

Original Paper

Research on Competitive Strategy of Electric
Company—Taking China Railway High-speed Railway Electric
Equipment Co.

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Abstract

China has introduced a series of supporting measures for the problem of high-speed railway equipment jam, which increases the pressure of market competition to a certain extent. In order to strengthen the market competition, China Railway Electric Equipment Company must develop a scientific competitive strategy to enhance the long-term development ability of the enterprise.

In this paper, China Railway Electric Equipment Company is selected as the research object, the competitive environment of the industry is analyzed based on the Porter five-force model, and then SWOT analysis is used to describe the advantages, disadvantages, opportunities and threats of the company, the SWOT matrix is constructed, and the differentiated competitive strategy of China Railway Electric Equipment Company is selected according to the above analysis results. Finally, China Railway Electric Equipment Company chooses differentiated competitive strategy, strengthen research and development and technical innovation, realize the differentiation of technical products; actively expand sales channels, distinguish direct sales channels and overseas sales channels; actively introduce quality service marketing, introduce and improve customer satisfaction survey system, and actively introduce quality service marketing.

Keywords

differentiated competitive strategy, corporate culture, technology research and development, electrical equipment

1. Introduction

In recent years, with the rapid development of railway electrical equipment, new technology development and market competition increasingly heated, the traditional electrification of railway and urban rail transit power supply equipment manufacturing is facing the transition of transformation and upgrading of the industry and the transformation and upgrading is the intelligent and green development, need toward intelligent, green, lightweight, series, standardization, platform upgrade optimization (Belton, 2017). Especially around high speed intelligent green railway equipment, advanced urban railway electrical equipment and other fields, master the core technology of industry leading, adhere to the key product research and development and technology update, further improve the electrified railway catenary products and urban rail transit power supply equipment system is particularly important, in the face of complex and changeable internal and external environment of (Kimiti, Muathe, & Murigi, 2021). Enterprises need to systematically sort out external opportunities and threats, analyze internal advantages and disadvantages, address the low gross margin, transformation and development pressure, the pace of internationalization, it is urgent to study the existing competitive strategy, take effective measures to promote the sustainable and healthy development of enterprises (Negi, Raj, Kumar et al., 2021).

2. Industry Competition Environment Analysis*2.1 Industry Competitor Analysis*

In the field of electrified railway catenary, more and more enterprises have obtained the business license and CRCC certification of the railway department, and the product competition is relatively perfect. China Railway Electric Equipment Company has a complete high-speed railway system, non-high-speed railway and urban rail transit series catenary and power supply products, and actively participates in the market competition of electrified railway catenary products and urban rail transit power supply equipment; the demand quantity and the price scale of the operator are announced through bidding. Participate in or collect and count the demand quantity and bid-winning quantity of operators. In 2021, the company's share in the high-speed rail catenary product market and urban rail transit power supply equipment market is shown in Table 2.1.

Table 2.1 Market Share of China Railway Electric high-speed Railway Overhead Line Product Market and Urban Rail Transit power Supply Equipment Market

Project	In 2019	In 2020	In 2021
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Market demand for high-speed rail overhead catenary products (100 million)	13.14	5.05	13.02
Among them: China Railway Electric bid-winning amount (100 million yuan)	7.40	3.05	7.98
China Railway Electric market share	56.30%	60.38%	61.30%
Market demand amount for urban rail power supply products (100 million yuan)	12.27	15.79	10.74
Among them: China Railway Electric bid-winning amount (100 million yuan)	7.15	8.67	5.34
China Railway Electric market share	58.24%	54.90%	49.73%

Data source: Statistical report of China Railway High Railway Electrical Equipment Co., LTD.

China Railway Electric Equipment Company has obvious market advantages. From 2019 to 2021, the revenue of China Railway Electrical Equipment Company from selling power supply equipment of urban rail transit was 531 million yuan, 458 million yuan and 588 million yuan respectively, and the total revenue of the reporting period was around 500 million yuan. According to the annual report of Yichang Electric, when this document was compiled, its annual operating income was about 30 million yuan, showing an obvious gap with the company. According to the winning data of China railway electrical equipment company, according to the bid, the company in the urban rail transit market share of about 50%, significantly higher than China railway construction electrification bureau group rail transit equipment co., LTD., than wei (Tianjin) electrification system co., LTD. Business contact rail products, Hengshui treasure force railway electrification equipment co., LTD., Baoding toward the male electric power equipment co., LTD. And Nanjing Jincheng rail transit equipment co., LTD., etc.

2.2 Analysis of the Bargaining Power of the Suppliers

The raw materials purchased by the company are mainly metal materials, semi-finished products and finished products, accounting for about 85% of the total purchase amount in each period. The metal materials are mainly non-ferrous metals, and the steel and aluminum composite contact rail has the highest amount among semi-finished products and finished products. The purchase amount from 2019-2021 is 30,538,300 yuan, 68,297,900 yuan and 22,733,600 yuan respectively. As shown in Table 2.2.

Table 2.2 The Amount of Raw Materials Purchased by China Railway Electric Equipment Company

Project	In 2019	In 2020	In 2021
Metal material (yuan)	36426.17	52097.82	42363.26
Semi-finished products and	19004.52	28587.14	23961.29

finished products (RMB)

Fastener (Yuan)	5536.70	8443.23	6693.30
Auxiliary Supplies (RMB)	4239.24	5857.57	4402.03
Power fittings (RMB)	205.28	352.07	192.68
Power fittings (RMB)	65411.92	95337.83	77612.56

Data source: Statistical report of China Railway High Railway Electrical Equipment Co., LTD.

The aluminum and aluminum alloy purchased by the company are mainly aluminum ingots and machining aluminum profiles, aluminum alloy round pipe and rectangular aluminum alloy pipe, aluminum alloy rod, etc. As the main aluminum purchased by the company, aluminum profile has higher processing requirements, and the price is higher than that of general aluminum ingot. The average purchase price from 2018-2020 is between 16-18 yuan / kg, and the average price of aluminum purchased by the company has increased.

2.3 Threat Analysis of Potential Entrants

The company's products are closely related to rail and urban rail transit safety, traffic safety and passenger safety. The reliability requirements of the related products are very high, therefore, the National Railway Administration and other relevant departments have put forward strict qualification requirements for the administrative authorization and quality certification of the manufacturers of electrified railway catenary products currently. Although the city rail power equipment has no mandatory administrative licensing, but most related products bidding requires previous performance and a certain period of safe operation experience, only this was proved in the industry, enterprise performance can meet this requirement, but due to the lack of performance, new entrants is difficult to enter the raw material market. Overall, the company is in an industry with high barriers to entry.

2.4 Threat Analysis of the Alternatives

With the development of railway equipment manufacturing technology in China, the products are becoming more and more intelligent, and there will be more intelligent products that can replace the existing products in the future.

2.5 Buyers Chaser Bargaining Power

The company mainly provides products for large railway and urban metro projects. Its main customers are various railway bureaus, railway companies, railway construction contractors and various urban rail transit companies. The top five receivable customers of China Railway Electric in 2021 are shown in Table 2.3.

Table 2.3 Five Major Customers of China Railway Electric Company

Customer name	Sales amount	Proportion of operating revenue
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Subunit of China Railway Corporation (ten thousand yuan)	71683.94	52.92%
Subsidiary unit of National Railway Group (ten thousand yuan)	41082.30	30.33%
Subordinate unit of China Railway Construction Corporation (ten thousand yuan)	6274.90	4.63%
Henan Intercity Railway Co., Ltd. (ten thousand yuan)	2467.71	1.82%
Wuxi Metro Group Co., Ltd. (ten thousand yuan)	2349.83	1.73%

Data source: Statistical report of China Railway High Railway Electrical Equipment Co., LTD.

These customers have to purchase related electrification equipment through bidding. Due to the many companies participating in the bidding, China Railway Electrical Equipment Company, as Party B, must bid in strict accordance with the lowest bidding price, which means that its customers have strong bargaining power.

3. Competitive Strategy Evaluation and Selection of China Railway Electric Equipment Company

3.1 SWOT Appraise

After the analysis of the competitive environment of the industry and the internal environment of China Railway Electric Equipment Company, the advantages, disadvantages, opportunities and threats of China Railway Electrification Bureau Group are summarized as follows.

3.1.1 The Strengths

1) China Railway electrical equipment has strong production and manufacturing strength, complete factories, relatively advanced high-speed railway, urban rail transit power supply equipment, general speed railway technology, mature products and successful large-scale operation projects, and has participated in a number of large-scale railway power equipment projects.

2) Since its establishment, China Railway Electric Equipment Company has paid great attention to improving product quality through advanced production technology and testing equipment. Catenary products are strictly produced and quality inspected according to the quality standards of the state and the former Ministry of Railways, and the core products are also tested in accordance with the quality standards of foreign developed countries. In order to ensure the safety and reliability of catenary products, the double standards are implemented for acceptance.

3) China Railway Electrical Equipment Company is one of the earliest enterprises to enter the field of electrified railway catenary. With years of successful project implementation experience, good technical support and perfect after-sales service, China Railway Electrical Equipment Company has a strong market advantage in the field of high-speed railway, urban rail and subway.

4) China Railway Electric Equipment Company pursues excellence, especially for the high-speed research and development, design and manufacturing of railway equipment, the pursuit of excellence. In order to improve the market competitiveness of enterprise products, it is necessary to constantly improve the scientific and technological content of enterprise products, so that they can meet the requirements of market diversification and sophisticated technology.

3.1.2 The Weaknesses

1) There are various kinds of high-speed rail electrical products. The products developed by China Railway Electrical Equipment Company cannot fully meet all the needs of high-speed rail electrical products. The development of new products lags behind, which can easily lead to the reduction of its market share.

2) The products of China Railway Electric Equipment Company are mainly high-speed railway, subway, urban rail, etc. There are many similar companies producing such products. The company's investment in product research and development is very high, and the company's cost is very high, resulting in weak profitability.

3) China Railway Electrical Equipment Company needs to purchase many key spare parts from abroad. Due to the trade war between China and the United States and foreign technical support, the research and development of key accessories is not mature and the supply is limited, which is not conducive to the development and growth of enterprise products.

4) Compared with internationally renowned industrial enterprises, the China Railway Electrical Equipment Company has a smaller scale. The rapid development of the company requires a large amount of investment in various aspects such as research and development, procurement, production and daily operations. The current capital capacity of China Railway Electric Equipment Company is insufficient to meet the needs of the rapid development of the company. In order to seize the opportunity and accelerate the development, China Railway Electric Equipment Company needs more abundant financing channels.

3.1.3 The Opportunities

1) Due to the "long-term railway network planning", "traffic power", "high-speed rail go out", "Belt and Road" and "new infrastructure", "to build domestic and international economic binary" national development strategy and mode, China railway electrical equipment company involved in electrified railway catenary products, urban rail transit power supply equipment is the construction of railway and urban rail products, industry policy directly promote the company and its downstream customers of railway and urban rail transit construction, improve the market demand of the company products.

2) With the rapid development of China's railway, the railway industry, especially the high-speed railway, has a broad development prospect. As a leader in the high-tech field, China Railway Electric Equipment Company will benefit from it.

3) The proportion of high-speed rail in China's total railway volume has increased rapidly year by year, from 10.68% in 2013 to 25.18% in 2019."Medium and Long Term Railway Network Planning"

requires that by 2020, the total mileage of the railway network will reach 15 0,000 km, including 30,000 km of high-speed rail, covering more than 80% of the big cities; by 2025, the total mileage of the railway network will reach about 175,000 km, of which 38,000 km, and the coverage of the railway network is further expanded.

4) With the development of China's intelligent manufacturing industry, the development and growth of enterprises are also actively supporting the development of high-end equipment manufacturing industry, the new industrial revolution provides greater opportunities for the development of enterprises, but also makes the development and growth of enterprises involves more risks.

3.1.4 The Threats

1) With the increasing trade tension between China and the United States, the United States has turned its attention to China's high-end equipment manufacturing industry, which seriously hinders the development and growth of China's high-end equipment manufacturing industry, thus endangering the development of China's high-end equipment manufacturing industry. In addition, public health emergencies also limit the travel opportunities of the Chinese people, which is not conducive to the rapid development of China's economy.

2) Intelligent manufacturing of high-end equipment is a major challenge for the development of the industry. To keep up with the development of high-end production industry, not only the production technology of electrical equipment manufacturing, but also the development of 5G communication technology, robot technology and intelligent factory technology.

3) The rapid development of high-speed rail and urban rail transit has led to an increasing demand for new technologies and new applications. In order to meet the market demand, the company needs to maintain and update the excellent r & d talent team, and gradually increase the r & D investment. The company's capital channels are limited, there are certain financial constraints, and there are certain restrictions on the expansion of R & D talents and the increase of scientific research investment.

4) Railway transportation and urban rail transit are large-scale investments linked to the national economy and people's livelihood, and the investment and construction are mainly promoted by the government, so their investment is strongly influenced by the guidance of the national industrial policy.

3.1.5 SWOT Matrix Assessment

The SWOT matrix is a powerful tool to analyze the external environment and internal resources of enterprises. The SWOT matrix compares and analyzes SO, ST, WO and WT four strategies, so as to develop alternative competitive strategies for China Railway Electric Equipment Company, as shown in Table 3.1.

Table 3.1 The SWOT Analysis Matrix

Project	chance	threaten
	A total of 6 aspects.	A total of 6 aspects.

superiority	SO strategy	ST strategy
A total of 7 aspects.	Research and develop products, develop differentiated channels, improve differentiated services, design differentiated brand image, set differentiated product prices, and improve the competitiveness of enterprises.	Make use of technological innovation strength, implement the technology of low-end products, enhance the market competitiveness and profitability; optimize the personnel structure, introduce and train high-end talents, and improve the research and development level and marketing level.
inferior	WO strategy	WT strategy
strength or position There are seven aspects in total	Strengthen market research and R & D investment, innovate product management system, improve differentiated products and services; lean management, whole-process cost control, and improve efficiency.	Change company strategy, enrich product types, optimize market structure and improve competitiveness; cooperate with intelligent intelligent manufacturing company to enhance enterprise automation and intelligence and reduce work complexity.

Therefore, according to the SWOT matrix analysis results, we provide alternative strategies for China Railway Electric Equipment Company, and the detailed data are shown in Table 3.2.

Table 3.2 Alternative Strategy of China Railway Electric Equipment Company

Strategic category	Order number
Total cost-leading strategy	WO strategy
Differentiation strategy	SO strategy
Concentrated strategy	ST strategy

3.2 Competition Strategy Choice

In this paper, 40 managers of China Railway Electrical Equipment Company, staff of functional departments, key personnel of production technology and marketing were selected to conduct research, and 40 questionnaires were distributed on—31 on August 1,2022;Based on the questionnaire results, the attraction score of the alternative strategy in the QSPM matrix, and then use the QSPM matrix to quantitatively evaluate each alternative strategy, thus using the evaluation results to choose an optimal competitive strategy for China Railway Electric Company;It can be seen that the attractive score of each alternative competitive strategy of China Railway Electric Equipment Company is: 4.99 points for the total cost leading strategy, 5.29 points for the centralized strategy and 7.72 points for the

differentiation strategy. Among them, the attractive score of the differentiation strategy is the highest. Therefore, the optimal strategy of China Railway Electric Equipment Company is the differentiated competitive strategy. As shown in Table 3.3.

Table 3.3 Quantification of the Assessment Results Based on the QSPM Matrix

Critical factor	weight	Total cost-leading strategy		Differentiation strategy		Target agglomeration strategy	
		AS	TAS	AS	TAS	AS	TAS
O1	0.08	2	0.16	4	0.32	3	0.24
O2	0.07	4	0.28	3	0.21	2	0.14
O3	0.1	2	0.2	4	0.4	3	0.3
O4	0.11	2	0.22	4	0.44	3	0.33
O5	0.06	2	0.12	4	0.24	3	0.18
O6	0.11	3	0.33	4	0.44	2	0.22
T1	0.06	2	0.12	4	0.24	3	0.18
T2	0.08	3	0.24	4	0.32	2	0.16
T3	0.08	2	0.16	4	0.32	3	0.24
T4	0.08	2	0.16	4	0.32	3	0.24
T5	0.09	2	0.18	4	0.36	3	0.27
T6	0.08	2	0.16	4	0.32	3	0.24
S1	0.08	4	0.32	3	0.24	2	0.16
S2	0.09	3	0.27	4	0.36	2	0.18
S3	0.06	2	0.12	4	0.24	3	0.18
S4	0.07	4	0.28	3	0.21	2	0.14
S5	0.05	2	0.1	4	0.2	3	0.15
S6	0.06	2	0.12	4	0.24	3	0.18
S7	0.09	3	0.27	4	0.36	2	0.18
S8	0.05	2	0.1	4	0.2	3	0.15
W1	0.05	2	0.1	4	0.2	3	0.15
W2	0.06	3	0.18	4	0.24	2	0.12
W3	0.09	2	0.18	4	0.36	3	0.27
W4	0.07	2	0.14	4	0.28	3	0.21
W5	0.06	4	0.24	3	0.18	2	0.12
W6	0.07	2	0.14	4	0.28	3	0.21
W7	0.05	2	0.1	4	0.2	3	0.15
summation			4.99		7.72		5.29

4. Suggestions on Competitive Strategy Optimization of China Railway Electric Equipment

Company

4.1 Suggestions for Competitive Strategy Optimization

4.1.1 Technology and Product Differentiation

The company will actively carry out intelligent operation and maintenance, intelligent construction, Constantly explore technology research in emerging fields, Constantly bring vitality to the development of the company, Provide support for the expansion of the company's industrial chain, To realize the diversified development of the company, To realize the development goal of "full standard, intelligence, highest speed, online test and ground reform" of rail transit power supply equipment; through technology transfer, technical capital equity participation, technical service and technical consultation, Promote the development of the company's innovative service business, Create new industries and new economic growth points, To enable the company to become a world-class manufacturer of transportation traction power supply system products and system solutions provider.

1. China is experiencing a period of rapid expansion of high-speed railway and urban rail, during which China Railway Electrical Equipment Company will conduct research and development according to the construction needs, and seize the lead in technology and products. In 2021, the company will apply for 44 new patent rights and obtain 47 patent rights (including 3 in 2020 and authorized in 2021). The total number of patent rights will reach 225, and 60 patents are expected to be applied in 2022, as shown in Table 4.1.

Table 4.1 Number of Patent Property Rights

Number of patent property rights	Application number	Get the number	the Application number	Get the number
Number of invention patents	11	2	93	30
Number of utility model patents	32	45	320	188
Number of appearance design patents	0	0	18	3
Number of software Copyrights	1	0	5	4
Number of other patents	0	0	0	0
Total number	44	47	436	225

Data source: China Railway High-Speed Railway Electrical Equipment Co., LTD.

In the field of railway, China railway electric equipment company will focus on different high-speed operating conditions of railway and passenger railway, optimize the existing catenary equipment series, simplify and standardize the main catenary parts installation design and type, enhance the technical competitiveness of the installed system, and firmly occupy China's leading position in standard application. Combined with the demand of increasing operation speed, further improve the operation reliability and fault tolerance ability of the system products to meet the operation demand of reducing

equipment maintenance; follow the frontier research of high-speed railway traction technology at 400 km and high-speed maglev power supply technology at 600 km, to reach the highest technical level of the industry and improve the independent operation ability. Creating a more integrated product system, from design, production, installation, to maintenance, is a complete solution.

Intelligent manufacturing implements data-driven manufacturing process and advanced production management, help to shorten the production cycle, reduce production losses and improve production flexibility, is the key to the company committed to developing rail transit with a richer product system. China Railway Electrical Equipment Company is carrying out intelligent transformation of the existing factory to improve production efficiency and lightweight production level. China Railway Electric Equipment Company will organize the existing mature technology to build an intelligent production system according to the production requirements, carry out process collaborative design and simulation, shorten the product design and trial production cycle, realize process automation and real-time management of production links, and strengthen the on-site management of equipment, production data, product traceability and energy consumption data. China Railway Electric Equipment Company conducts in-depth analysis of products and process characteristics, classify products, tailor flexible process units for the company's products, and realize unit product production. In 2021, China Railway Electrical Equipment Company will thoroughly analyze the product and process characteristics, classify the products, and tailor flexible processing units for the company's products, so as to realize the production of product units. China Railway Electrical Equipment Company has invested 57.455 million yuan in RESEARCH and development, and is expected to invest 61,612,500 yuan in research and development in 2022, accounting for 4.16% of the revenue, as shown in Table 4.2.

Table 4.2 Estimated R & D Investment in 2022 (ten thousand Yuan)

Project	In 2020	In 2021	amplitude	
			of variation; rangeability	In 2022
Total R & D investment (ten thousand yuan)	5357.8	5745.5	7.24%	6161.255
The proportion of total r & d investment in operating revenue	3.96%	4.06%	2.53%	4.16%

Data source: China Railway High-Speed Railway Electrical Equipment Co., LTD.

4.1.2 Market Channel Differentiation

1) When choosing sales channels, China Railway Electric Equipment Company comprehensively takes into account national laws and regulations, market demand, company location, product characteristics and other factors, and selects appropriate sales channels according to the purchasing habits of different

end-users of products; China Railway Electrical Equipment Company will continue to play a leading role in the market, based on scientific and technological innovation, continue to collect urban railway development policy information, pay special attention to customer needs, and adopt the direct selling model. On the basis of the existing sales system, China Railway Electric Equipment Company will focus on the domestic intercity railway, commuter railway, comprehensive center, central and western railway, urban rail and other projects, deepen the market promotion and improve the market share.

2) China Railway Electric Equipment Company improves its operation mode, actively expand overseas market, continuously supports the enterprises to become stronger and better, form a consortium or sign strategic cooperation agreement, integrate the customer resources of international general contractor and form the situation of "going out to sea", actively explore overseas market demand and participate in the construction of China high-speed railway. Focusing on the strategies of "high-speed rail going global" and "One Belt And One Road", we will actively explore overseas market demand, participate in the construction of China's overseas high-speed rail projects, and increase revenue from overseas markets. China Railway Electrical Equipment Company explores the opportunity to acquire overseas electrical equipment companies, meet the needs of existing customers, explore the other needs of existing customers, develop new technologies, new products, new applications and new solutions and bring them to the market.

3) Many of the customers of China Railway Electrical Equipment Company are mostly large central enterprises or local state-owned enterprises, There are inextricably linked close relations between these state-owned enterprises of the same type and in different provinces, Therefore, once China Railway Electric Equipment Company enters a state-owned enterprise supplier, Relational marketing theory should also be actively utilized, first, From the enterprise pre-sale to customers for a full range of guidance, Publicize and implement the existing national policies, To inspect the existing water quality of China Railway Electric Equipment Company, To prevent environmental accidents caused by enterprises in dealing with substandard water quality, Ensure that the products arrive on time on sale, And conduct the inspection in advance to ensure the product quality, Timely arrange the installation personnel debugging; Regular return visits after product sales, Make major problems to the scene within 12 hours, General accident 24 hours rushed to the scene, Put customer interests first, Do not harm the interests of customers because of our company's problems. Secondly, China Railway Electric Equipment Company should also actively explore the cooperation mode, cooperate with third party companies, such as urban rail operation companies to jointly develop new customers, cooperative marketing is not only conducive to consolidating the existing market position, but also conducive to reducing unbeneficial competition, to achieve the purpose of win-win situation. For the third-party cooperative companies to provide new customer cooperation, take the proportional reward, or for the next purchase subsidy amount, to enhance customer stickiness.

4.1.3 Differentiation of Service Quality

1) Adhering to the "customer first, honest and trustworthy, sincere customer service" enterprise purpose, constantly optimize the product structure, improve the technical level, establish a perfect quality management system, strict monitoring of product quality, and strive to provide customers with high-quality products, to meet the requirements of customers for product characteristics. The company strictly abide by the contract, timely delivery, quality and quantity, and protects the rights and interests of customers. The company attaches great importance to the communication and feedback with customers, strives to improve the service quality, formulate detailed service return visit plan, timely deal with customer complaints, solve customer problems, and safeguard the legitimate rights and interests of customers.

2) After-sales service is an important way to improve customer satisfaction and loyalty, is an important part of high quality management and development, the company will adhere to the principle of "customer-centered", and strive to achieve pre-sale, sale, after-sales service full coverage, improve service quality, improve customer satisfaction and product praise, at the same time strengthen service, "timely service", "tracking service", "full service", "lifelong service", "lifelong service". At the same time, strengthen the service, "timely service", "tracking service", "full service", "lifelong service" into the hearts of every employee of the company, and further strengthen the company's reputation and brand image.

3) After long-term accumulation and precipitation, China Railway Equipment Company has formed a relatively stable team with professional composite technology and high-quality management talents.

China Railway Electrical Equipment Company has a key after-sales service team including technology, safety quality, sales and other backbone forces, responsible for product installation, after-sales quality inspection and other irregular return visit and inspection, check installation and product quality problems, and timely feedback to production. In the process of project construction, arrange qualified service personnel to visit the site, listen to users' feedback carefully, and answer users' questions. After the implementation of the product, we keep close contact with users, regularly check the product performance, provide users with product maintenance services, and review the plan on schedule.

4.1.4 Brand Image Differentiation

In 2021, the projects of "Rigid Network Temperature Compensation Device" and "Ratchet Compensation Device" won the first prize and second prize of "High Promotion Value Patent of Engineering Construction Industry" respectively; the project of "Research on Rigid Network Speed Technology of China Tianshan Tunnel" was won the first prize of "Science and Technology" of China Railway Urumqi Bureau Group Co., Ltd.; the products of electrified Railway " was selected in the sixth batch of Industry and Information Technology and China Federation of Industrial Economy.

After long-term market development and brand construction, China Railway Electric Equipment Company has been widely recognized by customers, peers and the public with the image of "advanced technology, reliable quality and excellent service", and its brand influence is obvious. With the improvement of technological innovation and service level, China Railway Electric Equipment

Company will further strengthen the brand construction and brand management, and enhance the company's influence and brand value.

4.1.5 Product Price Differentiation

China Railway Electrical Equipment Company should strengthen price supervision and improve flexibility. The price of high-speed electrified railway equipment of China Railway Electrification Bureau is mainly determined by the bidding company, but China Railway Electric Equipment Company can improve the price competitiveness through the following strategies.

1) China Railway and Electrical Equipment Company provides services to a number of high-speed railway companies, most of which are state-owned enterprises, such as China Railway Transportation Company, Shanghai High-speed Railway Transportation Company, Guangzhou High-speed Railway Transportation Company, etc. These companies mainly purchase high-speed railway electrical equipment through public bidding. After the release of the bidding information, the Equipment Company of China Railway Electrification Bureau shall organize the marketing personnel to collect the information of the bidding project in various parties, understand the requirements of the bidding project, and formulate accurate policies for the business situation. At the same time, check the history of the project subject to tender purchase price, evaluate competitors quotation, mainly on the previous project bid analysis and collection, and further analyze the evaluation part, determine the scope of our bid, finally to the company management, sales management, sales team and external experts open the simulated bidding page, in the bidding documents, according to the bid evaluation and review rules, provides some emergency, to ensure that the winning seamless docking.

2) High-speed rail electrical equipment procurement, installation, operation and maintenance need a lot of money, directly related to the company's cash flow, in order to improve the price competitiveness of China railway electrification bureau equipment company, China railway electrical equipment company can develop flexible payment methods to improve the competitiveness of the company, such as customer deferred payment system, China railway electrical equipment company also by reducing the customer part of the installation, operation and maintenance costs and improve the service level, to ensure that your company's products are the most cost-effective.

3) For private enterprises, the package price can be used in procurement. For example, the standardized one-time payment can be reduced by 50%, the installment payment can be reduced by 60%, etc., to achieve the price differentiation of electrical equipment on the basis of standardization.

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Appendix A Questionnaire of China Railway Electric Equipment Company

Dear experts:

shalom! To be able to grasp the competitiveness of China railway electric company, the questionnaire survey, survey includes four aspects, respectively is the company's internal resources, core competitiveness, facing the macro environment, competitive environment, etc., to grasp the company's internal factors and external factors evaluation results, so as to improve the competition of China railway electrical equipment company.

(1) What is your degree?

Bachelor Master Doctor

(2) Is your major related to the industry in which China Railway Electrical Equipment Company is located?

Very unrelated Unrelated unclear related very related

(3) When have you been engaged in your industry?

Less than 1 year 1-3 years 3-5 years 5-10 years 10 years and more

(4) Do you think the product system of China Railway Electric Equipment Company is complete?

Very incomplete incomplete not clear complete very complete

(5) Do you think the product system of China Railway Electric Equipment Company is complete?

Very incomplete incomplete not clear complete very complete

(6) Do you think the product technology of China Railway Electric Equipment Company is leading?

Very behind behind not clear ahead very ahead

(7) Do you think the products of China Railway Electric Equipment Company are of high quality?

Very low low unclear high very high

(8) Do you think the industry brand of China Railway Electric Equipment Company has an advantage?

No advantage no advantage not clear has advantage very advantage

(9) Do you think the talent team of China Railway Electric Equipment Company has an advantage?

No advantage no advantage not clear has advantage very advantage

(10) Do you think the financing capacity of China Railway Electrical Equipment Company is strong?

Very strong strong is not clear weak is very weak

(11) Do you think the operation of China Railway Electrical Equipment Company depends on the rail and urban rail transit industry?

Very dependent dependent not clear independent very independent

(12) Do you think China's policies support the development of the railway electrical equipment

industry?

Very support support not clear does not support very unsupport

(13) Do you think China's high-speed railway is conducive to leading technology enterprises?

Is very good for is good for is not clear is bad for is very bad for

(14) Do you think China's urban rail transit has entered the fast lane of development?

Has already entered into is not clear did not enter at all

(15) Do you think the railway and urban railway investment of China Railway Electrical Equipment Company is greatly affected by the national policies?

Very large large is not clear small is very small

(16) With the rapid development of the industry, Do you think China Railway Electric Equipment Company needs to maintain a high level of research and development capability?

Very needed needs is not clear does not need is very unnecessary