

# The Study on Mergers and Acquisitions of Listed Companies and Their Impairment Risks

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## ABSTRACT

With the increasing number of listed companies in China in recent years, the wave of mergers and acquisitions has intensified, and the number of companies that generate huge amounts of goodwill has shown explosive growth. There are many examples that have suffered huge impairment losses of goodwill, and there are many enterprises that seem to be calm but face the hidden danger of huge impairment of goodwill. In view of the above-mentioned reasons, research is conducted on the example of the impairment of goodwill caused by the acquisition of OptimumNano by J&R Optimum Energy. This paper also analyses the reasons behind the huge impairment of goodwill by the case company. The experiences and lessons of M&A cases encountered in the implementation of goodwill accounting standards are explored and recommendations are provided.

**Keywords:** Merger, Acquisition, Impairment of goodwill, Risk, Listed company.

## 1. INTRODUCTION

The M&A market never lacked a spotlight. At the beginning of 2020, the market continues to pay attention to the M&A market. In 2019, in the context of the implementation of multiple policies of the M&A and restructuring review mechanism, the M&A and restructuring market was even brighter. According to relevant data, in 2019, the Chinese corporate M&A market completed a total of 2782 M&A transactions, with a year-on-year increase of 5.26%.

Although the wave of corporate mergers and acquisitions continues to grow stronger, it is also necessary to pay attention to the two sides of mergers and acquisitions. On the one hand, if mergers and acquisitions are successful, it will contribute to the enhancement of corporate value. On the other hand, if the acquired company fails to fulfil its performance commitments, the huge amount of goodwill will lay hidden dangers to the company's performance and cause Goodwill impairments. Because goodwill occupies a relatively high proportion of corporate owners' equity, the provision of impairment will have a significant impact on the level of corporate financial risk. Therefore, this article will discuss

and study the issue of impairment of goodwill in mergers and acquisitions of listed companies, and give feasible recommendations.

## 2. RELATED CONCEPTS AND BASIC THEORIES

### 2.1 The Concept of Goodwill Impairment

The impairment of goodwill is the determination of the relevant impairment loss after the company conducts the impairment test on the goodwill generated in the merger [1]. The goodwill of mergers and acquisitions is formed by non-identical control, and the recoverable amount of the corresponding assets and asset groups does not exceed the value of the book itself. There is a phenomenon of goodwill impairment [2].

### 2.2 Subsequent Measurement of Goodwill

When conducting the impairment test of goodwill, the recoverable amount and the book value should be obtained and compared [3]. If the former is lower than the latter, the impairment loss should be recognized [4]. However, according to the unique nature of goodwill, its recoverable amount must be measured in combination with

asset groups and portfolios [5][6]. The impairment test of goodwill can be summarized in the following specific procedures.

- Reasonably confirm the asset group or combination of asset groups related to goodwill.
- The book value of the goodwill formed by the business combination shall be allocated to the relevant asset group or combination of asset groups according to a reasonable distribution method from the date of purchase to confirm the book value of the asset group or combination of asset groups containing goodwill.
- Confirm the recoverable amount of the asset group or combination of asset groups containing goodwill.
- Confirm the impairment loss of goodwill.

### **3. INTRODUCTION TO THE CASE OF J&R OPTIMUM ENERGY'S ACQUISITION OF OPTIMUMNANO**

#### **3.1 Basic Introduction of Both Parties to the Merger**

##### *3.1.1 Introduction of the Acquirer J&R Optimum Energy*

The full name of the acquirer J&R Optimum Energy Co., Ltd. is Shaanxi J&R Optimum Energy Co., Ltd., formerly Shaanxi Jianrui Fire Co., Ltd., which was established on April 30, 2005. Its main business is the production and sales of various fire extinguishing devices and fire alarm devices, carrying out the fire protection engineering construction business.

##### *3.1.2 Introduction of the Acquired Party OptimumNano*

Shenzhen OptimumNano Battery Co., Ltd. was established in 2002. Its main products are lithium phosphate batteries, development and innovation, and production and sales of starting power supplies for automobiles. It is one of the first companies that provide domestic energy storage system solutions to achieve mass production and large-scale application.

#### **3.2 M&A Background**

The current situation of the firefighting industry in which J&R Optimum Energy is located is not optimistic. The firefighting industry has overcapacity and fierce competition, which has caused the entire industry and the enterprise to rise in costs, reduce profits, and face many difficulties. In addition, for several years since J&R Optimum Energy was listed on the Shenzhen Growth Enterprise Market in September 2010, the company's operating performance has been mediocre and its profitability has been poor. At the same time, due to the strong support and development of the state, and the large number of tax reductions and fiscal subsidies and other active measures to encourage the development of new energy vehicles, the new energy vehicle industry has a bright future.

#### **3.3 M&A Transaction Results**

##### *3.3.1 Confirmation of M&A Goodwill*

Kunyuan Asset Appraisal Co., Ltd. was entrusted by the acquirer J&R Optimum Energy to evaluate the market value of the total equity of OptimumNano Co., Ltd. on April 6, 2016. This evaluation mainly adopted the asset-based method and the income method to determine the valuation after comprehensive analysis of the results.

The value of all shareholders' equity calculated by the income method is 5,238,660,000 yuan, and the appreciation rate is 662.98%. The final valuation of the acquired party was 5.2 billion yuan. The goodwill confirmed in the merger was approximately 4.6 billion yuan, and the amount of goodwill accounted for 88.46% of the total consideration. As shown in "Table 1":

**Table 1. 2016-2019 Balance Sheet of J&R Optimum Energy**

<b>2016-2019 Balance Sheet of J&amp;R Optimum Energy Unit: Ten Thousand Yuan</b>				
<i>Date</i>	2019/12/31	2018/12/31	2017/12/31	2016/12/31
Monetary funds	52919	47789	159041	140012
Accounts receivable	8352	891145	843808	538220
Inventory	3184	218840	596977	316068
Goodwill	--	5417	22032	483888
Total current assets	110492	1303009	2167082	1238786
Total assets	124907	1760056	2952680	2111631
Total liabilities	68621	1740002	2543313	1326147

a Data source: 2015-2019 balance sheet report of J&R Optimum Energy Co., Ltd.

**Table 2. The fulfillment of OptimumNano's performance commitments from 2016 to 2018**

<b>2016-2018 OptimumNano Performance Commitment Fulfillment Unit: Ten Thousand Yuan</b>				
<i>Year</i>	<i>Commitment to cumulative net profit</i>	<i>Actual cumulative net profit</i>	<i>The completion rate</i>	<i>Whether to fulfill the performance commitment</i>
2016	40,350.00	42,600.00	105.58%	Yes
2017	90,900.00	88,076.37	96.89%	No
2018	151,800.00	-347,472.32	-228.90%	No

a Data source: 2016-2018 financial report of J&R Optimum Energy Co., Ltd.

### 3.3.2 *The Fulfilment of OptimumNano's Performance Commitments and the Results of Mergers and Acquisitions*

It can be seen from "Table 2" that in the initial stage of the successful acquisition of OptimumNano, KenruiWongeng has gained a lot. The company's business scale has expanded rapidly, and its diversified development strategy has been realized. The income level and profitability have been significantly improved. In 2016, OptimumNano successfully reached the performance commitment line with a performance compliance rate of 105.58%. J&R Optimum Energy has a total revenue of 3.82 billion yuan and a net profit of 429 million yuan. Compared with 2015, the growth rate is 557.03% and 1059.29%. Its stock price rose from 5.72 yuan to 13 yuan in 2016, and the stock price doubled.

However, in 2017, OptimumNano's net profit was not fulfilled as promised, only 96.89% was completed. The attributable net profit of J&R Optimum Energy plummeted from 425 million yuan in the previous year to -3.68 million yuan. Although the interpretation of OptimumNano's failure to complete 2017 performance is the combined impact of multiple factors, including the country's adjustments to the new energy vehicle industry and OptimumNano's excessive capital chain shortage and slow remittance of accounts receivable, the unfinished performance was mainly resulting from the pursuit of business expansion. At the same time, J&R Optimum Energy once again evaluated the value of OptimumNano, but the

results of the assessment were not satisfactory. The profit of OptimumNano began to appear in the phenomenon of Waterloo, which was quite different from the current period of the merger. Due to the acquisition of OptimumNano, the confirmed goodwill has obvious signs of impairment, and the prediction of subsequent operations also shows that it cannot fulfil the expected commitment. Therefore, when conducting impairment test on goodwill, out of the principle of prudence, the commercial fame accrued a total impairment of 4.613 billion yuan. The resulting impairment of goodwill directly caused J&R Optimum Energy's 2017 net profit loss of 3.734 billion yuan.

In 2018, the net profit loss attributable to shareholders of the parent company after deducting non-recurring gains and losses was 4.993 billion yuan, and the completion rate of performance commitments reached -228.90%. The explanation for the unfulfilled performance commitment is as follows: The state's policy adjustment for new energy vehicles, the deleveraging policy of the macro environment, and the increased difficulty of OptimumNano's loan renewal in financial institutions, etc., have been combined with OptimumNano in 2018. The phenomenon of overdue debts and serious loss of personnel, along with other factors, have prevented OptimumNano from fulfilling its performance commitments. At this point, the performance promise between J&R Optimum Energy and OptimumNano ended in complete failure.

## **4. J&R OPTIMUM ENERGY M&A GOODWILL AND GOODWILL IMPAIRMENT ANALYSIS**

### ***4.1 Analysis on the Causes of Huge Devaluation of Goodwill***

During the merger, OptimumNano signed a three-year gambling agreement with JinruiWoneng. The content of the agreement was the performance that needs to be achieved in the three years after the merger. However, except for the target net profit in 2016, the target was not met in the other two years. Next, the causes of performance failure will be studied from a macro and micro perspective.

#### ***4.1.1 Macro Reasons***

On the macro environment, the national policy has been adjusted. In 2016, the government issued a new new-energy vehicle purchase policy. Non-individuals can receive subsidies for purchasing new energy vehicles. The subsidies have affected OptimumNano's operating conditions and cash flow, causing operational difficulties. Combined with the previous weak solvency of OptimumNano, the changes in national policies have also had an impact on OptimumNano.

All of OptimumNano's battery business is the production of lithium iron phosphate batteries, but the new policy at the end of 2016 shows that only batteries with a mass density higher than 120Wh/kg can enjoy subsidies, and lithium iron phosphate batteries do not meet the subsidy standard. The country's move is to promote the development of ternary lithium batteries, and OptimumNano has not developed a production line of ternary lithium batteries. It takes a lot of time and money to change the main production and increase the production line of ternary lithium batteries. The loss of government subsidies for OptimumNano is difficult to maintain, which directly leads to a decline in performance. The performance commitment to the gambling agreement is not fulfilled, and the target profit is not reached.

#### ***4.1.2 Micro Reasons***

First, the choice of the target company for mergers and acquisitions is wrong. As a cross-industry diversified merger and acquisition, it is also a typical "snake swallowing elephant" case. J&R Optimum Energy has not maintained its due caution, blindly pursued the industry wave, eager to

solve its own business difficulties, and has insufficient understanding of the new energy industry and has no basis. The macro environment predicts the development direction of the market. Holding an unclear understanding, J&R Optimum Energy has not achieved the desired effect of mergers and acquisitions.

Second, investigation and research are not in place. J&R Optimum Energy's research on OptimumNano is not thorough. OptimumNano had unstable performance before the merger. The large amount of receivables and weak debt solvency all indicate that OptimumNano will not last for a long time of development.

In addition, the transaction is overpriced. Due to factors such as the industry background, the performance bottleneck of the acquirer, and the valuation method described in the previous article, the forecast of OptimumNano's profit level is too high. OptimumNano's performance in the gambling agreement is also planned to be too high. Uncertainty is not fully considered. The risks and industry policy changes in 2016 have not yet been highlighted, and the expected net profit has been achieved. The expected cumulative net profit in 2016 in the gambling agreement is 403.5 million yuan, and the actual completion of 426 million yuan, but the risk has gradually been shown from 2017. In 2017, the estimated net profit of 909 million yuan was actually completed, 88.76 million yuan was actually completed, and the target profit was not reached. In 2018, the actual cumulative net profit of J&R Optimum Energy dropped directly to -381608 million. Naturally, OptimumNano's performance was bleak and difficult to maintain.

Finally, an overly aggressive expansion strategy was adopted. In the 2016 mergers and acquisitions, OptimumNano adjusted its strategy and tried to take advantage of the boom in mergers and acquisitions to achieve greater performance improvement. The excessively aggressive expansion of production scale directly led to a break in the capital chain. In 2017, OptimumNano's short-term borrowings increased by 3.4 billion yuan, and the bills payable increased by 5.2 billion yuan. In addition, the debt solvency of the acquired party was very poor, which caused serious trauma to OptimumNano.

## **5. STANDARDIZE GOODWILL IMPAIRMENT MEASURES**

### ***5.1 Standardizing the Initial Confirmation of Goodwill***

First of all, it is advisable to supervise the independence of the hired evaluation agency personnel. Secondly, even if the current asset structure appraisal party causes losses to the acquiring party, it does not need to make compensation. This system to a large extent condones the status quo of poor evaluation by evaluation agencies, and a system of accountability should be implemented and economic penalties and compensations should be imposed on a proportional basis. Third, the decision of goodwill is based on the difference between the present value of the expected future income and the identifiable net assets. In current mergers and acquisitions, there are often situations in which the recognition of the net assets is not clear and the recognition of goodwill is inaccurate. Therefore, further confirmation is needed on the identifiable net assets.

### ***5.2 Adjusting the Follow-up Measurement Method of Goodwill***

At present, there is no mandatory disclosure of information related to the impairment of goodwill of listed companies in the current standards, and a complete information disclosure mechanism needs to be established. For example, the reasons for impairment, the basis for determining identifiable net assets, etc., need to be compulsorily disclosed. Companies should be punished, which can promote more open and transparent company information, and reduce the risk of fraud, and strengthen the supervision of goodwill.

If the company implements impairment tests, the test results need to be explained in detail. If it is not tested, detailed reasons need to be indicated in the financial statements. Companies that do not perform impairment tests should be controlled, and those companies with poor performance and operating problems must conduct impairment tests. According to this, the third-party asset evaluation agency must continue to pay attention to the annual impairment of listed companies, and ensure that the impairment test disclosed by the company is reasonable and normal, and does not violate the general background. Once abnormal data performance is found, the regulatory agency will focus on the investigation.

The subsequent measurement of goodwill requires a combination of the amortization method and the impairment test method. The goodwill method is a method of amortizing goodwill in each fiscal year based on the perception that goodwill will inevitably be impaired based on the trend of social development. The time and amount of the amortization method are relatively fixed, which reduces the risk caused by the subjective management personnel. The follow-up measurement of the amortization method is also more valuable in the same industry, and better record supervision. Therefore, the amortization method and the impairment test method are scientifically combined. For example, a fixed-term amortization is generally adopted, and the goodwill impairment test is adopted in certain circumstances. The combined method combines the advantages of the two methods, reduces the risk of subjective evaluation and has a relatively fixed amortization method.

### ***5.3 Viewing from the Perspective of Business Management***

#### ***5.3.1 Companies Need To Carefully Choose M&A Targets***

In the case of J&R Optimum Energy's acquisition of OptimumNano, it is a very typical case that a company is affected by a seemingly industry trend background to make aggressive mergers and acquisitions. Enterprises should not blindly follow the trend in mergers and acquisitions. The economic market is changing day by day. The prevailing trend may not prevail in the future. It is too much to believe that the trend is the basis for irrational management decision-making. It is required to take a rational attitude towards industry development and policies. Any industry will inevitably reduce profits after the start-up period and come to a fiercely competitive stage in the near future.

#### ***5.3.2 Feasibility Analysis of the Transaction Plan***

First of all, in terms of transaction prices, it is wise to determine a reasonable transaction price based on the cautious determination evaluation method introduced above, and combine the real corporate conditions and operating characteristics, avoid high-premium mergers and acquisitions, and negotiate with a reasonable price that the company can accept. In the case of the acquisition of

OptimumNano by J&R Optimum Energy, it was a typical case where the snake swallowed elephants at a high premium. J&R Optimum Energy could not bear such a high M&A price by itself, which also brought difficulties to corporate management. In addition, research should also be carried out on the rationality of the possibility of mergers and acquisitions. Excessive transaction prices have greatly increased the level of corporate financial leverage. Companies should not have misunderstandings about their own financial status. Investing too much capital will increase risks.

## 6. CONCLUSION

This paper analyses the standardization of impairment of goodwill and puts forward constructive proposals, including the analysis of the rationality of the assessment in the initial confirmation, the choice of subsequent measurement methods, the degree of disclosure of goodwill information by listed companies, and the perspective of corporate management to avoid the impairment of huge amounts of goodwill.

In the case study of J&R Optimum Energy's acquisition of OptimumNano, it specifically analysed the process of mergers and acquisitions and the results of the merger, and gave a more detailed description of how the huge goodwill of 4.6 billion yuan was formed. J&R Optimum Energy and OptimumNano analysis was also carried out on OptimumNano's performance promise and realization.

The reasons for the huge amount of goodwill are mainly based on the analysis of the company's estimated decision-making errors, the company's own situation, the high premium of mergers and acquisitions, and the analysis of rational analysis and valuation methods. In mergers and acquisitions, the valuation method of a company determines the identifiable net assets, which directly affects goodwill. It is suggested to combine a variety of research methods and make scientific comparisons to avoid omissions caused by different valuation methods. The analysis of the causes of huge goodwill is carried out from the macro and micro levels. The macro level includes government policies and industry prospects, and the micro level refers to the target selection, the degree of investigation, excessive transactions and aggressive strategies.

## AUTHORS' CONTRIBUTIONS

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