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Research on the Impact of Enterprise Digital Transformation on Enterprise Value

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Abstract

Enterprise digital transformation can help enterprises better respond to market changes, improve operational efficiency, reduce costs, and enhance their competitiveness and innovation capabilities. This paper takes A-share listed enterprises in Shanghai and Shenzhen from 2013 to 2023 as the original samples and focuses on exploring the impact of enterprise digital transformation on enterprise value. The main conclusions of this paper indicate that the enterprise digital transformation can significantly promote the enhancement of enterprise value. The impact mechanism of enterprise digital transformation on enterprise value is manifested in two aspects: firstly, enterprise digital transformation can effectively reduce inefficient investment and thus promote the enhancement of enterprise value; secondly, enterprise digital transformation has a positive impact on audit opinions and thus promotes the enhancement of enterprise value. The heterogeneity test reveals that the promotion effect of digital transformation on enterprise value is more pronounced in the samples of small enterprises and non-state-owned enterprises. This paper enriches the relevant research on enterprise digital transformation and helps encourage enterprises to actively promote digital transformation. It also provides theoretical basis and practical implications for the government to formulate policies to promote digital construction and strive for high-quality economic and social development.

CCS Concepts

- **Applied computing** → Enterprise computing; Service-oriented architectures.

Keywords

Enterprise Digital Transformation, Enterprise Value, Inefficient Investment, Audit Opinion

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Introduction

In today's era of rapid development and application of information technology, the mode of economic operation is constantly integrating, and the digital economy has become a "new engine" in high-quality development. Digital transformation can be defined from four perspectives: products and services, business models, organizational structures, and enterprise strategies (Li Yuanqin et al., 2022). From the perspective of products and services, by expanding the use of IP technologies, such as analysis, mobile computing, social media, and intelligent embedded devices, enterprises improve traditional technologies and ultimately achieve significant business upgrades (Chanias, 2017). From the perspective of business models, enterprise digital transformation refers to the integration of digital technologies with production and operation activities by enterprises, and thus the derivation of new business models (Song Deyong et al., 2022). From the perspective of organizational structures, using digital technology can effectively optimize enterprise production processes and product services, ultimately leading to organizational changes (Hu Qing, 2020). From the perspective of enterprise strategies, Rogers (2016) believes that technological means can improve existing infrastructure of enterprises, but more importantly, it can stimulate enterprise strategic thinking and make it a dominant force for transformation. Enterprises use digital technologies to reshape their strategic development plans, change their corporate cultures and collaboration methods, and thus achieve digitalization of strategic arrangements (Zhang Zhengang et al., 2023). It can be seen that modern digital reform is actually a kind of reconstruction of enterprise strategic thinking, processes, team sizes, and service methods based on information technology (Qian Jingjing, He Jun; 2021).

Domestic and foreign scholars have examined the relationship between digital transformation and enterprise value from different perspectives. However, most of the existing literature focuses on discussing the mechanism of action between them from the perspectives of total factor productivity, performance and production efficiency of enterprises. Few scholars discuss the role of factors at the level of inefficient investment and audit opinions. Therefore, whether enterprise digital transformation has a direct and significant impact on enterprise value and how it affects are still in a stage that can be further explored in current research.

This paper will analyze the impact of enterprise digital transformation on enterprise value through theoretical elaboration and data empirical analysis, and accordingly discuss how enterprises should actively carry out the next step of digital transformation development. Compared with previous studies, this paper may have the following innovative points and marginal contributions: Firstly, instead of merely examining the overall impact of digital transformation on enterprise value, this paper also delves into the mechanism of action, thus filling the gaps in the previous literature's understanding in this regard. Based on this, an empirical test is conducted with the aim of enriching the content of the theoretical and empirical research on the micro-effects of digital transformation. Secondly, the research perspective adopted in this paper is relatively novel. In the mechanism analysis, it first approaches from the perspective of inefficient investment and then explores the impact of enterprise digital transformation on enterprise value from the perspective of audit opinions.

Theoretical Analysis and Research Hypotheses

1 The Relationship between Enterprise Digital Transformation and Enterprise Value

Enterprises can improve the information transmission ability of organizations by using digital technology, unblocked the communication channels between enterprises and the external environment, and the capital market has good expectations for enterprise digital transformation, which is beneficial to the enhancement of enterprise value (Li Xiaozhong, 2021). Dai Fei et al.(2023)believe that digital transformation can have a positive impact on the enhancement of enterprise value through digital technology effect mechanisms and information transfer effect mechanisms. Among them, retail enterprises mainly enhance their enterprise value through three paths: completing the upgrade of the entire industrial chain, realizing value co-creation, and catering to consumer groups (Liu Bo, 2022).

In addition, some scholars in China have also reflected the impact of enterprise digital transformation on enterprise value through research on enterprise total factor productivity, performance, investment efficiency, and production efficiency. In terms of enterprise total factor productivity, Zhao Chenyu, Wang Wenchun et al. (2021) based on the data of A-share manufacturing listed enterprises in China after empirical testing found that digital transformation can promote the enhancement of total factor productivity through mechanisms such as improving innovation capabilities, optimizing the structure of human capital, promoting the integration of advanced manufacturing and modern services, and reducing costs. In terms of enterprise financial performance, the two stages of digital transformation - the application of digital technologies and the transformation of digital business models - can significantly improve the financial performance of manufacturing enterprises (Bai Fuping, Liu Donghui; 2022). In terms of investment efficiency, digital transformation can significantly improve enterprise investment efficiency, specifically manifested as suppressing excessive investment and alleviating investment deficiency (Li Lei, Yang Shuili; 2022). There are also very few scholars who analyze the impact of enterprise digital transformation from an audit perspective and believe that the application of enterprise digital technologies reduces

enterprise risks to some extent and improves the transparency of information disclosure, thus improving audit quality (Zou Meifeng, Zhang Lidan, Zhai Huayun et al.; 2022). Based on this, this paper proposes Hypothesis 1.

H1: There is a positive correlation between enterprise digital transformation and enterprise value.

1.1 The Impact of Inefficient Investment on the Relationship between Enterprise Digital Transformation and Enterprise Value

Investment, as an important part of enterprise financial activities, is an important driving force for enterprises to achieve value enhancement. It is generally believed that when the marginal revenue of investment equals the marginal cost, the enterprise investment reaches the optimal level. However, due to the existence of problems such as capital market frictions, agency conflicts and information asymmetry, enterprise investment may deviate from the optimal level, resulting in inefficient investment problems.

Digital transformation can inhibit inefficient investment of enterprises. Firstly, enterprise digital transformation can timely understand customer needs, grasp market trends and identify market risks by collecting and analyzing data, so that managers can make better investment decisions, avoid unnecessary investments and waste. Secondly, enterprise digital transformation can effectively alleviate agency problems, enabling shareholders or external investors to more effectively supervise the management activities and investment decisions of managers, thus more effectively restricting the irrational behaviors of managers, and finally inhibiting inefficient investment and enhancing enterprise value. Based on this, this paper proposes Hypothesis 2.

H2: Enterprise digital transformation can effectively reduce inefficient investment and then promote the growth of enterprise value.

1.2 The Impact of Audit Opinions on the Relationship between Enterprise Digital Transformation and Enterprise Value

Audit opinions is the statement made by the auditor after completing an audit, expressing whether the audited object conforms to the auditing standards. Audit opinions, to some extent, reduce the information asymmetry problem between enterprise owners and agents, enhance information transparency, increase investor confidence, prompt agents to restrain themselves, thus improving the corporate governance level and being conducive to enhancing enterprise value.

Enterprise digital transformation is conducive to improving audit efficiency. Firstly, enterprise digital transformation greatly improves the authenticity and integrity of data, increases the transparency of financial reports, and helps auditors to obtain enterprise financial information more accurately, more timely and more comprehensively. Secondly, auditors can use data analysis and other technologies to conduct audits more efficiently, thus better assessing the risks and financial status of enterprises, and finally improving the credibility and accuracy of audit opinions. Based on this, this paper proposes Hypothesis 3.

H3: Enterprise digital transformation can have a positive effect on audit opinions and then promote the growth of enterprise value.

2 Research Design

2.1 Sample Selection and Data Sources

Considering factors such as the availability of various enterprise indicators and sample representativeness, the original sample is the data of A-share listed companies in Shanghai and Shenzhen from 2013 to 2023. The original sample data of listed companies is sourced from the CSMAR database of GTA. Firstly, according to the industry classification code of the CSRC in 2012, this paper screens out the influence of the financial industry; secondly, in order to obtain more accurate enterprise financial data and avoid interference with various indicators due to poor enterprise operation, this paper excludes the samples of ST companies during the research process; again, in order to prevent the existence of extreme values from causing errors in the results of empirical analysis, this paper winsorizes all continuous variables at the upper and lower 1% levels.

2.2 Variable Selection

2.2.1 Dependent Variable. Enterprise Value (Tobin Q). Referring to the research of Huang Dayu, Zhang Yeqing (2022) and others, this paper measures enterprise value by the Tobin Q value (Tobin Q) indicator. The detailed calculation formula of this indicator is $Tobin\ Q = (\text{year-end stock price} * \text{number of tradable shares} + \text{net asset value per share} * \text{number of non-tradable shares} + \text{book value of liabilities}) / \text{total assets}$ for the current year.

2.2.2 Core Explanatory Variable. Enterprise Digital Transformation Index DT. For the measurement of digital transformation indicators, it can mainly be classified into two methods: quantitative description method and text analysis method. Referring to the research of Li Yuanqin (2020), this paper selects the enterprise digital transformation index in the CSMAR database as the core explanatory variable. This index is calculated by weighting six indicators: strategic guidance, technology-driven, organization-empowered, environment-supported, digital results, and digital applications. It has been compiled since 2010 and became relatively mature in 2011. The specific weights are $0.3472 * \text{strategic guidance score} + 0.162 * \text{technology-driven score} + 0.0969 * \text{organization-empowered score} + 0.0342 * \text{environment-supported score} + 0.2713 * \text{digital results score} + 0.0884 * \text{digital applications score}$. All subdivision indicators are standardized values.

2.2.3 Control Variables. In addition, in order to reduce the endogeneity problem caused by omitted variables, enterprise-level X_{it} is also controlled in the model. Referring to the research of Xiao Hongjun et al. (2021), in this paper X_{it} specifically includes enterprise size (Size, measured by the natural logarithm of the total assets of the listed company at the end of the year), enterprise age (Age, measured by the number of years since the company was established), enterprise leverage rate (Leverage, measured by the asset-liability ratio of the listed company in the current year), enterprise operating performance (ROA, measured by the return on assets of the listed company in the current year), duality of positions (dual, whether the chairman and the general manager are

concurrent, 1 if yes, 0 if no), cash flow ratio (Cashflow, measured by the cash flow ratio held by the listed company in the current year), equity concentration (Top1, measured by the shareholding proportion of the first major shareholder of the listed company in the current year), enterprise ownership (SOE, a dummy variable, 1 if the listed company is a state-owned enterprise, 0 if not).

2.2.4 Model Specification. This paper uses the panel data of listed companies to construct a two-way fixed effects model for empirical analysis.

$$y_{it} = \beta_0 + \beta_1 x_{it} + \mu_i + \varepsilon_{it} \quad (1)$$

$$\bar{y}_i = \beta_0 + \beta_1 \bar{x}_i + \mu_i + \bar{\varepsilon}_i \quad (2)$$

$$y_{it} - \bar{y}_i = \beta_0 - \beta_0 + \beta_1 x_{it} - \beta_1 \bar{x}_i + \mu_i - \mu_i + \varepsilon_{it} - \bar{\varepsilon}_i \quad (3)$$

$$\Rightarrow \widehat{y}_{it} = \beta_1 \widehat{x}_{it} + \widehat{\varepsilon}_{it} \quad (4)$$

Based on this, the model of this paper is established as shown in equation (5):

$$TobinQ_{it} = \beta_0 + \beta_1 \ln dt_{it} + \beta_2 X_{it} + \text{ind}_i + \text{year}_t + \varepsilon_{it} \quad (5)$$

In equation (5), the subscripts i and t represent listed companies and statistical years respectively. The dependent variable $TobinQ_{it}$ is the enterprise value of listed company i in year t. $\ln dt_{it}$ is the core explanatory variable in this paper, which measures the enterprise digital transformation. Therefore, β_1 is the core parameter to be estimated in this paper. According to the above theoretical hypothesis, it is expected that β_1 is significantly positive. In addition to the core explanatory variable, the model also includes financial indicators at the enterprise level X_{it} . Besides, ind_i is the industry fixed effect, year_t is the time fixed effect, and ε_{it} is the disturbance term of the model.

3 Empirical Analysis

3.1 Descriptive Statistics

Table 2 shows the descriptive statistical results of each variable. It can be seen that the minimum value of enterprise value is 0.16, the maximum value is 7.427, and the average value is 1.949, indicating that there is great individual heterogeneity in the market price evaluation of different enterprises, and the overall market value of enterprises is relatively low. The mean value of $\ln DT$ is 3.575. Compared with the results of previous literature, the degree of enterprise digital transformation has increased. In addition, in terms of control variables, the average enterprise size is 22.19, indicating that the enterprise size is large. The mean value of return on assets is 0.05, and the standard deviation is 0.057, which indicates that the profitability of enterprises is still relatively low. The mean shareholding proportion of the first major shareholder is 34.8%, indicating that the overall equity concentration of enterprises is relatively high. From the perspective of enterprise nature, 31.9% of the samples are state-owned enterprises, indicating that non-state-owned enterprises account for the majority.

3.2 Analysis of Benchmark Regression Results

The regression analysis results of the relationship between enterprise digital transformation and enterprise value are shown in Table 3. Among them, column (1) adds control variables, column (2) adds year fixed effects, and column (3) further adds industry fixed effects. It can be seen that the estimated coefficients of the core explanatory

Table 1: Types, Names and Specific Definitions of Variables

Variable Type	Variable Symbol	Variable Name and Definition
Dependent Variable	TobinQ	Enterprise market value, the sum of stock market value and book value of liabilities divided by total assets
Explanatory Variable	lnDT	Natural logarithm of digital transformation index plus 1
	size	Enterprise size, ln (total assets of the listed company at the end of the year)
Control Variables	age	Enterprise age, measured by the company's founding years
	lev	Enterprise leverage rate, measured by the asset-liability ratio of the listed company at the year
	dual	Dual positions, whether the chairman and the general manager are concurrent, if yes, take 1, otherwise take 0
	roa	Enterprise operating performance, measured by the asset return rate of the listed company at the year
	soe	Enterprise ownership, if a state-owned enterprise, take 1, otherwise take 0
	top1	Equity concentration, measured by the shareholding proportion of the first major shareholder of the listed company at the year
	cashflow	Cash flow ratio, measured by the cash flow rate of the listed company at the year

Data Source: GTA CSMAR Database

Table 2: Descriptive Statistics of Variables

Variable	Sample Size	Minimum	Maximum	Mean	Standard Deviation
TobinQ	27989	0.16	7.427	1.949	1.182
lnDT	27989	3.183	4.183	3.575	0.263
size	27989	20.02	26.06	22.19	1.293
top1	27989	0.0890	0.729	0.348	0.148
age	27989	1.792	3.497	2.879	0.333
lev	27989	0.0550	0.849	0.401	0.199
dual	27989	0	1	0.302	0.459
soe	27989	0	1	0.319	0.466
roa	27989	-0.161	0.209	0.0500	0.0570
cashflow	27989	-0.136	0.227	0.0490	0.0650

variables in all models are significantly positive at the 1% statistical level, that is, overall, the improvement of enterprise digital transformation promotes the enhancement of enterprise value, and there is a significant positive correlation between enterprise digital transformation and enterprise value. Therefore, Hypothesis 1 in the previous text is proved.

3.3 Robustness Tests

To further verify the robustness of the research results in this paper, first, in order to prevent potential endogeneity problems caused by the introduction of contemporaneous control variables and possible causal inversion problems, this paper lagged the core explanatory variable and all control variables by one period respectively. From the estimated results in columns (1) and (2), it can be seen that even considering the lag problem, enterprise digital transformation is still significantly positively correlated with enterprise value, which is consistent with the benchmark main regression.

In addition, although this paper has controlled for time fixed effects and industry fixed effects in the benchmark model, with

the passage of time, the internal system structure of industries, the internal management architecture of enterprises, and the external survival environment are constantly changing, resulting in obvious differences in the time-series development of various industries. These differences also affect enterprise value. To minimize the impact of this factor on the conclusions of this paper, this paper adds cross-fixed effects of industry multiplied by year in the benchmark model to control the changes of various industries over time. The robustness test considering industry change trends is shown in the third column of the following table. Similarly, all results are highly consistent with the previous conclusions: the estimated coefficients of the core explanatory variables are all significantly positive. Therefore, industry change trends do not affect the core conclusions of this paper.

3.4 Heterogeneity Analysis

3.4.1 Heterogeneity in Enterprise Size. First, the differences between large enterprises and small enterprises are examined. Column (1) in Table 5 is the regression analysis of the sub-sample of

Table 3: Results of Stepwise Benchmark Regression

Variable	(1) TobinQ	(2) TobinQ	(3) TobinQ
lnDT	0.6289*** (0.0250)	0.5844*** (0.0242)	0.4388*** (0.0268)
size	-0.2638*** (0.0066)	-0.2772*** (0.0063)	-0.2619*** (0.0065)
top1	-0.3518*** (0.0460)	-0.3328*** (0.0439)	-0.2536*** (0.0440)
age	0.1752*** (0.0201)	0.0920*** (0.0211)	0.1052*** (0.0213)
lev	-0.3500*** (0.0434)	-0.2682*** (0.0417)	-0.2109*** (0.0430)
dual	0.0096 (0.0147)	0.0043 (0.0141)	0.0002 (0.0140)
soe	0.0519*** (0.0160)	0.0778*** (0.0156)	0.1080*** (0.0159)
roa	3.7459*** (0.1362)	4.0182*** (0.1310)	3.9558*** (0.1311)
cashflow	1.6243*** (0.1088)	1.4467*** (0.1050)	1.4049*** (0.1059)
Constant	5.0237*** (0.1574)	5.6701*** (0.1600)	5.7606*** (0.1626)
Observations	27,989	27,989	27,989
Adj-R2	0.1796	0.2540	0.2672
year FE	NO	YES	YES
ind FE	NO	NO	YES

Note: ***, **, * indicate significance at the 1%, 5%, and 10% statistical levels respectively, the same below.

large enterprises, and column (2) is the regression analysis of the sub-sample of small enterprises. From the results, it can be seen that although the coefficients of the core explanatory variable, the enterprise digital transformation index, are significantly positive at the 1% level, the coefficient for small enterprises is larger, averaging 1.91 times that of large enterprises. Therefore, compared with large enterprises, the impact of enterprise digital transformation on enterprise value is more obvious in small enterprises.

3.4.2 Heterogeneity in Enterprise Nature. Companies with different property right attribute characteristics may have different digital transformation behaviors in the wave of the digital economy, thus asymmetrically affecting their risk regulation behaviors. Based on the above considerations, this paper examines from the perspective of differences in enterprise attribute characteristics. Column (3) is for state-owned enterprises, and column (4) is for non-state-owned enterprises. Based on the results in Table 5, the coefficients of the core explanatory variable, the enterprise digital transformation index, are significantly positive at the 1% level, but the coefficient for non-state-owned enterprises is larger. This means that enterprise digital transformation can promote the value enhancement of both state-owned enterprises and non-state-owned enterprises, but the impact is more obvious in non-state-owned enterprises.

3.5 Mechanism Analysis

Why can enterprise digital transformation effectively enhance enterprise value? Through what transmission pathways is the significant positive impact of enterprise digital transformation on enterprise value formed? This paper will conduct further analysis from the following two paths.

Firstly, as known from the previous theoretical analysis and research Hypothesis 2, enterprise digital transformation helps to reduce inefficient investment, and inefficient investment has a negative impact on the value of an enterprise. Inefficient investment refers to unnecessary or excessive investments made by an enterprise. Such investments cannot improve the enterprise's productivity or operating efficiency, but instead lead to a waste of enterprise resources and a reduction in the enterprise's profitability and value. Conversely, effective investment refers to an investment that can bring positive economic benefits to the enterprise in the short or long term, improve the enterprise's productivity, market share, and market value. Effective investment can increase enterprise revenue and market share, improve economic efficiency, and ultimately enhance market value.

Table 4: Summary of Robustness Test Results

Variables	(1) TobinQ	(2) TobinQ	(3) TobinQ
L.lnDT	0.3985*** (0.0295)	0.3426*** (0.0301)	
lnDT			0.4346*** (0.0267)
L.size		-0.2876*** (0.0073)	
L.top1		-0.0516 (0.0492)	
L.age		0.0244 (0.0237)	
L.lev		-0.3696*** (0.0483)	
L.dual		0.0349** (0.0158)	
L.soe		0.0935*** (0.0177)	
L.roa		3.4360*** (0.1508)	
L.cashflow		1.6947*** (0.1186)	
Constant	6.9305*** (0.1803)	6.9436*** (0.1843)	5.7372*** (0.1619)
Observations	24,384	23,983	27,981
Adj-R2	0.2966	0.2811	0.2781
year FE	YES	YES	YES
ind FE	YES	YES	YES
Year FE* Ind FE	NO	NO	YES

Table 5: Summary of Heterogeneity Test Results

Variables	(1)	(2)	(3)	(4)
	Large enterprises	Small enterprises	State-owned enterprises	Non-state-owned enterprises
	TobinQ	TobinQ	TobinQ	TobinQ
lnDT	0.2904*** (0.0331)	0.5559*** (0.0403)	0.3326*** (0.0424)	0.4790*** (0.0337)
Constant	3.9580*** (0.2365)	12.1110*** (0.4104)	7.0333*** (0.2441)	5.4271*** (0.2171)
Observations	13,943	14,046	8,942	19,047
Adj-R2	0.3176	0.2715	0.3506	0.2319
Year FE	YES	YES	YES	YES
Ind FE	YES	YES	YES	YES

Regarding the measurement of inefficient investment AbsINV, referring to the research idea of Richardson et al. (2006), a measurement model is established as follows:

$$\begin{aligned}
 Invest_{i,t} = & \delta_0 + \delta_1 Grouth_{i,t-1} + \delta_2 Lev_{i,t-1} + \delta_3 Cash_{i,t-1} + \delta_4 Age_{i,t-1} \\
 & + \delta_5 Size_{i,t-1} + \delta_6 Ret_{i,t-1} + \delta_7 Invest_{i,t-1} \\
 & + \sum Industry + \sum year + \varepsilon_{i,t}
 \end{aligned} \tag{6}$$

The absolute value of the model-estimated residual AbsINV is the degree of the company's inefficient investment. Column (1) in Table 6 examines the relationship between enterprise digital transformation and inefficient investment. From the regression results, it can be seen that digital transformation and the degree of inefficient investment are significantly negatively correlated at the

Table 6: Summary of Mechanism Analysis Results

Variables	(1) AbsINV	(2) opinion
lnDT	-0.0076*** (0.0016)	0.0199*** (0.0033)
Constant	0.1023*** (0.0098)	0.8053*** (0.0202)
Observations	23,110	27,989
Adj- R2	0.0500	0.0315
year FE	YES	YES
ind FE	YES	YES

1% level. This indicates that accelerating enterprise digital transformation can effectively reduce inefficient investment behavior, thereby reducing its damage to enterprise value and promoting the positive driving of enterprise value. This finding is completely consistent with the theoretical Hypothesis 2 proposed in this paper.

Secondly, enterprise digital transformation can affect audit opinions, which are the review conclusions of auditors on the authenticity and compliance of enterprise financial statements. Firstly, a positive audit opinion helps to increase the credibility of enterprise financial information, improve the creditor's trust in the enterprise's debt-paying ability, thereby the financing cost is significantly reduced. In addition, the auditor's audit opinion can also help the enterprise to discover financial risks and problems existing in the operation and take timely measures to solve them, reducing the enterprise's operating and financial risks and ultimately increasing the enterprise's value. Column (2) in Table 6 examines the relationship between enterprise digital transformation and audit opinions. From the regression results, it can be seen that the core explanatory variable is significantly positive at the 1% statistical level, indicating that enterprise digital transformation has a significant positive impact on audit opinions and thereby promotes the enhancement of enterprise value, thus verifying the theoretical Hypothesis 2 of this paper.

4 Conclusions and Policy Recommendations

This paper uses the data of A-share listed companies in Shanghai and Shenzhen from 2013 to 2023 and uses a two-way fixed effects model for empirical research. It concludes that there is a positive correlation between enterprise digital transformation and enterprise value.

Therefore, this paper puts forward the following suggestions on promoting enterprise digital transformation from the perspectives of the government, investors, and enterprises: (1) From the government level, relevant policies to promote digital transformation should be established, including tax policies and cultivating talents in the digital technology field. At the same time, it is necessary to strengthen the supervision and guidance of digital transformation, prevent risks and challenges in the process of digital transformation. (2) From the investor level, investors need to pay attention to the risks and opportunities of digital transformation, understand the development trend and prospects of digital transformation, and

formulate corresponding investment strategies. (3) From the enterprise level, first of all, a clear digital transformation strategy needs to be formulated to ensure the smooth progress of the transformation process. It is also necessary to invest in and improve digital infrastructure, including networks, software, hardware, and data centers. At the same time, enterprises should place network security and data protection in a primary position, strengthen digital security management. Finally, digital transformation is a constantly changing and developing process. Enterprises need to maintain an attitude of continuous innovation and improvement, constantly adapt to market and technology changes.

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