Research on Development Strategy of "Internet + Ship Steel Trade Logistics" Based on IAHP-SWOT

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Abstract: In order to China State Shipbuilding Corporation "Internet + ship steel trade logistics" development strategy to provide theoretical basis for better play to the enterprise in the industry's demonstration leading role, using IAHP-SWOT analysis method, combining the China State Shipbuilding Corporation "Internet + ship steel trade logistics" the status of the strengths, weaknesses, opportunities and threats analysis to determine the development strategy of China State Shipbuilding Corporation mode. The results show that the company should adopt ST development strategy, that is, relying on internal advantages, avoiding external threats, and providing an objective and effective research idea and solution for the strategic decision-making problems faced by the development of "Internet + shipping steel trade logistics" of China State Shipbuilding Corporation.

1. Introduction

In July 2016, Premier Li Keqiang emphasized at the State Council Standing Committee meeting said that “promoting Internet + logistics is not only developing a new economy, but also enhancing the traditional economy”. The “Internet + Steel Trade” represented by steel and electricity companies has also developed rapidly[1]. With the recovery of China's shipbuilding industry, how to use relevant analysis tools for analysis, explore the use of the Internet, big data, artificial intelligence and other new generation information technology to improve the efficiency of ship steel trade logistics business, for steel companies, ship companies and steel traders are a huge challenge. China State Shipbuilding Corporation (hereinafter referred to as CSSC) is a large-scale enterprise group that it is directly managed by the central government. It is a state-authorized investment institution and one of China's top ten military industrial groups. It has a relatively complete set. Information platform such as mining platform and ERP system. At the same time, the group company has strong strength and abundant capital, which has innate advantages for the development of “Internet + ship steel trade logistics”[2].

The meaning of "Internet + ship steel trade logistics" is not yet defined. The definition given by CSSC is that the abbreviation of "Internet + ship steel trade + logistics" is based on the online ship smart supply chain platform. The core is based on the ship steel trade business line and the offline modern logistics service system, forming a ship intelligent supply chain system integrating online and offline multi-channel[3]. Build a supply chain solution integrating products, trading, warehousing, processing, distribution, finance and other services for upstream and downstream customers in the steel and shipping industries to build iron and steel enterprises and ships

2. The Research Methods

The SWOT-IAHP method combines the SWOT analysis method with the IAHP method to systematically evaluate the priority of each element in the decision-making process, thereby enhances the ability of the SWOT analysis method in strategic decision-making. Specific steps is on the basis of SWOT qualitative analysis to find out the factors affecting the strengths, weaknesses,

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opportunities and threats of the enterprise. The advantage of SWOT factors is calculated by expert scoring method,and the weight of SWOT factors is determined by IAHP.The advantage of IAHP method is to improve the accuracy of evaluation results through interval based algorithm, making the results more accurate. The overall dynamics of S, W, O and T were obtained respectively. Construct the strategic quadrilateral with the total strength(S), the total weakness(W), the total opportunity(O) and the total threat(T), determine the strategic center of gravity, conduct strategic positioning according to the quadrant where the center of gravity is, and finally determine the strategic type[4].See the table 1.

Table 1 SWOT strategic analysis matrix

	Strength(S)	Weakness(W)
Opportunity(O)	S-O strategy：Rely on internal strengths and take advantage of external opportunities	W-O strategy：Take advantage of external opportunities to overcome internal weaknesses
Threat(T)	S-T strategy：Rely on internal advantages and avoid external threats	W-T strategy：Reduce internal weaknesses and avoid external threats

Table 2 is constructed according to the strengths, weaknesses, opportunities and threats of "Internet + shipping steel trade logistics" developed by CSSC.

Table 2 hierarchical structure of "Internet + shipping steel trade logistics" development strategy of CSSC

Target layer	Criteria layer	Indicator layer
Development Status of "Internet + Ship Steel Trade Logistics" by CSSC	Strength(S)	S1: The CSSC is strong.
		S2: The group company's centralized procurement business progressed steadily.
		S3: The group company has a basic information platform.
		S4: The shipbuilding steel yard and pre-processing cutting facilities are complete.
	Weakness(W)	W1: CSSC's information platform system and the cooperative enterprise platform system need to be integrated, and the shipbuilding enterprise internal ERP system has not been opened[6]..
		W2: The company's business development is not comprehensive, and its business scope is narrow.
		W3: The number of technical personnel of the group company is insufficient, and the lack of high-quality leading talents[7].
		W4: Innovative research and development capabilities need to be improved.
	Opportunity(O)	O1: National policy support.
		O2: Great market development potential.
		O3: The shipbuilding industry, logistics industry, steel trade and other related industries are developing well.
		O4: The rapid development of the industrial Internet.
	Threat(T)	T1: The standardization requirements of shipbuilding enterprises are getting higher and higher, which brings challenges to steel trade logistics.
		T2: There is no benchmarking company to learn from.
		T3: Lack of supporting regulations for "Internet + ship steel trade logistics"[8].
		T4: Intense industry competition.

3. Using IAHP to determine the Development Strategy of "Internet + Ship Steel Trade Logistics" of CSSC

Firstly, we construct a pairwise comparison interval judgment matrix. Secondly, we need matrix consistency test. Thirdly, after determining the key factors affect the development of “Internet + Ship Steel Trade Logistics” by CSSC, the next step is to judge the relative importance of each factor. We use the scale of 1 to 9 in IAHP[9], invite industry experts and business leaders to compare the elements in the SWOT group, and then compare the four SWOT groups in pairs .Lastly, overall ranking of development strategies. See the table 3.

Table 3 Total Ranking of development strategy levels of “Internet + Ship Steel Trade Logistics”

	S	W	O	T	Total ranking of comprehensive weights	Sort
	0.3011	0.2723	0.1130	0.2721		
S1	0.6179				0.1860	1
S2	0.1637				0.0493	7
S3	0.1392				0.0419	8
S4	0.0750				0.0226	12
W1		0.2292			0.0624	6
W2		0.4123			0.1123	3
W3		0.0798			0.0217	13
W4		0.0493			0.0134	15
O1			0.5849		0.0661	4
O2			0.2872		0.0325	9
O3			0.1208		0.0137	14
T1				0.5190	0.1412	2
T2				0.2295	0.0625	5
T3				0.1233	0.0335	10
T4				0.0845	0.0230	11

4. Development Strategy Positioning

Calculating the average vector of SWOT's overall strength from the total advantage, total disadvantage, total opportunity and total threat intensity in the overall ranking of development strategy levels[10].

$$S = \sum_{i=1}^{4} \frac{S_i}{4} = 0.1692\,, W = \sum_{j=1}^{4} \frac{W_j}{4} = 0.0525\,, O = \sum_{m=1}^{4} \frac{O_m}{4} = 0.0374\,, T = \sum_{n=1}^{4} \frac{T_n}{4} = 0.0651 \qquad (1)$$

CSSC’s "Internet + Ship Steel Trade Logistics" overall development strategy is the result of a combination of advantages, disadvantages, opportunities and threats, so the advantages, disadvantages, opportunities and threats of the four variables as a semi-axis, on the axis Point S'.W'.O'.T' representing the overall strength, overall disadvantage, overall opportunity and overall threat level, and calculated from the average of the total ranking weights of each variable level is S’(0.1692,0),O’(0,0.0374),W’(-0.0525,0),T’(0,-0.0651).

Center of gravity coordinates

$$P(X, Y) = \left(\sum_{i=1}^{4} X_i \frac{1}{4}, \sum_{j=1}^{4} y_j \frac{1}{4}\right) = (0.0292, -0.0069). \qquad (2)$$

As can be seen from Figure 1, the center of gravity P is located in the fourth quadrant, in the ST strategy (diversity business strategy) area[11].See the fig.1.

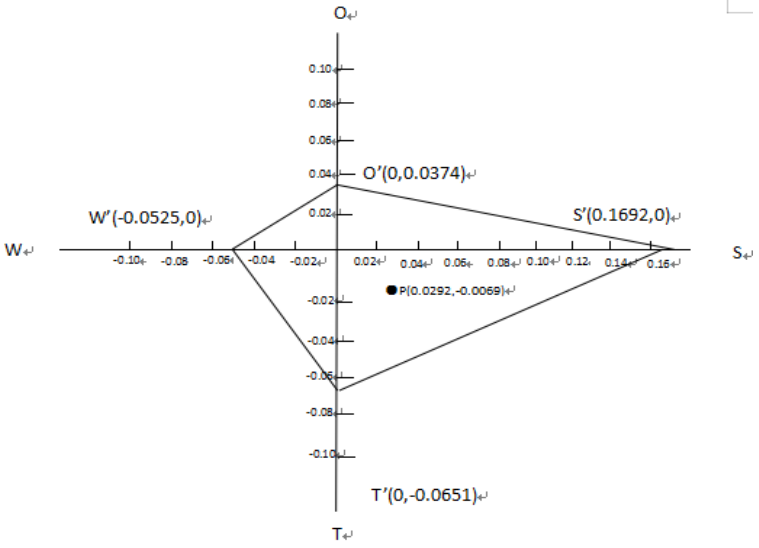

Fig. 1 CSSC's "Internet + Ship Steel Trade Logistics" development strategy quadrilateral

5. Summary

Through the quantitative evaluation of SWOT-IAHP of CSSC's "Internet + Ship Steel Trade Logistics" business strategy, it is found that the center of gravity P is in the fourth quadrant. Therefore, CSSC should give priority to its own advantages and avoid the external threat of ST development Strategy, but also can not ignore the SO strategy of using its own advantages and external opportunities. Therefore, the development of "Internet + steel trade logistics" in CSSC can take the following safeguards:

Firstly, CSSC can actively use the information platform currently operated by the company to provide a basis for the development of “Internet + Steel Trade Logistics”[12]. The construction of the functional system of “Internet + Steel Trade Logistics” requires different functional modules, such as centralized procurement module, processing and distribution module, financial module, steel trade module, etc. At the same time, the centralized procurement business of the enterprise is steadily advancing, and the overall information platform is Well, it can be used as part of the “Internet + Steel Trade Logistics” functional system to provide operational experience for project development, saving costs and shortening project cycles.

Secondly, CSSC can make full use of national policies to promote the development of "Internet plus shipping steel trade logistics". From the investigation results of the external opportunities of "Internet + steel trade logistics", it can be seen that the government is the leading party that can really affect its survival and development environment. Through the introduction of relevant policies and the implementation of tax incentives, the government has promoted the combination of shipping industry, steel trade and logistics industry and the Internet industry. Enterprises should seize the opportunity, make full use of the country and the government financial support and tax policy, carefully read policy action principles, tasks, the general steps and concrete measures to use policy to guarantee the entire group and the subordinate enterprise unified understanding, the overall deployment, uniform standard, unified action, make "Internet + steel trade logistics" development into effect.

Thirdly, establish a strong talent guarantee system to improve the shortage of high-quality talents. First of all, we should attach great importance to the construction of senior specialized personnel, and strengthen the investment in the introduction, training and encouragement of senior specialized personnel[13]. Then, it doesn’t accelerate the pace of talent introduction firmly establish the concept of senior specialized talents at all, but use according to the development strategy needs to accelerate the talent introduction of spot and futures trade, finance, logistics, e-commerce, information technology and information services, project operation, the whole scheme construction and

management. Finally, strengthen internal talent training and development, carry out targeted personnel training and training, establish a multi-level talent training system and a scientific human resource development and utilization system, enhance employees' knowledge reserves and professional capabilities, and provide a talent team for the company's sustainable development.

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