#### Original Research Article

# **Research on digital transformation of small and medium cost consulting enterprises based on SWOT-PEST**

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*Abstract:* Driven by the digital economy, the traditional engineering industry is undergoing a profound change. Small and medium-sized cost consulting companies can help companies keep up with policy and market changes through digital transformation. With the help of SWOT-PEST analysis framework, this paper clarifies the advantages, disadvantages, opportunities and threats brought by the internal and external environment of small and medium-sized cost consulting enterprises to digital transformation, and provides countermeasures and suggestions for the digital transformation and upgrading of small and medium-sized cost consulting enterprises from the aspects of cost control, win-win cooperation, talent training and data security management.

Keywords: Small and medium-sized cost consulting enterprises; Digital transformation; SWOT-PEST

### 1. Introduction

The development goals of the "14th Five-Year Plan" mentioned that the level of construction industrialization, digitalization, and intelligence should be greatly improved, and the foundation of standardization and digitalization should be consolidated, digital collaborative design should be promoted, and the Internet platform for the construction industry should be built. At present, China's traditional small and medium-sized cost consulting enterprises have many shortcomings, such as "insufficient capital investment and technical reserves", "difficulty in data sharing" and "low level of personnel digitalization". Small and medium-sized cost consulting enterprises have an urgent need for digital transformation.

#### 2. Overview of digital transformation

In recent years, the digital development of all walks of life has advanced by leaps and bounds. The scale of my country's digital economy will reach 39.2 trillion yuan in 2020, accounting for 38.6% of GDP. However, in Deloitte Consulting's 2019 "Digital Maturity" survey, the digital maturity of the construction industry The score is only 4.50, the lowest among the industries surveyed <sup>[1]</sup>. The key to the digital transformation of small and medium-sized cost consulting enterprises lies in the thinking upgrade and model innovation of managers. Its digital transformation is not only a digital upgrade of software technology, but also a new fulcrum for reforming the traditional construction industry.

## 3. SWOT-PEST analysis of digital transformation of cost consulting enterprises

#### **3.1. SWOT-PEST model construction**

"SWOT" analysis is a classic analytical tool for strategic planning and competitive intelligence. The content includes Strengths, Weaknesses, Opportunities and Threats, and focuses mainly on the internal conditions of the organization. "PEST" analysis contents include Political, Economic, Social and Technological, mainly focusing on external macro-environmental factors. Small and medium-sized cost consulting enterprises comprehensively collect internal and external environmental information through SWOT-PEST analysis, identify advantages, disadvantages, opportunities and threats, and formulate corresponding strategic countermeasures according to the analysis results. Its specific matrix model is shown in **Table 1**.

	Р	E	S	Т
S	Policy encouragement, industry actively promotes digitalization	Digitalization empowers refined management of cost consulting enterprises	Technological advances reduce transformation costs	Digital technology is popularized, and the threshold for transformation is low
W	Limited financial and technical strength	Market competition is fierce, and digital budgets may be compressed	Lack of compound talents and high personnel mobility	Database construction is time- consuming and system stability is unknown
0	An intelligent construction industry system integrating industrial chains	Engineering cost consulting revenue continues to grow, and the market is broad	Digital tools can enhance customer interaction	Learn from the digital transformation experience of large enterprises
Т	International engineering consulting enterprises enter the domestic market	Technology update iterations may struggle to keep up with developments	Digital platforms have security risks	Technology updates and iterations are fast, and corporate planning awareness is not strong

 Table 1. SWOT-PEST matrix of digital transformation of small and medium-sized cost consulting enterprises.

#### 3.2. SWOT-PEST model analysis

#### 3.2.1. Advantages of digital transformation for small and medium-sized cost consulting companies

(1) Policy encouragement, industry actively promotes digitalization

The "14th Five-Year Plan for Digital Economy Development" clearly proposes to promote the healthy development of the digital economy, strengthen the construction of digital infrastructure, and improve the digital economy governance system. In 2022, the China Price Association successively issued the "BIM Application Guide for Engineering Cost Consulting" and "Guide for the Classification and Preparation of Engineering Cost Index"<sup>[2]</sup>, which will help promote the digital development of the industry, accelerate the sharing of project cost data indicators, and contribute to engineering cost consulting companies' participation in digital transformation. The enthusiasm plays an important role in promoting.

(2) Digitalization empowers refined management of cost consulting companies

Under the background of the integration of marketization and digitalization, the key to the digital transformation of small and medium-sized cost consulting enterprises lies in using market-oriented data to achieve refined upgrades of cost management <sup>[3]</sup>. At present, most of the technical systems of digital transformation of cost consulting enterprises take BIM technology as the starting point, and use BIM technology to build databases for construction projects while completing 3D modeling. According to the characteristics of updating, sharing and intuition of database information at any time, it can ensure the smooth development of refined management of project cost.

(3) Technological progress reduces transformation costs

Traditional data analysis requires enterprises to invest a lot of manpower and time costs, but current big data and AI technologies have enabled automated tools to quickly process massive data and provide accurate analysis results. When choosing modularization and customization of digital tools, you can choose specific functional modules according to your own needs, avoiding the high cost of purchasing a complete system. (4) Popularization of digital technology and low threshold for transformation

Digital technologies such as BIM, cloud computing, big data, Internet of Things and artificial intelligence help complete project modeling and calculation by providing data storage, online collaboration, data processing and analysis. After completion, the data will be uploaded to the digital platform synchronously to achieve online collaboration, improve data processing capabilities, and enhance the efficiency and quality of the work of enterprise cost personnel.

#### 3.2.2. Disadvantages of digital transformation of small and medium-sized cost consulting companies

(1) Limited financial and technical strength

The digital transformation of cost consulting companies requires continuous expansion of software and hardware equipment and supporting advanced digital technologies. The initial investment cost is high and the return on investment cycle is long, resulting in small and medium-sized enterprises facing financial pressure in the short term. Due to the limitation of capital and technology, small and medium-sized cost consulting enterprises can only adopt outsourcing mode in the design and provision of digital systems.

(2) The market competition is fierce, and the digital budget may be compressed

In July 2021, the qualifications of engineering cost consulting companies were cancelled, the cost consulting market entry threshold was lowered, the number of companies increased, and small and medium-sized enterprises occupied the main market share. With the intensification of market competition, customers' bargaining power when choosing cost consulting services has increased. Most small and medium-sized enterprises often lower their quotations in order to win orders, which leads to a lower priority of digital transformation. Budgets may be compressed.

(3) Lack of compound talents and high personnel mobility

As a knowledge-intensive and labor-intensive enterprise, engineering cost consulting enterprises need a large number of professionals to engage in project consulting, project evaluation, on-site follow-up audit and settlement audit. Most small and medium-sized cost consulting enterprises are private enterprises, but at present, engineering talents in the market are more inclined to work in central enterprises and local state-owned enterprises. Small and medium-sized enterprises are at a relative disadvantage in attracting talents and have low employee loyalty.

(4) Database construction is time-consuming and system stability is unknown

Under the background of market-oriented reform, the construction framework of enterprise-level database and index of engineering cost is still in the initial construction stage. It needs to be continuously and dynamically input after standardization of historical cost business project data of enterprises. It takes a lot of man-hours to enter many engineering data of completed projects into the system, and the stability and applicability of the engineering cost index system, which is used as the data basis for data indicators and applications, need to be verified<sup>[4]</sup>.

#### 3.2.3. Opportunities for digital transformation of small and medium-sized cost consulting companies

(1) An intelligent construction industry system integrating the entire industry chain

Jianshi [2020] No. 60 document proposes to promote the integration of the entire industrial chain of engineering construction through digital and intelligent upgrading. At present, cost consulting companies have entered the period of full life cycle engineering consulting and need to provide full-process services from project planning to operation. The whole industry chain integration system emphasizes cross-field and cross-industry

collaborative innovation, which means that cost consulting companies and other companies in the industry chain must Carry out closer cooperation, which provides direction guidance for the digital transformation of enterprises.

(2) The engineering cost consulting business market is vast

According to data from the Ministry of Housing and Urban-Rural Development, by the end of 2023, the total operating income of enterprises will be 1.445 billion yuan, of which cost consulting business income will be 112.192 billion yuan, and engineering cost consulting revenue will continue to grow. By using digital cost methods such as "digital platform + whole process", engineering cost consulting enterprises can ensure reasonable estimates and budget estimates in the budget stage, strengthen cost supervision and cost control capabilities in the implementation stage, and improve the market competitiveness of enterprises.

(3) Digital tools can enhance customer interaction

Cost consulting enterprises use digital tools to strengthen the automation and intelligence of customer relationship management and improve the interaction efficiency and effect in the whole process of engineering cost business, such as CRM system. Through digital tools, enterprises can better manage and maintain customer relationships, provide timely customer service feedback, and improve customer satisfaction and loyalty.

(4) We can learn from the digital transformation experience of large enterprises

Large construction companies usually adopt advanced technologies such as BIM, cloud computing, big data, etc. in digital transformation. In terms of transformation paths, such as technological innovation, business process optimization, and industry-finance integration, they can provide technology for the digital transformation of small and medium-sized consulting companies. Reference and innovation-driven external conditions.

#### 3.2.4. Challenges of digital transformation of small and medium-sized cost consulting enterprises

(1) International engineering consulting companies enter the domestic market

The national "the belt and road initiative" policy promotes more Chinese enterprises to go abroad, and at the same time brings more international consulting enterprises into the domestic market. With their advanced technology and management experience, well-known foreign engineering consulting companies will bring severe challenges to domestic small and medium-sized consulting enterprises.

(2) Technology update iterations may be difficult to keep up with developments

With their capital and technological advantages, large enterprises can quickly follow up on technological updates and maintain their leading position in technology, while small and medium-sized enterprises may not be able to meet the latest needs of customers because they are difficult to keep up with technological development, which makes small and medium-sized cost consulting enterprises in technological updates in a passive position.

(3) Digital platforms have security risks

The construction of enterprise digital technology platform, distributed data storage, multi-channel circulation and multi-service sharing not only bring convenience to enterprises, but also increase the ways of data leakage<sup>[5]</sup>. In the process of digital development of cost consulting enterprises, with the rapid increase in the amount of online data, security risks such as data leakage, data tampering, and privacy protection have become increasingly prominent.

(4) Technology updates and iterations are fast, and corporate planning awareness is not strong

The rapid iteration of digital technology requires enterprises to make continuous capital investment and equipment updates, which puts forward higher requirements on the financial status and decision-making ability

of enterprises. Many small and medium-sized enterprises pay too much attention to short-term financial interests, which leads to the inability to quickly adjust and revise their strategies and lack the awareness of comprehensive strategic layout.

# 4. Countermeasures for digital transformation of small and medium-sized cost consulting industry

#### 4.1. Cost control and strategic layout (ST Countermeasures)

Small and medium-sized cost consulting enterprises should not limit their own development to short-term financial income, and their strategic layout should be overall. They should formulate plans that are consistent with long-term development goals, continuously optimize business management models and business strategies, and enhance their competitiveness in the industry. competitiveness and increase market share. In the process of digital transformation, we should pay attention to cost control and choose cost-effective digital tools and solutions.

#### 4.2. Pay attention to word-of-mouth and business development (SO countermeasures)

In the early stages of digital transformation, small and medium-sized cost consulting companies should contract more refined business than too much. By doing a good job in refined management of project cost, accurate cost calculation and calculation, we can enhance customer service experience and improve customer satisfaction, and build a good corporate reputation steadily. With the help of digital technologies such as cloud computing, big data and artificial intelligence, enterprises can realize real-time communication and feedback between enterprises and customers on on-site conditions such as business progress and work quality, and improve the work efficiency and service quality of engineering consulting.

#### 4.3. Talent cultivation and skill improvement (WO countermeasures)

Consulting enterprises should establish clear performance management processes and evaluation methods, pay attention to employees' personal growth, provide employees with clear career goals and development paths, create a good corporate culture, and formulate reasonable salary packages, so as to attract and retain high-quality professionals and form a talent team with high loyalty, excellence and competitiveness.

#### 4.4. Improve the construction of enterprise database (WT countermeasures)

In the process of building databases, small and medium-sized enterprises should learn and be good at using digital technology, set demand parameters for preliminary screening of data, and delete similar and invalid engineering cost project data. Enterprises need to get out of the misunderstanding that the construction of project cost database is to upload project pricing basis, quota, material price information and result documents to digital platforms, accumulate effective data, and use intelligent classification and clustering of mechanical learning to replace manual analysis and reduce manual workload.

#### 5. Conclusion

The digital transformation of small and medium-sized cost consulting enterprises is a necessary measure to adapt to the development of the times, and it is also a key step to enhance the competitiveness of enterprises. In the future, small and medium-sized cost consulting companies should actively embrace digital technology, pay attention to industry policies, take advantage of the situation, plan their layout from a development perspective, adopt flexible and pragmatic strategies, strengthen talent training, improve service quality and competitiveness,

reduce transformation costs and risks, and gradually achieve the goal of digital transformation.

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