048***	-0.324***
		(-19.68)	(-5.73)
Roa		0.057***	0.011
		(3.40)	(1.06)
Share		-0.640***	0.301***
		(-10.98)	(3.64)
Cfo		0.431***	-0.073
		(3.92)	(-1.03)
Merge		0.176***	0.043**
		(9.05)	(2.41)
Optin		0.596***	0.219***
		(9.77)	(5.69)
Constant	-7.164***	-8.641***	-4.526***
	(-45.18)	(-44.03)	(-11.54)
Id	NO	NO	YES
Year	NO	NO	YES
N	28876	28876	28876
R2	0.105	0.137	0.808

Columns (1) through (3) of Table 3 show the empirical results of the main hypothesis. Among them, column (1) is the regression result with no control variables and no control year and individual fixed effects, column (2) is the regression result with control variables, and column (3) is the regression result with both control variables and control year and individual fixed effects. It is found that the empirical results in columns (1) and (2) show that the estimated coefficients of Data_Asset are positive at the 1% level (coefficients are 0.401 and 0.523, respectively). The empirical results of controlling year and individual fixed effect based on the addition of control variables in column (3) show that the estimated coefficient of Data_Asset is still significantly positive (coefficient 0.283). This indicates that at this stage, data assets can significantly promote the improvement of enterprise innovation performance, and hypothesis H1 has been well verified.

4.4. Robustness Test

4.4.1. Endogeneity Problem

Considering that enterprises with relatively high innovation performance are more inclined to have a large degree of data assets, that is to say, enterprise innovation performance will in turn have an impact on data assets. Therefore, in order to avoid the endogenous problems caused by reverse causation, this paper will adopt the instrumental variable method to reduce the potential impact. Referring to the research ideas on instrumental variables in existing research articles, this paper uses the method of constructing instrumental variables proposed by Han et al. (2020) and Nunn and Qian (2014) for reference, and chooses the interaction term between the number of fixed telephone users in each city in 1984 and the mean value of data assets at the national level as the instrumental variable. This is because the technical level of the historical telecommunications infrastructure will affect the development of Internet technology in the future, and thus affect the generation of data assets. The results are shown in Table 4. In the first stage regression, the estimated coefficient of the instrumental variables selected in this paper is significant at the level of 1% ($p<0.01$), indicating that the instrumental variables have a good explanatory power to the endogenous variables. Secondly, the F statistic value of Wald test is 35.38, which indicates that the instrumental variables selected in this paper do not have the problem of weak instrumental variables. The regression results of the instrumental variable method are shown in Table 4. It can be seen that in the second stage regression, the coefficient of fitting value of explanatory variables is significantly positive at the level of 1%, which is 1.937, consistent with the result of main regression, indicating that the research results in this paper are relatively robust.

Table 4. Instrumental Variable Method

	Innovation	
	First	Second
Iv	0.005***	
	(5.95)	
Data_Asset		1.937***
		(4.52)
Controls	YES	YES
Id	YES	YES
Year	YES	YES
F-test	35.38	
P	0.000	
N	28876	28876

4.4.2. Other Robustness Tests

In this paper, the explanatory variable data asset of main regression is replaced by expanding the scope of financial asset, and the financial asset used in the measurement index of data asset is expanded by referring to the practice of Hu et al. (2017). That is, in addition to the six types of financial assets used above, it also includes monetary funds, buy-back financial assets, interest receivable, dividends receivable, short-term investments, long-term equity investments and long-term receivables. The new data asset is named data1. Then, data1 was replaced by the data asset index in the main regression for regression analysis, and the results of column (1) in Table 5 were obtained. As can be seen from column (1), the coefficient of this explanatory variable is significantly positive at the level of 1%, and the coefficient is 0.252, which supports the main research conclusions of this paper.

Drawing on the practice of Wang et al. (2022), this paper uses the number of authorized invention patents to replace the above measurement indicators of enterprise innovation performance for testing. The number of invention patents granted is named inn1. Then, it is replaced by the enterprise innovation performance indicators in the main regression for a regression analysis, and the regression results are reported in column (2) in Table 5. We can see that the coefficient of explanatory variable after being replaced by explanatory variable is significantly positive at the level of 1%, and the coefficient is 0.227, indicating that data assets still have a significant promoting effect on the improvement of enterprise innovation performance, which is in line with the main research conclusions of this paper.

Table 5. Other Robustness Test Results

	(1)	(2)
	Innovation	Inn1
Data_Asset		0.227***
		(20.87)
Data1	0.252***	
	(21.48)	
Constant	-3.837***	-3.937***
	(-10.02)	(-11.40)
Controls	YES	YES
Id	YES	YES
Year	YES	YES
N	28876	28876
R^2	0.807	0.792

5. Further Analysis

5.1. Mechanism Analysis

5.1.1. Financing Constraint

In order to empirically test the impact of data assets and financing constraints, this paper draws on the practice of Chen et al. (2020) and adopts FC index to measure financing constraints. In the first step, the enterprise scale, cash dividend payout ratio and listing years are centrally processed in different years, and the average value is obtained to sort the enterprises. In the second step, the upper and lower tripartite points are taken as the demarcation points of financing constraints, and the virtual variable FC_ flag is obtained. The enterprises above the upper tripartite are the low financing constraint group, and the enterprises below the FC_ flag value of 0, 33% are the high financing constraint group, and the FC_ flag value is 1. The third step is to build the following model for Logit regression. Finally, the P (FC_ flag = 1) value of different enterprises in different years is fitted, namely the FC index. The FC index ranges from 0 to 1, and the closer it is to 1, the greater the financing constraint problem of enterprises. The test results are shown in column (1) of Table 6. Data assets can indeed alleviate the problem of financing constraints, and thus improve the innovation activities and innovation performance of enterprises.

$$FC\_flag = \alpha_0 + \alpha_1 Size + \alpha_2 Lev + \alpha_3 (CashDiv/TA) + \alpha_4 BM + \alpha_5 C\_Ratio + \alpha_6 (EBIT/TA) + \varepsilon$$

5.1.2. Integration into the Innovation Network

Referring to the study of Li et al. (2022), this paper takes whether a broad overseas investment behavior occurs as a measure of whether an enterprise integrates into the innovation network. Data from CSMAR overseas affiliates table. As can be seen from column (3) in Table 6, the positive correlation coefficient indicates that data assets can significantly promote the integration of enterprises into the innovation network and improve the innovation performance of enterprises.

Table 6. Mechanism Analysis Results

	(1)	(2)
	FC	Inn-Inn
Data_Asset	-0.111***	0.059***
	(-57.41)	(14.71)
Controls	YES	YES
Id	YES	YES
Year	YES	YES
N	28450	28876
R^2	0.855	0.788

5.2. Heterogeneity Analysis

Enterprises of different sizes have different degrees of ownership of data assets, and the management and use level of data assets must be different. Compared with large enterprises, small enterprises do not have sufficient capital and capacity to develop data assets and improve innovation performance. However, large-scale enterprises have sufficient funds, which can ensure the continuous investment of funds to a greater extent (Luo et al., 2024). Whether it is data asset management or enterprise innovation activities, sufficient technical support and talent accumulation are needed. Large-scale enterprises have deep intellectual capital and strong

learning ability (Zou et al., 2017), and are capable of improving innovation performance through data assets. Therefore, large-scale enterprises can better utilize the value of data assets to improve their innovation performance than small-scale enterprises.

In this paper, enterprises whose enterprise size is larger than the median of the same industry in the same year are divided into large-scale enterprises with a value of 1; Conversely, an enterprise with a business size smaller than the industry median is a small enterprise and is assigned a value of 0. In Table 7, column (1) shows the regression results of large-scale enterprises, and column (2) shows the regression results of small-scale enterprises. According to the regression results in Table 7, we can see that data assets have significant promoting effects on the innovation performance of enterprises of different sizes, but the correlation coefficients are not the same. Compared with small-scale enterprises, large-scale enterprises can better play the potential role of data assets and promote enterprise innovation performance. This is because large-scale enterprises have more data assets. In order to expand the advantages of enterprises and increase the scale of enterprises in the information age, the management and application level of data assets will be strengthened, and the innovation performance of enterprises will be promoted.

Table 7. Heterogeneity Analysis Results

	(1)	(2)
	Innovation	Innovation
Data_Asset	0.272***	0.193***
	(12.81)	(9.77)
Constant	-4.280***	-2.319***
	(-6.78)	(-3.72)
Controls	YES	YES
Id	YES	YES
Year	YES	YES
N	13994	14334
R^2	0.834	0.742

6. Conclusion

Nowadays, data is increasingly becoming the most important strategic resource in our market. The data attribute of data assets can effectively improve the resource allocation of production factors, reduce the internal and external information asymmetry of enterprises, and provide good conditions for enterprises' innovation activities. Therefore, this paper takes the data of China's A-share listed companies from 2014 to 2023 as research samples to study the impact of data assets on enterprise innovation performance from both theoretical and empirical aspects. The results show that data assets can significantly improve firm innovation performance, and this result remains reliable after handling the endogeneity problem and passing other robustness tests. Second, data assets promote innovation by easing financing constraints, increasing R&D investment, and integrating into global innovation networks, thereby improving innovation performance. Finally, this paper finds that data assets have a greater effect on innovation performance in large-scale enterprises than in small-scale enterprises.

Based on the above research conclusions, this paper puts forward the following policy recommendations: (1) Data assets are an important resource to promote the deep integration of big data and the real economy at this stage, the transformation of old and new driving forces, and the economic transition to high-quality development. Therefore, improving the right confirmation mechanism of data assets and promoting the management method of data assets are the focus of the government and enterprises. Enterprises should increase the construction of data standards, clarify the pricing rules and trading mechanisms of data assets, so that data assets, as a new asset, can play its unique advantages in the information age, while solving the risks caused by unclear property rights or lack of protection of transactions. (2) Enterprises should be proactive in developing and utilizing data assets. According to the actual situation, the reasonable introduction of high-tech to improve the accuracy and efficiency of data mining, save labor costs, establish a business model with data fusion technology as a strategic asset, and finally bring certain economic benefits and social effects to the enterprise. (3) Enterprises should fully tap the potential value of data assets when using and managing them. Not only through it to quickly obtain a variety of information, but also to give full play to its role in the optimization of traditional production factors. Through data elements to enable enterprise capital optimization and technological change, enhance the vitality of enterprise innovation. This also means that enterprises should focus on cultivating technical talent teams, adapt to the talent structure of data development, effectively integrate operational data to serve the enterprise, and make data part of the profit center. (4) In the contemporary era of rapid development of digital technology, both large-scale and small-scale enterprises need to improve the ownership and management level of data assets. It is necessary to communicate, cooperate and integrate among enterprises and various departments of enterprises, realize the internal and external circulation of data assets, form a healthy competitive relationship, and jointly become an innovative enterprise adapting to The Times.

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