

## Study on the M&As Strategies of the Chinese Paper Enterprises\*

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**Abstract:** The output and consumption of paper and cardboard of China ranked first in the world in 2009, but the Chinese paper industry still meets some obstacles such as small enterprise scale, low industrial concentration, high dependence on external raw materials, oversupply of some products, and serious pollution problem etc. A feasible way to solve these problems is to promote enterprise mergers and acquisitions. This article puts forward that Chinese paper enterprises can use backward integration strategy, horizontal integration and cross-border M&As to carry out mergers and acquisitions in the future.

**Keywords:** Paper Industry; Status; Mergers and acquisitions; Strategy

### 1 Introduction

The paper technique is one of the four great inventions of ancient Chinese science and technology, and is also outstanding contribution to the development of world's sciences and cultures. As Chinese important basic raw material industry, paper industry occupies a very important position in the national economy. With the rapid development of Chinese economy, the production and consumption of paper increase quickly, and drives the rapid development of the Chinese paper industry. According to the statistics of China Paper Association, the production of paper and cardboard is 86.4 million tons and the consumption is 85.69 million tons in 2009, which both are more than the United States, and rank first in the world. However, there are still a number of issues in the development of the China paper industry.

Mergers and acquisitions (M&As) become increasingly the important means to adjust the industrial structure, to optimize the stock of resources, and to expand the scale of enterprises. In recent years, with the development of Chinese market, the domestic paper enterprises use more and more M&As in the process of expansion. Based on the analysis of the status of the Chinese paper industry, Xu Hua and Liu Zhifeng (2006) pointed out that paper enterprises can use backward integration strategy, forward integration strategy and horizontal integration strategy to realize integration. Through comparative studying on the cases of domestic paper enterprises' M&As, Zhao Junhao (2008) thought that the M&As of domestic paper enterprises is generally based on three dimensions, that is, industry chain, market and the mode of M&As, and is carried out according to forest pulp and paper industry chain, and is promoted in the mode of horizontal M&As, vertical M&As and mixed M&As. He Huayi (2009) held that the Chinese paper industry is in the later stage of the start-up phase according to the Kearney curve of industry evolution, and horizontal M&As and vertical M&As are the mainstream of the paper industry M&As, and the likelihood of the M&As of strong union is relatively small.

With the increasing integration of the paper industry, and the tight implementation of the policy of the elimination of backward production capacity, the study on the M&As strategy of Chinese paper industry will be benefit to the restructuring of paper industry, and comprehensively enhance the overall level and competitiveness of paper industry, and make the industry really do grow stronger.

### 2 The Analysis of the Status of the Chinese Paper Industry

#### 2.1 The production and consumption of paper and paperboard increased rapidly

Since the reform and opening, the market of paper products develops rapidly and the paper industry has achieved tremendous progress after years of development. China has become the world's largest paper-making country, and the production continues to expand. Table 1 lists the Chinese production of paper and paperboard from 2001 to 2010.

It is generally agreed that the growth rate of the consumption of paper and paperboard is fairly equal to the growth speed of gross domestic product. According to the statistics of China paper association, the average annual growth of the consumption of paper and paperboard is 10.48% from 2000 to 2008, which is higher than that of GDP at the same period. Table 1 presents the Chinese consumption of paper and paperboard from 2001 to 2010.

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**Table 1 The Chinese Production and Consumption of Paper and Paperboard in 2001-2010**

Year	Production(million)	Growth rate	Consumption(million)	Growth rate
2001	32.00	4.92%	36.83	3.02%
2002	37.80	18.13%	43.32	17.62%
2003	43.00	13.76%	48.06	10.94%
2004	49.50	15.12%	54.39	13.17%
2005	56.00	13.13%	59.30	9.03%
2006	65.00	16.07%	66.00	11.30%
2007	73.50	13.08%	72.90	10.45%
2008	79.80	8.57%	79.35	8.85%
2009	86.40	8.27%	85.69	7.99%
2010	92.70	6.5%	91.73	7.05%

Data Source: China paper Yearbook, China Paper Association.

### 2.2 The scale of enterprises is small

At present, there are a large number of Chinese paper enterprises, and the scale of enterprises is relatively small. According to the statistics of China Paper Association, there are more than 3700 paper enterprises at the end of 2009, and the average scale is only 2.3 ten thousands. Only about 100 enterprises have the annual production capacity more than one hundred thousand tons, of which only 6 ones exceeds two million tons, only 8 ones more than two million tons, and only 16 more than five hundred thousand tons. In 2010, only 9 enterprises have exceeded 1 million tons in scale and the output of Nine Dragons Paper (Holdings) Limited, which is the largest one, reached 6.52 million tons.

But according to the rank of global 100 paper enterprises published by PPI, there are 4 enterprises whose production capacity are more than 10 million tons, 19 more than 5 million tons, 43 more than 5 million tons, 87 more than one million tons. The production of the American International Paper, which is the largest one in the world, is 18.59 million tons.

The production of the world's largest paper enterprise reaches 18.59 million tons, while the production of the Chinese largest one is only 6.52 million tons. The enterprises whose production capacity is more than 1 million tons are still less, and only vital few are more than 3 million tons, so the M&As of paper industry is inevitable.

### 2.3 Industrial concentration is low

As the scale of enterprises is small, the industrial concentration of the Chinese paper industry is much low. Considering the importance of indicators and the availability of data, we compute the industry concentration according to total annual production of the Chinese paper industry. Table 2 presents the calculation result.

As we see from Table 2, the industry concentration of the Chinese paper industry is gradually increasing, but still low. In 2009, the production of the four largest enterprises accounts for only 17.8% of the nationwide, and the top ten enterprises account for only 27.4%. There is still quite a big gap compared with the developed countries such as Europe and the U.S, whose market share of the top five paper enterprises is more than 50%.

**Table 2 The Industry Concentration of the Chinese Paper Industry from 2004 to 2009**

Concentration	2004	2005	2006	2007	2008	2009
CR <sub>3</sub>	0.09	0.104	0.114	0.123	0.131	0.151
CR <sub>4</sub>	0.107	0.125	0.138	0.153	0.160	0.178
CR <sub>5</sub>	0.125	0.144	0.157	0.174	0.181	0.203
CR <sub>10</sub>	0.184	0.21	0.227	0.245	0.255	0.274

Data Source: calculation according to "China's Paper Industry Annual Report 2002-2009"

According to the theory about industry evolution put forward by Graeme k. Deans, Fritz Kroeger, Stefan Zeisel, who are management expert of Kearney management consulting firm, the Chinese paper industry currently has the characteristics of the end of start-up stage. Then, the Chinese paper industry will enter the scale stage according to the law of industry evolution, and there are a lot of M&As in this process.

## 2.4 High dependence on foreign raw materials

The consumption of pulp increases with the growth of paper and paperboard. The raw material of the Chinese paper industry comes from both domestic and overseas market, and the structure of raw material is diversification, including wood pulp, non-wood pulp, waste paper pulp, etc. China forest coverage is low and forest volume is less, so the required wood pulp most depends on imports. Table 3 shows the evolution of the raw material structure of the Chinese paper industry in 1990-2009. As shown in the table, in 2009, 35.2% of domestic consumption of pulp relies on import, and the external dependence degree of wood pulp is 73%. According to the customs statistics, in 2010, China imported 24.352 million tons of waste paper, and 11.37 million tons of wood pulp. In the first four months of 2011, China imported a total quantity of 4.98 million tons of pulp, increased by 27.7%. It can be seen from the above figures that the Chinese paper industry has a high dependence on foreign pulp.

Under the situation of the paper industry heavily depending on imported raw materials, and large amount and high price of the imported pulp, it is a key issue to solve the problem of raw materials for sustainable development of paper industry.

**Table 3 The Evolution of Raw Materials Structure (Unit:million)**

	1990	1995	2000	2005	2006	2007	2008	2009
Domestic wood pulp	1.50	2.01	2.00	3.71	5.26	6.05	6.72	5.51
Imported wood pulp	0.54	0.82	3.35	7.59	7.96	8.45	9.52	13.15
Non—wood pulps	7.97	11.36	11.16	12.60	12.90	13.02	12.97	11.75
Domestic waste pulp	3.71	7.67	8.43	14.48	18.10	22.12	25.03	27.36
Imported waste pulp	0.21	0.73	2.97	13.62	15.70	18.05	19.36	22.00
Total	33.83	42.54	47.91	72.05	79.98	87.76	93.68	99.86

Data Source: China paper Yearbook, China paper industry 2009 annual report

## 2.5 The supply of some product exceeds demand

At present, the Chinese paper industry has entered the era of oversupply, but there is still structural differentiation between each sub-industry. Table 4 shows the production and consumption of the main products of the Chinese paper industry in 2009 and 2010. As we can be seen from table 4, some products such as newsprint, coated printing paper, life paper, and special paper have already shown the situation of surplus.

## 2.6 Pollution hindering sustainable development

The paper industry is the main pollution emission and also the major energy consumer. It emits 20% of industrial wastewater and more than 30% of the COD at an annual contribution of 1% of the gross industrial output value. The water used by per ton of paper is up to 100 cubic meters, which 10 times of the world average level.<sup>5</sup> The paper industry ranked the first in the top five water consumption industries, and is consumes nearly 10% of industrial water. Therefore, the paper industry is the key industry to pollution control.

**Table 4 The Production and Consumption of the Main Products in 2009 and 2010 (Unit:million)**

Product	Production		Consumption	
	2009	2010	2009	2010
Total	86.40	92.70	85.69	91.73
1. Newsprint	4.80	4.30	4.61	4.23
2. Noncoating printing and writing paper	15.10	16.20	14.97	15.90
3. Coated printing paper	5.90	6.40	4.63	5.49
Copperplate paper	5.00	5.55	3.99	4.80
4. Life paper	5.80	6.20	5.29	5.67
5. Packing paper	5.75	6.00	5.87	6.12
6. White paperboard	11.50	12.50	11.60	12.54
Coated white paperboard	11.00	12.00	11.10	12.04
7. Liner board	17.30	18.80	18.09	19.46
8. Corrugated Medium	17.15	18.70	17.58	18.89
9. Special paper and cardboard	1.50	1.80	1.44	1.64
10. Other paper and cardboard	1.60	1.80	1.61	1.79

Data Source: <http://www.china-papernet.com>. China paper association, The statistics of the Chinese production and consumption of paper and cardboard in 2010. 2010.6.3 (in Chinese)

<sup>5</sup> <http://www.china-papernet.com>. the paper industry in 2011: Intergtation and Upgrade[Z]. 2011.12.17 (in Chinese)

Since 2007, in order to control environment pollution caused by the paper industry, many policies, such as the policies on energy saving, the policies on the elimination of backward production capacity, the policy of paper industry development, the new standards on pulp and paper industry water pollutant discharge, and the light industry restructuring and revitalization plan, all put forward the requirements of pollution treatment and elimination of backward production capacity to the paper industry. The relevant departments also vigorously advance the work of energy conservation and emission reduction. According to the information from the Ministry of Industry and Information Technology, the eliminated Chinese backward paper production capacity is 10.3 million tons during the Eleventh Five-Year. In May 2011, the target to eliminate backward paper production capacity decomposed by the Ministry of Industry and Information Technology is 7.445 million tons.

In recent years, along with the increasing demands of environmental protection, the management department continuously improve the scale of new projects and the barriers of environmental protection, and the strengthen on eliminating backward production capacity continues to increase, both will promote M&As in the paper industry more and more frequent, and make the Chinese paper industry develop healthy and orderly in the environment of low carbon economy.

### **3 M&As Strategies of the Chinese Paper Industry**

Although in recent years, the Chinese paper industry has achieved rapid development, and China has become the world's largest paper country, and the total production continues to expand, the Chinese paper industry still have many problems. The whole industry faces many pressures as industrial restructuring, raw materials, energy conservation, elimination of backward production capacity, and a feasible way to solve these problems is to promote M&As. In recent years, along with the rapid development of the paper industry, there are more and more M&As activities. The number of the paper enterprises reduced from more than 10,000 in 2000 to about 3700 in 2009, and in the end of 2011, part of enterprises will disappear. At the same time, in recent two or three years, many listed companies of the paper industry carried out assets reorganization.

Through analyzing the trend of the M&As of international paper industry, and combination with the current situation of the Chinese paper industry, we holds that Chinese paper enterprises can use the following merger strategies to carry out M&As in the future.

#### **3.1 M&As strategy of backward integration**

The M&As between upstream and downstream firms of industrial chain can enhance competitiveness and improve profitability. The paper enterprises practicing the “forestry-pulp-paper integration” strategy through backward M&As can guarantee the supply of raw materials, reduce the negative influence caused by the price rising of raw materials, reduce the cost, improve the grade of the paper, optimize the structure of raw material, and mitigate environmental pollution. Moreover, the “forestry-pulp-paper integration” strategy is consistent with the policy of “returning farmland to forest”, so the enterprises can get some favorable policy and government support.

In the early 1970s, the forestry-pulp-paper integration has become the development model of the international paper industry. Large international pulping and paper enterprises build raw material base of fast growing and high yield forests by various forms, and combine afforestation, management, cutting, pulping, paper making and sales together, and form the benign circulate industrial chain.

At the mid-1980 s, China clearly determined that the raw materials of the paper enterprises should be given priority to wood, and made the development policy of “forestry-pulp-paper integration”. For the paper enterprises having a certain scale, they can use vertical M&As strategy to achieve the upstream forest and pulp resources, and to implement the forestry-paper integration strategy. According to the statistics of the China Paper Association, by the end of 2009, there are more than 20 forestry-paper integration project approved by country, provinces and cities. With the arrival of a low-carbon economy, the “forestry-pulp-paper integration” get more attention, the reorganization and integration between paper enterprises more aim at the forest paper integration enterprise. The M&As such as Shangdong Huatai Paper Co., Ltd. purchased the 100% equity of Norske (Hebei) Paper Company, Fujina Nanping Paper Co., Ltd. purchased the operating assets of Longyan Paper Company in 2009, China National Paper-Industry Investment Corp belonging to China Chengtong Holdings Group Ltd restructured Tiger Forest & Paper Group in 2010, all have the industrial base of forestry-paper integration.

In addition, some paper enterprises can expand industry chain to upstream through M&As to ensure the supply of raw materials. In March 2010, Xiamen Anne Corporation Limited acquired the

100% equity of Hunan MCC Mellon, its purpose is to reduce costs and to ensure a steady supply of raw materials required by the production of coated paper, than enhance market competitiveness. Zhanjiang Guanlong Paper Co., Ltd is the main supplier of base paper of Guangdong Guanhao High -Tech Co., Ltd, in September 2010, Guanhao High -Tech purchased Guanlong, which make the industry chain extend from base paper-special paper to pulp-base paper-special paper, and is helpful to improve the company's profitability.

### **3.2 M&As strategy of horizontal integration**

The horizontal integration M&As can make the superior enterprises realize scale expansion through the adjustment of existing assets, rather than add new capacity, and can avoid supply exceeding demand caused by the excessive growth of productivity and thus lead to vicious competition. It can enable enterprises to quickly obtain scale effect and enhance the competitiveness. It can make the product structure within the enterprise more reasonable. It is beneficial to the free flow of the advanced management and technology, to some extent, which can improve the management level and technical level of the whole industry. Therefore, the horizontal integration M&As is becoming one of the main expansion pattern of Chinese paper enterprises.

China National Paper-Industry Investment Corp is a typical representative of the implementation of M&As expansion strategy. It began to enter into the paper industry through indirect holding of Foshan Huaxin Packaging Co.,Ltd, and then the production capacity rapidly expand to about 2.4 million tons through purchasing Zhuhai S.E.Z. Hongta Renheng Paper Co., Ltd, Zhanjiang Guanlong Paper Co., Ltd, Guangdong Guanhao High -Tech Co., Ltd, and Tiger Forest & Paper Group. For another instance, Minfenggroup Special Paper Co., Ltd purchased Jiaxing Fenglai Sangdabei Paper Co., Ltd in September 2010, which further optimize the structure of special paper industry, and make the special paper industry stronger and bigger.

### **3.3 Cross-border M&As**

The economic Globalization has become the general trend of world economic development, which lead to production and business activities between countries become more frequently, and the relationship of interdependence and interpenetration among national economic become closer together. The most outstanding performance of the economic globalization is international operation of enterprises, and cross-border M&As is an important way to international operation. In the past 20 years, the overseas M&As of Chinese enterprises increases at the average annual rate of about 17%, that has already attracted strong concern by the domestic and international personage.

Some Chinese paper enterprises with international management capacity and international competitiveness have beforehand take part in overseas M&As. The purpose of cross-border M&As is to obtain certain scarce resources or to cooperate with leading enterprises in the market segment with growth potential, so as to realize the rapid development in the internationalization process. In February 2005, Lee & Man Paper Manufacturing Limited acquired a wood pulp factory with annual capacity of 200000 tons of wood pulp located in Samoa, California. In May 2008, Nine Dragons Paper (Holdings) Limited acquired controlling stake of a company called Zhengyang paper factory in Vietnam. Along with the acceleration of globalization enhancement of competitiveness of Chinese paper enterprises, there will be more and more enterprises to implement cross-border M&As.

## **4 Conclusion**

With the continuous advance of economic globalization, the Chinese paper industry will face the impact and competition from around the world. M&As is one effective way to accelerate the adjustment of industry structure and upgrading, and each paper enterprise which want do bigger and stronger can not avoid the subject. In order to change some realistic problem faced by the Chinese paper industry, M&As is imperative. M&As can change the status of the paper industry such as small scale of enterprise and low industrial concentration, and can focus some advantage resources on some more stronger enterprises and then form some large paper group. This can not only reduce unnecessary repeated investment and alleviate the problem of excess capacity, but also enhance the ability to control raw materials and other resources, furthermore enhance the overall competitiveness of the Chinese paper industry.

Chinese paper enterprises should avoid pursuit of short-term profit in the process of M&As, and pay attention to Structured Development. They must choose the appropriate M&As strategies from the perspective of the overall strategy according to the characteristics of the paper industry and aim at improving their own core competitive ability. In order to reduce risk, they should carry out M&As

activities steps by steps.

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