

Exploration and Research on the Development Status and Transformation Development Path of Hb Pharmaceutical Enterprises under Drug Collection

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Abstract: In order to further improve the people's quality of life, so that the broad masses of people at a lower price to enjoy higher quality drug services, the government organized the national centralized procurement of drugs. With the implementation of the national centralized drug procurement system, the profits of Chinese pharmaceutical enterprises have been greatly affected, and pharmaceutical enterprises are facing unprecedented challenges. This paper takes HB pharmaceutical enterprises as the research subject and explores the transformation and development path of pharmaceutical enterprises through financial analysis and analysis of advantages and disadvantages.

Pharmaceutical pooling means that the National Medical Insurance Administration procured drugs through bidding through the national procurement platform to form a volume purchase, reduce the price of drugs, and effectively reduce the burden of patients. In April 2019, the pilot program for centralized procurement and use of state-organized drugs was officially launched, and in August 2022, the seventh batch of centralized procurement was completed [1]. Judging from the winning bids, drug prices were reduced by about 50% on average. The effect of drug collection is remarkable, and its essence is "purchase with quantity and exchange price with quantity". However, the market share of drugs is limited, and the country allocates a large number of market shares to the bid-winning enterprises through the form of collection purchasing, and with the continuous expansion of the scope of drug collection, the remaining drug market will gradually decrease. The implementation of the collectivization system greatly reduces the profit margin of single product of pharmaceutical enterprises and forces them to take the road of transformation and development [2].

1. Current Situation of Medical Industry

1.1 Basic Information of the Pharmaceutical Industry

With the development of economy, the aging of the population, the continuous improvement of people's income and living standards, the state attaches more importance to medical care year by year, and the income and profit of China's pharmaceutical manufacturing industry also increase year by year [3]. In 2021, China's pharmaceutical industry rebounded after experiencing the impact of the epidemic. In the long run, the rigid demand for drugs is still strong, and the pharmaceutical industry will develop steadily [4]. Data from the National Bureau of Statistics showed that the

annual industrial added value above the scale of the pharmaceutical manufacturing industry increased by 24.8% year-on-year, which was 15.2 percentage points higher than the overall growth rate of the national industry in the same period. The annual operating revenue of enterprises above designated size in the pharmaceutical industry was 3,304.92 billion yuan, with a year-on-year growth of 19.1%, which was 0.3% lower than the overall level of industrial enterprises above designated size in the same period. Operating costs were 1,790.61 billion yuan, up 12.5% year on year and 6.6% lower than the overall level of industrial enterprises above designated size in the same period. The profit was 700.64 billion yuan, up 68.7% year on year and 34.4% higher than the overall level of industrial enterprises above designated size in the same period. Profit margin was 21.2%, up 6.5 percentage points from a year earlier [5].

1.2 Characteristics of the Medical Industry

The characteristic of Chinese medicine industry is the large volume but the per capita consumption level is relatively low compared with the developed countries. With the development of economy, the progress of society, the investment of government and the improvement of people's awareness of health, the volume of the industry will gradually increase and the per capita consumption level will also gradually rise. People's rigid demand for medical products has driven the development of the entire medical industry, but also put forward higher technological innovation demand for the medical industry, which has the following characteristics:

High input. The medical industry needs a lot of investment in the whole process of research and development, production and sales [6]. In the research and development of new drugs, pre-clinical research, clinical trials, and drug registration after successful experiments require a large amount of time and capital investment. In the subsequent production process, the equipment and workshop of the enterprise are very high requirements, and the development of pharmaceutical companies whether R & D equipment or production equipment need to be updated quickly, the enterprise needs to keep investing [7]. In the later sales process, it is also necessary to lay a wide range of sales channels to carry out academic promotion and so on, so the pharmaceutical industry is an extremely high investment industry.

Coexistence of risks and benefits. New drug development requires a large amount of investment and a long time cycle, from basic research to the final drug marketing needs 10-15 years. Once a drug can be successfully developed and marketed[8], it will be available for a longer period of sale. The longer it will be circulated in the market, the greater the profits it will bring to the enterprise. So the pharmaceutical industry is both high risk and high return industry.

Greatly influenced by policies. Before 2019, the profit of a single product in the pharmaceutical industry was relatively high. Since 2019, when the country began to implement the centralized purchase of national drugs, major pharmaceutical enterprises began to roll in the price in order to seize more market shares. From the essence of the national drug collection, the first thing to ensure the efficacy of the drug is that the generic drug must pass the consistent evaluation of quality and efficacy. After that, the actual competition is the price of drugs, and the low price has an advantage in the collective purchase, which contributes to the price inclusion of pharmaceutical companies. As a result, the price of a single product of drugs decreases, and the profit margin of a single product of drug companies decreases[9].

2. Introduction and Status quo of HB Pharmaceutical Enterprises

2.1 Introduction of HB Pharmaceutical Enterprises

HB pharmaceutical enterprise is located in Shijiazhuang, capital of Hebei Province. The main

products of the company involve nearly a thousand categories in the fields of biological and biochemical drugs, raw material drugs, chemical pharmaceutical preparations, biological agricultural and veterinary drugs, health consumer products and so on[10]. As a well-established Chinese pharmaceutical enterprise, the company has undertaken the task of national drug research and development and production from the founding of the country, promoting the development of the pharmaceutical industry. Until now, it has been gradually overtaken by other pharmaceutical enterprises and is struggling to operate in today's drug market.

2.2. Financial Status quo of HB Pharmaceutical Enterprises:

This paper mainly analyzed the profit statements of HB pharmaceutical companies in recent 3 years, as shown in Table 1.

Table 1: HB Pharmaceutical Company 2019-2021 income statement

Subject \ Date	2021	2020	2019
Gross operating income	¥10,384,575,261	¥11,492,504,163	¥11,457,480,505
Total operating cost	¥10,357,929,520	¥11,420,313,687	¥11,241,707,067
Operating profit	¥136,031,313	¥184,148,256	¥264,847,814
Total profit	¥134,905,010	¥186,680,347	¥260,651,606
Net profit	¥35,382,066	¥104,477,152	¥166,603,159

It can be seen that the net profit of 2019-2021 is 167 million yuan, 104 million yuan and 35 million yuan respectively. The net profit of 2020 is 37% less than that of 2019, and the net profit of 2021 is 66% less than that of 2020. Based on the above data, this paper selected operating profit margin and net profit margin to analyze the profitability of HB pharmaceutical companies:

Table 2: Profitability indicators of HB pharmaceutical enterprises from 2019 to 2021

Subject \ Date	2021	2020	2019
Operating profit margin	1.31%	1.60%	2.31%
Net profit margin	0.34%	0.91%	1.45%

As can be seen from the above table 2, all three indicators have decreased year by year, especially net profit margin and gross profit margin. The main reason for this change is that the country officially launched centralized drug procurement in April 2019, which has squeezed the profit margin of single product. The current effect of the national drug collection is remarkable, and there is a high probability that it will continue and the scope will continue to expand. It is expected that the profit situation of HB pharmaceutical companies will not improve in the future.

3. Advantages and Disadvantages of HB Pharmaceutical Enterprises

3.1. Enterprise Advantages

3.1.1 Brand Advantage

HB pharmaceutical enterprise is a pharmaceutical enterprise established at the beginning of the founding of the People's Republic of China, which has a history of more than 60 years. It has obvious advantages in the industry scale, especially in the field of antibiotic production in the domestic industry. The company's main products, cefotaxime sodium for injection, amoxicillin sodium for injection potassium clavulanate, piperacillin sodium for injection tazobactam sodium, normethvancomycin hydrochloride for injection and so on, have taken the leading position in sales in China, laying a solid foundation for product promotion and sales.

3.1.2 Quality Advantage

The company has fully guaranteed the effectiveness, safety and quality control of its products and avoided adverse drug reactions and other risks through the management of research and development, such as pre-clinical research, clinical trials and trial production of new products, and post-market risk management, such as purchasing control, production process control, quality inspection and pharmacovigilance. In the national supervision random inspection, the qualified rate of the company's products is maintained at 100% for a long time.

3.1.3 Product Advantages

The company's main products cover nearly a thousand categories in the fields of chemical pharmaceutical, modern biotechnology drugs, vitamins and nutritional health products, modern Chinese medicine, biological agricultural and veterinary drugs and other fields. The treatment field covers anti-infection, cardiovascular and cerebrovascular, kidney disease, anti-tumor and immune regulation.

3.2. Disadvantages of the company

3.2.1 Human Resources

(1) High manpower cost

According to the annual report of the listed company in 2021, HB pharmaceutical company has a total of 10,975 employees receiving salary in 2021, and the total salary payable is 227 million yuan. In 2021, a total of 7,102 employees of Dongbei Pharmaceutical will receive salary, and the total salary payable will be 3,718,800 yuan. In 2021, there are 19,031 salaried employees of Kelun Pharmaceutical, and the salary payable is 133 million yuan. It can be seen from the above data that HB pharmaceutical companies bear higher labor costs.

(2) Unreasonable structure of R&D personnel

Table 3: HB pharmaceutical company R&D Personnel in 2021

The number of research and development staff in the company	760 people
The number of R&D staff as a percentage of the company's headcount (%)	6.61%
Educational structure of R&D personnel	
Type of educational structure	Number of people with educational structure
PhD Candidate	9 people
Postgraduate students	234 people
Undergraduate course	271 people
Specialized subject	146 people
Below high school	100 people
Age structure of R&D personnel	
Age structure category	Age structure Number of people
Under 30 years old (excluding 30 years old)	148 people
30-40 years old (including 30 years old, excluding 40 years old)	215 people
40-50 years old (including 40 years old, excluding 50 years old)	295 people
50-60 years old (including 50 years old, excluding 60 years old)	102 people

As can be seen from the above table 3, there are only 9 people with doctor's degree, accounting for 2.5% of the total number of R&D personnel; there are only 234 people with master's degree, accounting for 44.7% of the total number of R&D personnel; the total number of people with master's degree or above is less than 50% of the total number of R&D personnel. Research and

development work in the pharmaceutical industry has very high professional requirements for personnel, and the threshold is also very high. Pharmaceutical enterprises need a large number of highly educated research and development talents to participate in the research and development work, in order to promote the process of enterprise research and development.

Looking at the age structure of R&D personnel, there are 102 R&D personnel between 50 and 60 years old, accounting for 13.4% of the total number of R&D personnel. Elderly R&D personnel are more important, which is easy to cause the lack of vitality of the R&D team and other problems, affecting the progress of R&D.

3.2.2 Cost of Sales

The essence of the national drug collection is "purchase with quantity and exchange price with quantity". On the one hand, it can reduce the drug price through unified bidding, on the other hand, it can also reduce the sales cost of pharmaceutical enterprises. At present, the sales expense of HB pharmaceutical company in 2021 is 2.161 billion yuan, and the total operating cost is 10.358 billion yuan, accounting for one-fifth of the total operating cost. The high cost of sales means the decrease of the operating profit of the enterprise. In addition to reducing the unit price of drugs for the benefit of patients, the country adopts the form of collective purchasing. If the enterprise can seize the opportunity of collective purchasing to expand its market share, it can also greatly reduce the sales cost and promote the sound development of the enterprise.

3.2.3 Single Ownership Structure

At present, HB pharmaceutical Company is controlled by Jizhong Energy Group Co., LTD., which is owned by Hebei Asset Management and Administration Commission. It is a state-owned holding enterprise, lacking other capital, and its management system is more rigid and less dynamic than that of other pharmaceutical enterprises.

The operation of enterprises needs the support of various forces. Since the founding of the People's Republic of China, there have been a lot of state-owned enterprises have completed the enterprise restructuring, obtained the support of various capital and forces, and achieved growth. The drawbacks of single ownership institutions, such as low operation efficiency, are easy to cause "one word" and lead to the wrong direction of the enterprise, and other drawbacks gradually appear in the enterprises with single ownership structure.

4. Study on the Transformation and Development Path of Hb Pharmaceutical Enterprises

The national centralized drug procurement has been carried out for three years since April 2019, and seven batches of drugs have been purchased successively. The average price of drugs has been reduced by 50%, greatly reducing the burden of patients. The effect of collective procurement is obvious, which will continue in the future, and the scope of drugs included in the collective procurement will gradually expand. Whether the generic drugs can win the bidding or the research and development of original drugs will gradually become the direction of the transformation and development of pharmaceutical enterprises.

4.1. Production Transformation and Development Path

The safe and efficient completion of drug production is the top priority of transformation and development. According to the annual report of HB pharmaceutical company, the sales of generic drugs is the main source of the company's income, and improving the winning probability of

collectible procurement should become the development direction of the company[11].

4.1.1 Reduce Production Costs

The drugs that can participate in the bidding must pass the consistency evaluation of drugs, and the most important means to improve the probability of winning the bidding is to reduce the unit price of drugs[12].

HB pharmaceutical enterprise has been engaged in the pharmaceutical industry for more than 60 years. It has obvious advantages of scale economy in the industry, especially in the field of antibiotics, it has sufficient bargaining power for the production of raw materials. The company needs to put more efforts to reduce the raw material cost of antibiotics and improve the utilization rate of production equipment[13].

Targeted personnel assessment and streamlining, especially for sales personnel and R&D personnel with low ability, can not only reduce the cost of labor costs, but also improve production efficiency and reduce sales costs.

4.1.2 Ensuring Production Capacity

In August 2021, the supply of ibuprofen sustained-release capsules won by Huabei Pharmaceutical in the third batch of national collectible Purchase was cut off in Shandong Province. Therefore, the State organized Drug Joint Purchase Office included Huabei Pharmaceutical in the "violation list" and cancelled its qualification to participate in the national collectible Purchase of drugs from August 11, 2021 to May 10, 2022. This is the state organized centralized procurement of drugs so far the first case of punishment due to supply failure[14].

Due to the supply cut-off event, the company lost the sales volume of the winning drugs and also the qualification to apply for collective procurement, resulting in a net profit of only over 35 million yuan in 2021. Obviously, the company did not expect enough production capacity of the bid-winning products and did not actively deal with the impact of the epidemic, which resulted in this incident[15].

The failure of winning the bid due to production capacity problems has a very bad impact on the participation of enterprises in collective purchasing. In the short term, it will affect the sales volume and profits of enterprises, and in the long term, it will affect the probability of winning the bid. Under the current trend, reducing the probability of winning the bid will undoubtedly be a fatal blow to the sales volume of enterprises. Enterprises need to pay more attention to the bid-winning products, do a good job in capacity estimation and backup plan, and ensure the normal supply of bid-winning products.

4.2. Sales Transformation and Development Path

The sales market of drugs is mainly divided into domestic and foreign sales markets, and the domestic market trend is very obvious. The sales idea needs to be changed according to the development of drug collection. The market probability of non-collection drugs will decrease year by year in the future, and the sales difficulty and cost of maintaining the original sales model of distribution, distribution, investment attraction and academic promotion will increase year by year. The existing model can maintain a certain amount of sales, but the sales cost is high, and the effect will be weakened due to the decrease of the market year by year. Therefore, it is necessary to change the sales concept and take collective purchasing and winning the bid as the main sales method, which can not only save the cost of distribution, investment and academic promotion, reduce the sales labor cost, but also rapidly occupy the market and increase the sales after winning the bid.

At the same time can be committed to the development of foreign markets, in the domestic market because of the national collection of the price volume, opportunities in foreign areas can become another important outlet.

4.3. R&D Transformation and Development Path

4.3.1 Generic Drug Research and Development

At present, the company mainly relies on the sales of generic drugs to gain revenue, and the research and development of generic drugs is also the focus of the company's R&D transformation. In order to improve the probability of winning the bid, the company should invest the limited research and development funds into the research and development of superior generic anti-infective drugs, mainly focusing on the consistency evaluation of generic anti-infective drugs and other aspects, which can increase the varieties of the declared collection drugs. So as to achieve the purpose of improving market share.

4.3.2 Innovative Drug research and Development

The research and development ability of innovative drugs is still the embodiment of the core competitiveness of pharmaceutical enterprises. Although the centralized purchase of drugs nationwide will affect the profit of a single product, innovative drugs lack similar competition and are less affected by the centralized purchase. Considering the characteristics of long development cycle and high cost of innovative drugs, when the company's profitability is enhanced, appropriate consideration should be given to increase the R&D investment of innovative drugs. Only by attracting highly educated and high-quality R&D talents to participate in the R&D of innovative drugs, can the company continue to improve its core competitiveness.

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