Determination of Strategic Factors for the Development of Huizhou Logistics Industry

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Abstract

Huizhou logistics industry is developing rapidly, yet the overall level of development is relatively low. In order to solve the development problems and bottlenecks of the logistics industry, this paper adopts the storm brain method by a group of logistics experts to organize the democratic discussion, combines PEST and the Balanced Scorecard to measure the development factors of Huizhou logistics industry, analyzes and pairs with SWOT matrix, and then draws relevant strategic measures. The strategies are then streamlined by SMART and given as follows: Improve the logistics industry structure of Huizhou, including optimization of various transportation modes, and introduction of information technology; construct a fast transit logistics network between major cities in Guangdong, Hong Kong and Macao; improve the service quality of the logistics industry as a whole and increase the income level; establish a better customer evaluation system, and honor the logistics enterprises offering high customer satisfaction; improve the logistics personnel training system and formulate localization and international talent training measures; open up the logistics market, optimize the structure, let more logistics enterprises go overseas for the international market; rely on the opportunity of Guangdong-Hong Kong-Macao Greater Bay Area to open up the international market.

Keywords

Huizhou Logistics Industry, Development Strategy, PEST Analysis, Balanced Scorecard, SWOT Analysis.

1. Introduction

In recent years, Huizhou has taken advantages of the strong economic pull of "big industries, big projects, big traffic, big tourism"[1] to vigorously develop the local logistics industry. As a result, the economic strength, as well as the logistics demand, is growing and booming. However, Huizhou logistics industry is still in its early stage and the overall development level is relatively low. There are still some outstanding contradictions and problems to be solved. This paper seeks to scientifically analyze and measure the internal and external development factors of Huizhou logistics industry, and finally to achieve sustainable and healthy development.

2. Background and Significance of Research

2.1 Research Background

Since the implementation of the "Eleventh Five-Year Plan" and the "Guangdong-Hong Kong-Macao Greater Bay Area" construction plan, the modern logistics industry has become a new hot spot for Huizhou's economic development. Huizhou City makes full use of its location advantages to attract investment, expand its opening to the outside world and promote the gradual expansion of the logistics industry. The logistics supply and demand markets continue to prosper and develop, which results in a further strengthening of modern logistics concept[1]. Huizhou logistics industry system is established in the following aspects.

2.1.1 The Scale of the Logistics Industry

In 2018, the total turnover of road transportation and waterway transportation in Huizhou City was 16.224 billion ton-kilometers and 32.481 billion ton-kilometers with a year-on-year increase of 7.4%

and 2.3% respectively[2]. Cargo and container throughput of ports was 87.57 million tons and 430,000 TEU with an increase of 21.44% and 22.54% compared to 2017[3]. These data indicate the scale of the logistics industry in Huizhou is constantly expanding.

2.2.2 The Transportation Network

By the end of 2018, the total length of highways was 14,001 kilometers. The construction of Huizhou Ports also began to take shape: There are 46 production berths, including 23 deep-water ones of 10,000-ton and above with a total throughput of 103 million tons in Huizhou Port[4]. Huizhou Airport has resumed its civil aviation and developed the regional electronics industry, which offers a strong demand for aviation logistics. Also, Huizhou Airport has been built into the main regional airport and aviation of the Pearl River Delta, which is mainly used for freight and cargo transportation, military and civilian

2.2.3 Logistics Parks and Commercial Logistics Enterprises

Logistics service system in all aspects of logistics parks in Huizhou has been continuously improving. A certain scale of logistics parks emerged, such as Jinze International Logistics Park, Huizhou Agricultural Products Logistics Distribution Center, Daya Bay Taidong Logistics Park, etc. As for commercial logistics enterprises, a great number of well-known logistics companies now look at Huizhou and begin to settle in, which will expand the industry and add vitality to Huizhou's logistics industry.

2.2 Significance of Research

Though Huizhou logistics industry is developing rapidly, the overall level is relatively low.

First, Huizhou's logistics infrastructure needs to be further improved, especially Huizhou Port, which is one of the main supports of the local logistics industry. Its insufficient investment leads to a relatively slow terminal construction and a weak multimodal transport mode.

Second, Huizhou is poor in logistics resources integration and specialized logistics enterprises, resulting in a low service level and customer satisfaction. There is no effective connection between various modes of transportation. In addition, the scale of logistics enterprises is generally small, lacking leading and branded enterprises. The logistics management system has not rationalized the existence of the multi-management phenomenon, which limits the overall logistics development.

Finally, there is still room to improve Huizhou logistics informatization and talent introduction for overseas returnees. Most of the logistics companies still operate in the traditional way with a very limited intention and interests in informatization of logistics. Further, senior logistics management professionals and technicians are in short supply. There is a gap between the logistics professional education and social actual employment standards.

Facing the status quo of Huizhou logistics industry seeking for sustainable and healthy development, this paper tries to solve the above problems by obtaining its internal and external development strategic factors and propose a scientific, feasible and effective development strategies for Huizhou logistics industry. Also, this paper intends to analyze the internal factors of the logistics industry through the Balanced Scorecard (BSC), the external factors by PEST analysis, and finally integrates them with the SWOT analysis to provide a more practical and effective method.

3. Literature Review

3.1 Determination of Strategic Factors

According to Weihrich (1982), strategies are programs of action and deployment of emphasis and resources to attain comprehensive objectives[5]. Strategic factors are the elements that determine how an organization uses its resources or changes to attain these objectives.

On the surface, the strategy is determined by analyzing the current and expected future conditions and then deciding what means to achieve. In fact, determining a strategy is a very complex process that requires not only a systematic approach to identifying and analyzing external factors, but also matching the internal capabilities of a firm. The success of a company has a very close relationship

with the determination and implementation of the strategy. There are many strategic research methods, such as PIMS (Profit Impact of Marketing Strategy), Boston Matrix (BCG Matrix), McKinsey GE Matrix, Porter Five Force Model, SWOT, Balanced Scorecard, etc.[6]

The application of a single strategic research tool has certain limitations. Therefore, this paper draws on the BSQ Strategic Model proposed by Gu (2005) and integrates strategic research tools such as Balanced Scorecard, PEST and SWOT analysis. This paper adopts PEST to analyze the external conditions O (Opportunities) and T (Threats) of Huizhou logistics industry development, the Balanced Scorecard to analyze the internal conditions S (Strengths) and W (Weaknesses), and then use SWOT matrix analysis to determine Huizhou Strategic factors for the development of the logistics industry. The data of the measurement process is obtained through brainstorming by a group of experts in the field.

4. Process Analysis

4.1 External Factors Determined by PEST

First, identify opportunities and threats to the external environment.

After understanding the importance and objectives of this research, a group of experts from the local logistics industry identified *opportunities* and *threats* to the external environment of the logistics industry through internal discussions. Factors that are favorable to the development of Huizhou logistics are classified as *opportunities*. Table 1 shows the external opportunities.

Table 1 Huizhou Logistics Industry Development Opportunity Matrix

External Opportunities-O	Probability of Occurrence	Attractiveness	Opportunity Ranking
O1- Guangdong-Hong Kong-Macao Greater Bay Area Macro Environment (Political)	9.5	8.6	81.70
O2-A number of policy measures on improving the logistics industry (Political)	8.4	7.6	63.84
O3-Industry foundation providing strong market demand (Economic)	8.7	7.3	63.51
O4-The government continuing to increase the construction of logistics infrastructure (Political)	8.1	7.5	60.75
O5-Traffic conditions of economic circle of Pearl River Delta (Social)	8.2	7.1	58.22
O6- Rapid development of logistics technology and information technology (Technological)	7.1	6.8	48.28
O7-Cultivation of logistics talents in local universities (Social)	7.2	6.6	47.52
O8-Third-party logistics at an early stage of development with great potential (Economic)	7.3	6.5	47.45
O9- "One-Hour Urban Rail Transit Circle" in Bay Area (Social)	6.5	6.8	44.2

The "Probability of Occurrence" and "Attractiveness" are scored and averaged by the group of logistics experts and practitioners. The scores range from 1 to 10. The higher the score is, the higher the likelihood or attractiveness is. "Ranking" is defined as the product of " Probability of Occurrence" and "Attractiveness" and sorted from largest to smallest. Through internal discussions, the rankings below 50 are considered irrelevant to this case, so they are deleted.

Relatively apply a similar method to calculate the "Threat Ranking", and the score of "Probability of Occurrence" and "Severity Degree" range from 1 to 10. The higher the score is, the higher the probability or severity is. Through internal discussions, the "Threat Ranking" less than 50 are omitted. Table 2 shows the external *threats*.

Table 2 Huizhou Logistics Industry Development Threat Matrix

External Threats-T	Probability of Occurrence	Severity Degree	Threat Ranking
T1-The impacts of China-US Trade War Uncertainty (Political)	8.7	8.5	73.95
T2-The increasing costs of logistics (Economic)	8.5	7.4	62.90
T3-Infrastructure is relatively weak (Social)	8.2	7.2	59.04
T4-Difficult to train and retain high-end logistics management talents (Social)	8.4	6.5	54.60
T5-Lack of specialized logistics companies, low service level (Social)	7.9	6.8	53.72
T6-Intensified competition of logistics market (Economic)	6.8	6.7	45.56
T7-Incomplete law related to logistics (Political)	7.2	6.3	45.36
T8-Challenges from foreign logistics companies (Economic)	5.8	6.0	34.80

4.2 Internal Factors Determined by BSC

According to Kotler (1994), a preliminary diagnostic analysis should be carried out[7]. Through the internal discussion of the group, the internal factors influencing Huizhou logistics industry under the four perspectives (Finacial, Customer, Internal Business, Innovation and Learning) are sorted out, shown as Table 3. In this table, the factors are scored as "Degree of Importance", the internal factors of the score below 7 are deleted, and the rankings are sorted from largest to smallest.

Table 3 Important Degree of Huizhou Logistics Industry Development--Internal Factors

Ranking	Internal Factors	Degree of Importance
1	Total revenue of Huizhou logistics industry (Financial)	9.4
2	Financial investment in the logistics industry (Financial)	9.2
3	Customers' demand for logistics industry (Financial)	9.0
4	Informatization of logistics industry (Internal Business)	8.8
5	Geographical advantages (Customer)	8.7
6	Government policy strategy (Internal Business)	8.6
7	Capable industry elite people (Innovation and Learning)	8.5
8	Logistics industry integrated environment (Internal Business)	8.2
9	Logistics service quality (Customer)	8.1
10	International logistics market (Financial)	7.8
11	Customer retention rate (Customer)	7.7
12	Customer satisfaction (Customer)	7.5
13	The internal structure of the logistics industry (Internal Business)	6.8
14	Logistics industry carrying capacity (Internal Business)	6.5
15	Logistics product development (Internal Business)	6.2
16	Promotion and marketing (Customer)	6.4
17	Huizhou logistics industry reputation (Customer)	6.2

The expert group scored the "Performance Level" of internal factors, in which the scores higher than 6.7 were classified as *strengths* (S1, S2, and etc.) and lower than 6.7 as *weaknesses* (W1, W2, and etc.) The "Performance Gap" is the difference between " Degree of Importance" and "Performance Level". The greater the "Performance Gap" is, the more urgent the internal factors need to be improved.

Table 4 Internal Advantages and Disadvantages of Huizhou Logistics Industry Development

Ranking	Internal Factors	Degree of Importance	Performance Level	Performance Gap	Factor Classification
1	Government policy strategies (Internal Business)	8.6	8.0	0.6	S1
2	Logistics industry integrated environment (Internal Business)	8.2	7.4	0.8	S2
3	Financial investment in the logistics industry (Financial)	9.2	7.2	2	S3
4	Informatization of logistics industry (Internal Business)	8.8	7.0	1.8	S4
5	Geographical advantages (Customer)	8.7	6.9	1.8	S5
6	Customers' demand for logistics industry (Financial)	9	6.8	2.2	S6
7	Total revenue of Huizhou logistics industry (Financial)	9.4	6.6	2.8	W1
8	Logistics service quality (Customer)	8.1	5.8	2.3	W2
9	Customer retention rate (Customer)	7.7	5.2	2.5	W3
10	Customer satisfaction (Customer)	7.5	5.2	2.3	W4
11	Capable industry elite people (Innovation and Learning)	8.5	4.8	3.7	W5
12	International logistics market (Financial)	7.8	4.7	3.1	W6

5. Analysis of Results

The external factors of the PEST analysis and the internal environment of the Balanced Scorecard are combined into the SWOT matrix, and the internal factors are matched one-to-one with the external factors. The four combinations of the matching combinations are listed in Table 5.

Table 5 Analysis of the SWOT Matrix of Huizhou Logistics Industry

SWOT Analysis of Huizhou Logistics Industry	Strengths S1-Government policy strategies (Internal Business) S2-Logistics industry integrated environment (Internal Business) S3-Financial investment in the logistics industry (Financial) S4-Informatization of logistics industry (Internal Business) S5-Geographical advantages (Customer)	Weaknesses W1-Total revenue of Huizhou logistics industry (Financial) W2-Logistics service quality (Customer) W3-Customer retention rate (Customer) W4-Customer satisfaction (Customer)

	S6-Customers' demand for logistics industry (Financial)	W5-Capable industry elite people (Innovation and Learning) W6-International logistics market (Financial)
Opportunities O1- Guangdong-Hong Kong-Macao Greater Bay Area Macro Environment (Political) O2-A number of policy measures on improving the logistics industry (Political) O3-Industry foundation providing strong market demand (Economic) O4-The government continuing to increase the construction of logistics infrastructure (Political) O5-Traffic conditions of the economic circle of Pearl River Delta (Social)	(SO) S1O1O2O4: Utilize the strong policy supports of the country to develop the Huizhou logistics industry S3S5S6O3O5: Utilize Huizhou's unique geographical advantages combined with financial investment to develop new customers	(WO) W1-4O1-5: Improve the overall logistics revenue and customer service quality with a strong macro environment W5W6O1O2O4: The development of Guangdong-Hong Kong-Macao Greater Bay Area attracts capable talents and develops international logistics market
Threats T1-The impacts of China-US Trade War Uncertainty (Political) T2-The increasing costs of logistics (Economic) T3-Infrastructure is relatively weak (Social) T4-Difficult to train and retain high-end logistics management talents (Social) T5-Lack of specialized logistics companies, low service level (Social)	(ST) S1-5T2T3: Leverage Guangdong-Hong Kong-Macao Greater Bay Area to build infrastructure and reduce logistics costs S1-3S6T4T5: Improve the salary of logistics-related staff and retain high-end talents	(WT) W5T4T5: Continuously invest in the training of logistics professionals and introduce elite professionals W1W6T2T3: Open up capital investment in the logistics industry, develop infrastructure and international market. W2-4T2T3: Continuously improve customer satisfaction and retention rate, improve logistics service quality

6. Conclusion

From Table 5, the strategic initiatives that Huizhou logistics industry could implement are given, and a meaningful strategic goal must be in line with SMART guidelines, that is, to be "Specific, Measurable, Attainable, Result-oriented and Time-bound[8]". After the revision of the above strategic initiatives through the SMART guidelines, more precise strategic initiatives are obtained, as shown in Table 6.

Table 6 Huizhou Logistics Industry Development Strategy Table

Strategic initiatives identified by the SWOT matrix	SMART Purposes
S1O1O2O4: Utilize the strong policy supports of the country to develop the Huizhou logistics industry	Within 5 years, Improve the logistics industry structure of Huizhou, including optimization of various transportation modes, and introduction of information technology
S35S6O3O5: Utilizing Huizhou's unique geographical advantages combined with financial investment to develop new customers	In 3 years, attract customers from the Pearl River Delta
	Within 5 years, rely on the opportunity of Guangdong-Hong Kong-Macao Greater Bay Area to open up the international market.

W1-4O1-5: Improve the overall logistics revenue and customer service quality with a strong macro environment	Within 5 years, improve the service quality of the logistics industry as a whole and increase the income level
W5W6O1O2O4: The development of Guangdong-Hong Kong-Macao Greater Bay Area attracts capable talents and develops international logistics market	Every year, increase investment in education for local colleges and universities and attract foreign talents to benefit employment.
	Every year, open special logistics talent recruitment fairs
S1-5T2T3: Leverage Guangdong-Hong Kong-Macao Greater Bay Area to build infrastructure and reduce logistics costs	In 5 years, construct a fast transit logistics network between major cities in Guangdong, Hong Kong and Macao
S1-3S6T4T5: Improve the salary of logistics-related staff and retain high-end talents	Every year, improve the remuneration package of logistics-related staff and increase training efforts
W5T4T5: Continuous investment in the training of logistics professionals and the introduction of elite professionals	Within 3 years, improve the logistics personnel training system and formulate localization and international talent training measures
W1W6T2T3: Open up capital investment in the logistics industry, develop infrastructure and international market.	Within 5 years, open up the logistics market, optimize the structure, let more logistics enterprises go overseas for the international market
W2-4T2T3: Continuously improve customer satisfaction and retention rate, improve logistics service quality	Within 3 years, establish a better customer evaluation system, and honor the logistics enterprises offering high customer satisfaction

The strategies obtained in Table 6 can be compared on a case-by-case basis by the expert group to select a better strategy. The priorities of the strategies are shown in Table 7.

Table 7 Comparison of the development strategy of Huizhou logistics industry

Pairwise comparison	A	B	C	D	E	F	G	H	I	J	K	score
A: Within 5 years, Improve the logistics industry structure of Huizhou, including optimization of various transportation modes, and introduction of information technology												10
B：In 3 years, attract customers from the Pearl River Delta	A											2
C: Within 5 years, rely on the opportunity of Guangdong-Hong Kong-Macao Greater Bay Area to open up the international market.	A	C										4
D: Within 5 years, improve the service quality of the logistics industry as a whole and increase the income level	A	D	D									8
E: Every year, increase investment in education for local colleges and universities and attract foreign talents to benefit employment.	A	E	C	D								1
F: Every year, open special logistics talent recruitment fairs	A	B	C	D	F							1
G: In 5 years, construct a fast transit logistics network between major cities in Guangdong, Hong Kong and Macao	A	G	G	G	G	G						9
H: Every year, improve the remuneration package of logistics-related staff and increase training efforts	A	H	C	D	H	H	G					3
I: Within 3 years, improve the logistics personnel training system and formulate localization and international talent training measures	A	I	I	D	I	I	G	I				5
J: Within 5 years, open up the logistics market, optimize the structure, let more logistics enterprises go overseas for the international market	A	B	J	D	J	J	G	J	J			5
K: Within 3 years, establish a better customer evaluation system, and honor the logistics enterprises offering high customer satisfaction	A	K	K	D	K	G	K	K	K			7

Through the pairwise comparison method, it is found that the scores of four strategies of B, E, F and H are too low, hence they are deleted. Other strategies are sorted according to the scores, and the development strategies of Huizhou logistics industry thus can be obtained for referenced implementation.

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