

Research on the Competitive Strategy of a Power Design Company Under the "New Infrastructure"

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ABSTRACT

This paper discusses the competitive strategy of A Power Design Company under the background of "New Infrastructure", uses PSET and Porter's five forces model to analyze Company A's macro environment and industry competition structure, and analyzes the company's internal resources and capabilities. After sorting out the opportunities and threats of the external environment, internal strengths and weaknesses, by constructing the SWOT matrix and analyzing the three major competitive strategies, the company's competitive strategy and implementation methods are proposed to achieve sustainable development.

Keywords : *New Infrastructure; PEST; Michael Porter's five forces model; differentiated competitive strategy*

1. INTRODUCTION

The Central Economic Work Conference first proposed the "New Infrastructure" in 2018 years, which is an infrastructure system based on information networks and driven by technological innovation to provide services such as digital transformation, intelligent upgrading, and integration innovation. Due to the introduction of the concept of "digital transformation and intelligent upgrading", the Internet and Internet of Things technologies are rapidly merging with the traditional infrastructure industry. As the earliest company engaged in power design in Guizhou Province, A Power Design Company (hereinafter referred to as "Company A"), under the increasing competition pressure of the local market, deployed a new business—geographic information system (GIS) in advance, which became a new bright spot of innovative development for the company. In the future, how to adapt to the needs of the "New Infrastructure" and seize the development opportunities to achieve the company's long-term development will be an important subject for Company A to think about.

In recent years, domestic scholars have studied the development strategy of power design companies. In the power design industry, due to the particularity of the industry greatly affected by the policy, the strategy is more proposed in combination with the development of

The Times. The hot strategic selection of the power system reform, engineering company transformation and digital transformation have been mentioned in these papers^[1-3]. Because the "New Infrastructure" is in the initial stage, the relevant research is less. It is more focused on the conceptual, characteristics, policy suggestions, and the prediction of the impact on the economy and the industry development^[4-6].

2. PROFILE OF COMPANY A

Company A engages in electric power survey and design in Guizhou Province. Before 2011, the main business sources all came from China Southern Power Grid, with a single service object and little market pressure. After the electric power system reform was incorporated into PowerChina in 2011, the external environment has undergone major changes. Company A has not only lost the main sources of business, but also lost the market protection, facing competition from provincial power designers. In order to find new business breakthroughs, Company A has actively developed GIS and achieved good results. However, Company A is facing the dilemma that the traditional survey and design market is shrinking seriously, the EPC is lack of experience, and the new business GIS is in the growth stage and immature.

The survival and development must keep up with the pace of the times. For Company A, under the background

of "New Infrastructure", due to the intervention of Internet thinking and market mode, it is necessary to research the suitable competitive strategy according to the company's development goals, in order to enhance the company's market competitiveness and seize more market share.

Therefore, based the "New Infrastructure", this paper first analyzes the external environment and internal environment of Company A, and constructs the SWOT matrix. After comparing and analyzing the three major competitive strategies, this paper puts forward the choice of competitive strategy. Finally, it discusses the ways to implement the competitive strategy.

3. EXTERNAL ENVIRONMENT ANALYSIS OF COMPANY A

3.1. Macro-environment analysis (PEST)

(1) Political factor: In the transition from traditional infrastructure to "New Infrastructure", electric power, as the core infrastructure, is a the key construction projects.

(2) Economic factor: With the introduction of supporting policies related to "New Infrastructure", there is huge room for domestic economic growth. A large amount of investment will enter the "New Infrastructure".

(3) Social factor: The clean energy such as electricity is favored and selected by consumers, and it is also supported by national policies.

(4) Technology factor: Under the "New Infrastructure", the technology development speed of smart grid will be more accelerated, and the disadvantage that traditional power design enterprises attach importance to power weakening informatization will be further highlighted.

3.2. Industry competition structure analysis (Porter Five-force Model analysis)

The Porter five-force model was used to analyze the competitive structure of the power design industry in Figure 1.

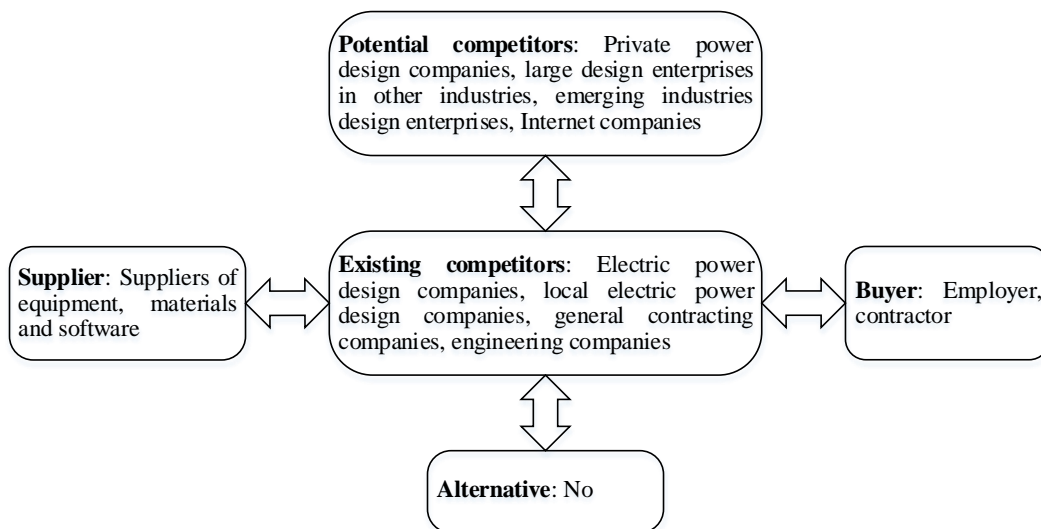


Fig.1 Industry competition of Company A

3.3. Comprehensive evaluation of the external environment

To sum up, the external environment of Company A has many opportunities: First, the system reform of the power industry provides convenience for Company A to open the domestic market. Second, with the implementation of the "New Infrastructure", the digital transformation of the power industry continues to deepen, and the expansion of GIS makes Company A have more development room. Third, the environmental business is increasing year by year, and the EPC of new energy projects has more opportunities and channels. Fourth, the application of digital substation technology, GIS and other new technology has laid a technical foundation for Company A.

At the same time, Company A is also facing the threats. First, the reform of the power industry and the opening of the market has brought competitive pressure to company A. Second, the threshold of new energy business is relatively low, so the competition is relatively fierce, and the risk of policy impact is greater. Third, power generation and power grid enterprises have always been monopolies and have strong control over prices, which poses a threat to the profitability of Company A. Fourth, Company A is located in the western economically underdeveloped province, the talent gathering advantage is not obvious.

4. INTERNAL ENVIRONMENTAL ANALYSIS OF COMPANY A

The internal environmental analysis of the company mainly carries out from internal resources and internal capabilities, and summarizes the internal strengths and weaknesses of Company A as follows:

4.1. Internal strengths

(1) Company A has good customer market resources and a high market share in Guizhou, especially with the brand, region and market resources.

(2) Power point survey and design advantages: thermal power design in mountain terrain has advantages; biomass power generation engineering, photovoltaic power design has absolute competitive strength and market share in Guizhou.

(3) Power point survey and design advantages: thermal power design in mountain terrain has location advantages; biomass power generation engineering, photovoltaic power generation design has absolute competitive strength and market share in Guizhou.

(4) New business of GIS capability is in the leading position. It has technical advantages in geological disaster prevention, UAV monitoring, 3D scene application and so on. With the "New Infrastructure", the Company A's digital technology advantages are more significant.

4.2. Internal weaknesses

(1) Insufficient investment in R&D, and little output of achievements. Company A has won fewer awards in the national awards.

(2) Unreasonable organizational structure. The powers and responsibilities between departments are unclear, and the cooperation and coordination are not smooth enough, which is not conducive to the long-term development of the company.

(3) The financial management level is still low. The company's financial personnel do not have the market-oriented financial management concept.

(4) The information management level is not high. The company's information system has problems such as low data correlation and weak statistical analysis, which cannot provide support for the company's strategic decisions.

5. SELECTION AND FORMULATION OF COMPETITIVE STRATEGIES

5.1. SWOT analysis

Combining the above analyses, constructing the SWOT matrix of Company A is shown in Table 1.

Tab.1 SWOT matrix of Company A

External environment (O, T) Internal environment (S, W)	Opportunities—O	Threats—T
	O1 "New Infrastructure" O2 Electric power industry system reform is conducive to explore the domestic market O3 Rising awareness of environmental protection, the EPC of new energy projects has opportunities O4 New technology has laid the technical foundation for the development of Company A	T1 Market competition pressure T2 New energy is at a greater risk of being affected by the policy T3 Owner unit price control is strong T4 Talent advantage is not obvious
Strengths—S	SO	ST
S1 Brand, regional and market resource advantages S2 GIS is in the lead position S3 Power point survey and design advantages S4 Power grid design and survey advantages	1, With the opportunities of "New Infrastructure" and the leading position of GIS, Company A can actively develop the market outside the province. 2, Company A can deeply integrate the technical advantages of GIS and survey and design, to create differentiated core competitiveness and develop integrated energy business.	Company A can rely on the market resources accumulated for years to give full play to the local advantages, and create a good reputation in the industry to reduce geographical restrictions.
Weaknesses—W	WO	WT
W1 R&D investment is insufficient W2 Organizational structure is unreasonable W3 Financial management is low W4 Information management is low	1, Company A can increase R&D investment in UHV, charging piles and GIS, to seize the opportunity of "New Infrastructure". 2, Company A can make innovations in organizational structure and information management in order to meet the demands of the development.	1, Company A can improve the human resources system, train the professional level of core technical personnel, improve the attractiveness and reduce regional restrictions. 2, Company A can improve the project management system, improve project quality, service quality and reduce costs.

By combining the strengths and weaknesses, opportunities and threats of Company A, the SWOT matrix is constructed, and the four combinations are comprehensively analyzed to derive the following strategies.

SO strategy: its core idea is to make advantage of "New Infrastructure" to deeply integrate the technical advantages of GIS, survey and design and EPC, create differentiated core competitiveness, and vigorously develop integrated energy business;

WO strategy: its core idea is to make advantage of opportunities, improve disadvantages, take a sound human resources system, increase investment in R&D, improve the management system, to change the internal adverse factors;

ST strategy: by analyzing the strengths and threats, to formulate strategic measures in line with the strengths of companies, so as to achieve the impact of avoiding external threats;

WT strategy: its core idea is to eliminate disadvantages, reduce the blow and disperse risks by improving the technical level, increasing investment in innovation, improving the management system.

Through the above comprehensive comparative analysis, the most suitable strategy of Company A is SO strategy, that is, by using the "New Infrastructure" to deeply integrate the technical advantages of GIS, survey and design and EPC, create differentiated core competitiveness, and vigorously develop comprehensive energy integration business.

5.2. Competitive strategy selection

On the basis of SWOT analysis, combined with the strategic objectives of the company, this paper makes a comparative analysis of the optional competitive strategies of Company A:

(1) Centralized competition strategy

Although the power design industry contains a lot of business areas and business scope, it cannot cut and segment the market. Therefore, the centralized strategy is not applicable to Company A.

(2) Cost-leading competitive strategy

As a knowledge-intensive enterprise, Company A has a high proportion of manpower costs to operating costs. Using the cost leading strategy will significantly reduce the attraction to personnel, thus reducing the competitive advantage of the company. Therefore, the cost leading strategy is not suitable for Company A.

(3) Differentiating competition strategy

For A company, the traditional survey and design business homogeneity is serious, GIS business in the

leading position, using differentiation strategy can form its own products, services, brand and technical advantages in many design companies, so as to avoid the vicious circle of low price competition, promote the development of the company. Therefore, Company A is recommended to adopt a differentiated competition strategy.

To sum up, Company A can seize the digital transformation opportunity of the "New Infrastructure", make full use of GIS digital advantages and class A survey and design qualifications. Company A can deeply integrate the traditional survey and design technology and GIS, expand the differential competitive advantage of digitization, and further broaden the industrial chain, and gradually form a full-business integrated construction capability from pre-consultation, survey and design, construction to digital operation and maintenance, provide comprehensive intelligent energy integration services, and avoid homogenization competition with other design companies.

6. IMPLEMENTATION METHOD OF THE COMPANY'S COMPETITIVE STRATEGY

6.1. Improve the informatization level of EPC and survey and design business

Through the capability of geographic information technology, Company A can combine its traditional survey business with EPC. In the aspects of survey and design, EPC project construction site management, Company A can introduce GIS operation and maintenance, UAV LiDAR inspection, stability monitoring and so on, to build a comprehensive management platform for real-time management and control, improve the efficiency of on-site management and achieve lean management of the whole process.

6.2. Build a professional brand image of electric power GIS

Based on the existing GIS business, the core technical advantages of survey and design are further integrated into the development of GIS, to create a professional brand of electric power GIS. Based on the expansion of GIS business, further enhance the differential competitive advantage of company A in the electricity market and non-electricity market, and increase the actual income-generating ability, talent gathering ability and project-driven ability. Let the GIS business become a carrier of the industry chain, forming a horizontal and vertical industrialization extension.

6.3. Implement the integrated construction service of comprehensive intelligent energy

Company A can grasp the "New Infrastructure" and evolve to comprehensive intelligent energy on the basis of survey and design, general contracting and deep integration of GIS, gradually form a full-business integrated construction capability from pre-consultation, survey and design, construction to digital operation and maintenance, provide intelligent comprehensive energy integration solutions, and enhance the overall market competitiveness of Company A.

7. CONCLUSION

Under the "New Infrastructure", the external environment changes and uncertainties of power design companies have been at the historical high. How to continuously survive and develop in a complex and changeable environment has become an urgent core problem for Company A. Therefore, this paper uses PSET and Porter five-force model to analyze the external and internal environment of Company A, studies the opportunities and threats, strengths and weaknesses, then builds the SWOT matrix, proposes the corresponding SO strategy, WO strategy, ST strategy and WT strategy, after comparing the three competitive strategies, and finally recommends Company A to choose the differentiated competitive strategy, and formulates the corresponding implementation methods.

To sum up, if Company A wants to stand out in the fierce competition, it should seize the opportunities of "New Infrastructure", deeply integrate the technical advantages of GIS, survey and design and EPC, implement differentiated strategies, create differentiated core competitiveness, and it is easier to expand the market and have lasting development.

ACKNOWLEDGMENTS

This paper is one of the phased achievements of the project of Guizhou Provincial Department of Science and Technology "Beidou Satellite Power Industry Application key Technology Research and data Application industrialization" (2018) 3007.

This paper is one of the phased achievements of the project of China Electric Power Construction Co., Ltd. "Power Grid Application based on Beidou Satellite Navigation and data Analysis and Research of ubiquitous Power Internet of things" (DJ-ZDXM-2019-52).

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