

Analysis of the Financial Status of New Energy Enterprises based on the Harvard Analytical Framework

-- Taking Company A as an Example

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Abstract

Based on the Harvard analytical analysis framework, this paper conducts a comprehensive and systematic analysis of the development status and operating results of the company from a strategic perspective, absorbs qualitative and quantitative analysis methods, makes the analysis more in-depth, and shows a profound understanding of enterprises in the new energy industry. This paper selects Company A as the research object, based on the current situation of the industry, relying on the Harvard analysis framework, and using the company's operating data from 2017 to 2020 to conduct a comprehensive analysis of the company from four perspectives: strategy, accounting, finance, and prospects, so as to provide the company with useful advice.

Keywords

Harvard Analytical Framework; New Energy Companies; Financial Analysis.

1. Introduction

In the context of the 14th Five-Year Plan, the dual-carbon goals based on carbon neutrality and carbon peaking have become the indicator of future green development, and the new energy industry has thus shouldered a greater historical responsibility. Focusing on the concept of green development, new energy vehicles have become the focus of attention in the industry, and the industry in which the cathode material of lithium-ion batteries as its core component is located is also facing great changes. Company A is a leader in the production of ternary materials, successfully listed on the Science and Technology Innovation Board, and entered the hall of honor of unicorn enterprises. Based on this background, this article will take Company A as an example and use the Harvard analytical framework to conduct a comprehensive and systematic analysis of it to understand its development logic and future prospects.

2. Industry Status

2.1. The Size of the New Energy Market is Growing Steadily

The new energy industry is an emerging industry that has received key support from the country, and is currently in a stage of rapid development. According to data, in 2020, the scale of Chinese new energy market has reached 933.5 billion yuan, and the future market scale will exceed 100 billion yuan. The overall development trend of the new energy industry is stable and improving, which is the basic guarantee for the rapid development of ternary materials.



Figure 1. Statistics of China's new energy market size from 2016 to 2021

2.1.1. Ternary Materials Industry Competition Intensifies

From 2015 to 2020, the output of ternary materials in China has grown at an alarming rate, from 56,000 tons to 210,000 tons, which fully demonstrates the unstoppable development momentum of this field. However, it is accompanied by changes in the industry competition pattern, and the oligopolistic competition in the industry is becoming increasingly fierce.

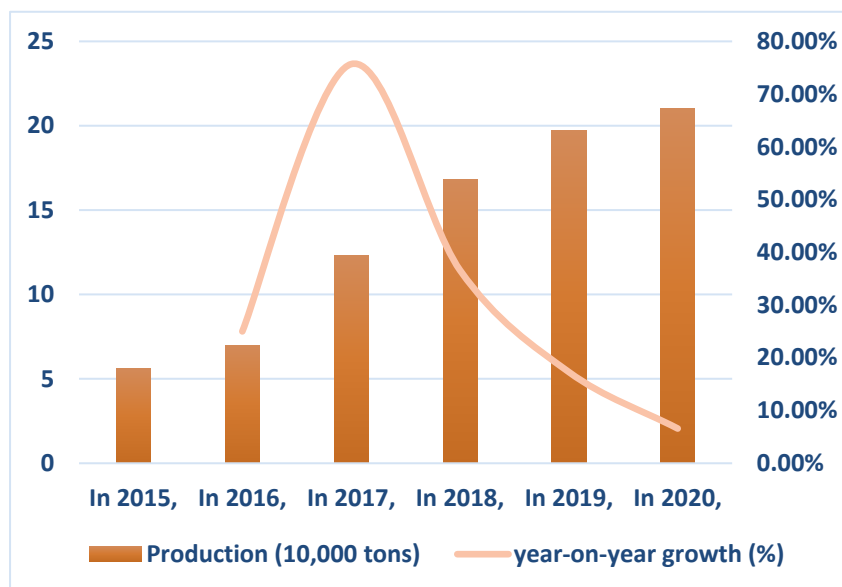


Figure 2. Trend chart of China's ternary material output from 2015 to 2020

2.1.2. Market Concentration is Gradually Increasing

From 2018 to 2020, the market concentration of domestic ternary material production has remained at a high level and showed a slight upward trend. As of 2020, it has reached 77.4%. It can be seen that the market concentration has reached 77.4%. It can be seen that the market concentration has reached a very high level.

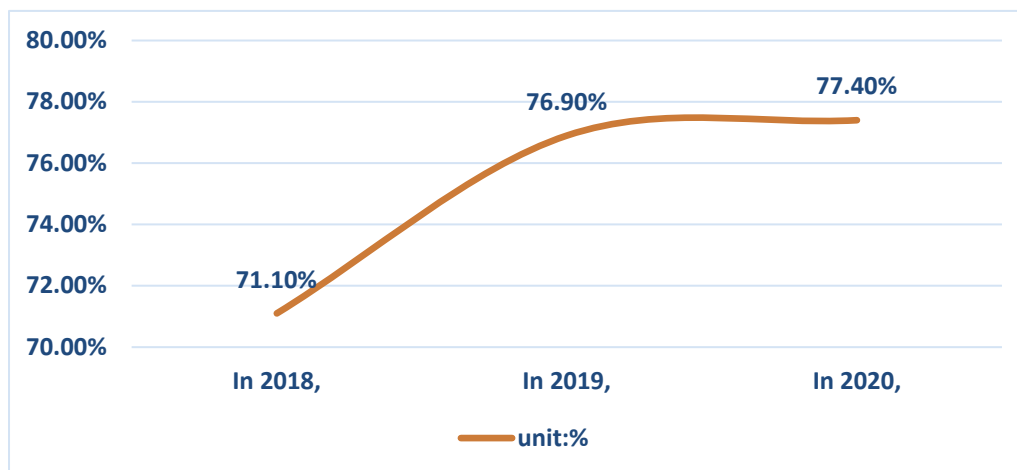


Figure 3. Trend chart of market concentration of China's ternary material production from 2018 to 2020

2.1.3. The Share Gap of the Head Manufacturers is Small

At present, there is little difference in the share of the head enterprises of ternary materials in China. Among them, Company A ranks first, with a market share of 14% in 2020; while the second-ranked company has a market share of 11% in 2020, and there is only a slight gap of 1% between companies ranked after this.

3. Harvard Analytical Framework

The Harvard analytical framework first originated in the United States, which can gain insight into the financial situation of enterprises from a strategic perspective, help enterprises understand the reality, and point out the way for the development of enterprises.

3.1. Strategic Analysis

With the implementation of the national dual carbon goal and the international consensus on carbon governance, with the improvement of lithium-ion battery technology and the rapid development of related auxiliary facilities, the growth rate of Chinese new energy vehicle sales has gradually accelerated. The demand for ternary materials is also becoming more and more urgent.

3.1.1. PEST Analysis

In order to have a deep understanding and insight into the macro-environmental conditions in which enterprises are located, this paper uses the PEST analysis method to conduct an in-depth discussion on the policy, economic, social and technological environment, and obtains the following results:

① Policy environment

The country continues to promote carbon emission policies, and carbon peaking and carbon neutrality have become important development goals. At the same time, the state maintains a supportive attitude towards the new energy industry and provides policy incentives to promote the vigorous development of the industry.

② Economic environment

The negative impact of the epidemic is gradually fading, and the economy is gradually recovering. At the same time, Company A also successfully listed on the Science and Technology Innovation Board and obtained effective financing channels.

③ Social environment

The majority of residents' awareness of environmental protection has increased, and they are more willing to accept new energy downstream products. Energy conservation and emission reduction has also become a new consensus, which will help the new energy industry.

④ Technical environment

As lithium battery technology matures, the industry's demand for ternary materials has become more urgent. The key technologies of the industry have been promoted to a large extent, and the conditions for mass production have been gradually achieved.

3.1.2. SWOT Analysis

In order to gain an in-depth understanding of the company's internal and external competitive environment and development status, this paper adopts the SWOT analysis method to interpret Company A.

① Advantages

The company has an advanced management technology development team, technological advantages of core products, and a stable upstream and downstream industrial chain layout.

② Disadvantages

The company's accounts receivable management risks are gradually increasing, and at the same time, the products and operation models are too simple, and there is a risk of patent technology being infringed.

③ Opportunity

The Chinese proposes dual-carbon goals with the theme of carbon peaking and carbon neutrality, and provides preferential policies for new energy companies. The popularity of new energy vehicles and the continuous development of related supporting facilities have provided the company with a broad market space. At the same time, the dividends of the new energy industry attract a large influx of funds.

④ Threats

The competition in the industry is becoming increasingly fierce, and the share gap between the industry's leading manufacturers is very small. In addition, the industry's regulatory measures are becoming more and more stringent.

3.1.3. Porter's Five Forces Analysis

The existing competitors in the industry are generally more competitive. Although the market share of Company A ranks first in the ternary material industry, the gap with other leading manufacturers is very small, and it has not formed a subversive competitive advantage. At the same time, suppliers and buyers are relatively fixed, and there are many manufacturers to choose from in the industry, so their bargaining power is also relatively strong. In this regard, Company A is at a disadvantage. Company A's main product, the ternary material, has a great threat of substitution, and the development of some new materials is likely to replace it. As for the threat of new entrants in the industry, it is still relatively small, mainly due to the strict industry norms and the intensification of industry barriers.

Overall, from a strategic point of view, the company maintains a relatively dominant position, but this advantage has not formed a subversive situation. The company should be prepared for danger, promote technological innovation and business model innovation, so as to establish a more leading industry dominant position.

3.2. Accounting Analysis

3.2.1. Accounts Receivable Analysis

It can be seen from the above table that in recent years, Company A's accounts receivable and accounts receivable have maintained a high amount. At the end of 2019, the company's main customers' repayment ability was in doubt, and Company A has major problems with accounts

receivable, the overdue accounts and overdue bills of exchange that have expired and unpaid bills of one company alone have reached 206.4 million yuan, and the risk of bad debts is huge, which brings a warning to the company's accounts receivable management. The crisis gradually calmed down, and the proportion of bills receivable and accounts receivable in operating income continued to decline, gradually falling out of the high-risk level. However, at the same time, the company's accounts receivable turnover rate is still at a low level, and the accounts receivable turnover days are around 80 days, which shows that the company's ability to recover credit sales is not strong, which may seriously affect the company's capital security, and even break the company's capital chain.

Table 1. Receivables of the Company from 2017 to 2020

Specific indicators	In 2020	In 2019	In 2018	In 2017
Notes receivable and accounts receivable (RMB 100 million)	8.142	10.25	17.46	9.305
Operating income (RMB 100 million)	37.95	41.9	30.41	18.79
The proportion of operating revenue	21.45%	24.46%	57.42%	49.52%
Accounts receivable turnover rate (times)	4.72	4.27	3.29	4.92
Accounts receivable turnover days (Days)	77.33	85.48	110.94	74.19

3.2.2. R&D Investment Analysis

Table 2. R&D investment of the Company from 2017 to 2020

Specific indicators	In 2020	In 2019	In 2018	In 2017
R & D expenses (RMB 100 million yuan)	1.460	1.650	1.199	0.770
Intangible assets (RMB 100 million)	3.226	2.595	2.695	0.161
Net profit (RMB 100 million)	2.093	0.864	2.110	0.272
The proportion of research and development expenses to net profit	69.76%	190.97%	56.82%	283.09%

It can be seen from the above table that since the listing on the Science and Technology Innovation Board, the R&D investment of Company A has increased significantly, and the book value of intangible assets has increased by dozens of times in a few years. The company has invested significantly in the research of cutting-edge technology of ternary materials, and has a significant advantage in patent holdings.

The company has successfully mastered a number of industry-leading core technologies independently developed. As of the end of 2020, the company has more than 100 registered patents at home and abroad, and 29 new invention patents were added during the reporting period of 2020.

3.3. Financial Analysis

3.3.1. Solvency Analysis

Table 3. Solvency analysis of the Company from 2017-2020

Debt solvency indicators	In 2020	In 2019	In 2018	In 2017
current ratio	2.81	2.78	2.78	2.76
quick ratio	2.4	2.36	2.32	2.15
Asset-to-liability ratio of (%)	26.81	26.18	26.55	29.55

According to the company's solvency analysis indicators, the company's current ratio and quick ratio have been stable at a high level, exceeding 200%, indicating that the company's debt repayment ability is strong and the short-term debt repayment risk is small. In addition, the company's asset-liability ratio has been maintained at a low level, indicating that the company's

long-term operating risks are small, but a low asset-liability ratio may also make it difficult for the company to exert its strong leverage.

3.3.2. Operational Capability Analysis

Table 4. Operational Capability analysis of the Company from 2017-2020

Operationalg Capability indicators	In 2020	In 2019	In 2018	In 2017
Accounts receivable turnover rate (times)	4.72	4.27	3.29	4.92
Inventory turnover rate (times)	5.68	6.85	6.05	6.5
Current asset turnover rate (secondary)	0.95	1.25	1.36	1.61
Fixed assets turnover rate (times)	3.2	4.37	5.61	8.6
Total asset turnover rate (times)	0.63	0.83	0.94	1.26

According to the company's operational capability analysis indicators, the company's inventory turnover rate has been maintained at a high level, indicating that the company's assets have high liquidity due to smooth sales. Inventory turns into cash quickly, but it is necessary to be alert to the situation that inventory is insufficient, and products are out of stock if this indicator is too high.

In terms of the company's accounts receivable turnover ratio, it has fluctuated in the past four years, but it has not improved significantly. It is still above a low level, and there is a high risk of capital management, which is easy to cause bad debts and capital chain problems.

3.3.3. Profitability Analysis

Table 5. Profitability analysis of the Company in 2017-2020

Profitability indicators	In 2020	In 2019	In 2018	In 2017
Operating profit margin of (%)	6.68	2.36	7.71	2.55
net profit rate (%)	5.62	2.09	7	1.66
gross profit rate (%)	12.18	14	16.62	14.81
Return rate on total assets: (%)	3.56	1.73	6.6	2.09

According to the company's profitability analysis indicators, the company's operating profit rate and net profit rate have shown a positive trend in recent years, but the gross profit rate has shown a downward trend, which is lower than the average level in the industry. The advantages are not enough to bring a higher gross profit margin, and there is a lot of room for development.

3.3.4. Growth Ability Analysis

Table 6. Growth ability analysis of the Company in 2017-2020

Growth ability indicators	In 2020	In 2019	In 2018	In 2017
Operating revenue growth rate (%)	-9.43	37.76	61.88	112.24
Total assets growth rate (%)	4.88	37.21	94.88	174.3
Operating profit growth rate (%)	156.66	57.92	390.24	472.67
Net profit growth rate (%)	143.73	58.94	583.92	352.63
Net asset growth rate (%)	3.96	37.79	103.79	568.33

According to the company's growth ability analysis indicators, the company's various growth rates from 2017 to 2018 were high, but the watershed in 2019 appeared. When faced with the test after listing on the Science and Technology Innovation Board, the company's revenue and profits were difficult to maintain rapid growth, but in 2020, facing the negative effects of the epidemic, the company still showed a growth in profits, which fully demonstrated the company's huge development potential. It is believed that the company will show stronger growth ability in the post-epidemic era when the negative effects of the epidemic gradually

subside.

3.4. Prospect Analysis

In recent years, the domestic new energy industry has developed rapidly. Company A, which is a manufacturer of ternary materials for lithium-ion batteries, the core components of new energy vehicles, has begun to take shape and has broad development prospects. However, the competition in the industry is still fierce. In order to turn the leading advantage of market share into a subversive and overwhelming advantage, it is necessary to pioneer the world, actively innovate the existing business model and increase investment in technology research and development, so as to obtain more technological advantages, and achieved a leap-forward lead in the fierce market competition.

4. Development Proposals

4.1. Pay Attention to Talent Training and Strengthen R&D Investment

Absorb and cultivate outstanding talents in many fields, provide intellectual support for the company's technology research and development, production operations, marketing, etc., and promote the company's long-term development. At the same time, innovate the talent management mechanism, strengthen the organization and team building, and improve the incentive mechanism, including organizational setup, talent training, cultural promotion and partnership system. In terms of R&D investment, increase investment to obtain better returns, achieve industry leadership in R&D investment to expand the leading edge in the technical field, and fully realize the advantages of science and technology board companies in R&D.

4.2. Focus on the Main Business and Get Involved in Diversified Operations

The company needs to focus on its main business, achieve continuous tackling, and maintain and expand its leading edge in the industry. But at the same time, enterprises also need to carry out diversified strategic transformation, take advantage of the relevance of technology and the versatility of production lines, expand business related to electrode materials and even more new energy materials, and absorb the advantages of upstream and downstream industrial chains to build new Energy industry clusters, fully involved in diversified operations, to obtain more profit growth points.

4.3. Expansion of Development Space through Internationalization Strategy

With the general consensus on carbon emission governance in the world, new energy materials will have a bright future in the international market. The company can rely on the original advantages of factories in China and South Korea at home and abroad to expand production and capacity, and build factories in more countries with low labor and resource costs, build an international network layout, and expand to more countries and broader markets. The company should try to enter and give full play to the advantages of the internationalization strategy, expand the development space of the enterprise, and achieve better and faster growth of benefits.

4.4. Promote Technology Application and Achieve Cost Leadership

At this stage, company A's main business has a relatively low gross profit margin. It needs to focus on the research and development and application of its main products, use its technological advantages to continuously reduce costs, increase its gross profit margin, and reduce its sales price. Use the cost leadership strategy to seize the existing market at low cost, especially when developing international markets, to truly achieve cost leadership in the future and improve the overall efficiency of the enterprise.

4.5. Attach Importance to Risk Management and Strictly Control the Capital Chain

Company A needs to strengthen risk management on accounts receivable, so as to strictly control the capital chain. The company needs to establish a scientific and reasonable credit policy, set up a customer credit supervision department, conduct a comprehensive credit evaluation of the company's customers, and give priority to providing products to customers with good credit conditions to prevent large-scale bad debts. The company can also use accounts receivable financing to transfer risks, such as transferring non-overdue bills receivable to other financial institutions, thereby relieving their own capital pressure and improving operational efficiency.

5. Conclusion

According to the Harvard analytical framework, the development trend of company A is good, but due to negligence in risk management, the enterprise has the risk of accounts receivable, and the advantages of the product are not obvious. At this stage, in order to improve the profitability of the enterprise, the enterprise should focus on the main business, implement the differentiation strategy, and enter into diversified new business fields, so as to create more growth points for the enterprise, and at the same time strengthen the cost control, make full use of idle funds. At the same time, the company also needs to make full use of its own resources and advantages in the new energy industry to develop a promising international market. The company also should increase talent training, increase investment in technical research, improve scientific and technological strength, build a leader in the science and technology innovation board, and create a new myth of unicorn enterprises.

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