

Research on working capital management of Midea Group from the perspective of channel

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Abstract: In the financial management of enterprises, working capital management has always been the focus of enterprises. With the wide application of supply chain management, customer relationship management and channel management, working capital management research based on channel theory has become a practical trend. Manufacturing industry is the foundation of the country, household appliance manufacturing industry is the most important in manufacturing industry. Based on this, this paper analyzes the working capital management of Midea Group from the perspective of channel theory, finds out the existing problems in working capital management of Midea Group and puts forward improvement measures.

1. Introduction

The current world economy is faced with various problems, such as the uneven recovery of various economies, and the lack of independent growth impetus in the eurozone and Japan, which are in severe turmoil. In such a complex economic environment, if domestic enterprises want to stand out, they must focus on improving the efficiency of capital investment and combining scientific theories to cope with the unpredictable market environment. Working capital, as the most liquid and risky part of enterprise assets, penetrates into many links of enterprise business activities. Working capital is like the blood of the enterprise. The efficient operation of working capital can improve the operation of the enterprise and create higher value for the enterprise. Therefore, it is very important for the enterprise to pay attention to the management of working capital. Traditional factor under the analysis of working capital management in addition to the elements cover is not complete and classification is not reasonable, because a simple focus on relevant indicators such as inventory turnover, accounts receivable turnover rate of operation, limited to aspects of digital computing, only to increase or reduce one index, it is hard to put in practicality, it is also difficult to apply to the actual production practice. Secondly, the steps from raw material procurement to production and processing to sales are not complete, and it is difficult to coordinate various departments of the company to make joint efforts to improve the operation capacity. Therefore, the disadvantages of traditional factor analysis gradually exposed, based on the channel perspective of working capital management. Product circulation can be transparent in the channels, so that decision makers can quickly identify the crux of the problem and take appropriate measures in time, so as to avoid risks and reduce losses.

There has always been fierce market competition in the home appliance industry, but in the process of long-term exploration, the basic grasp of the core technology of the industrial chain makes the market share of China's home appliance industry leading the world, which has become a beautiful name card of China's manufacturing industry. Leading enterprises include both state-owned and private enterprises. In this paper, Midea Group Co. Ltd., a well-known representative enterprise in China's home appliance industry, is selected to analyze the management efficiency of working capital of the Group from the perspective of channel.

2. Literature review on working capital management from the perspective of channels

In the broad sense, working capital is the concept of current assets and current liabilities and the narrow sense is the concept of current assets and current liabilities. Most of the research on working capital management at home and abroad is based on the difference between current assets and current liabilities, namely net working capital. This is also the concept of working capital adopted in this paper. Working capital management is an important part of enterprise financial management. Its management goals should not only comply with the goals of enterprise financial management, but also conform to its own characteristics, that is, its management goals are to ensure that the enterprise has enough liquidity, as far as possible to improve its profitability.

Foreign research on working capital management began in the 1930s. But before the 1970s, the main content of working capital management research is how to optimize each working capital project. After that, the research was transferred to working capital as a whole. W. d. Knight (1972) pointed out that it was not appropriate to study the optimal level of each current asset separately. When the investment in various current assets was combined to study, the nature of decision should not be optimization, but satisfaction. With the wide application of supply chain management, channel management and customer relationship management, people realize that the previous research on working capital based on the perspective of traditional elements is too one-sided, isolated, and the indicators are disconnected from the business process, so it is a need to build a new working capital management model. Wang Zhuquan and Ma Guanglin (2005) put forward the new concept of "shifting the focus of working capital management of trans-regional enterprises to channel control", which should not be limited to elements, and advocate the organic combination of working capital management research and channel management research. Foreign scholar Hofmann Erik (2010) also proposed that no enterprise should damage the interests of cooperative enterprises in order to improve its own working capital management efficiency. Instead, it should take the common interests of all enterprises in the channel as the starting point of strategic planning to achieve win-win cooperation. Yang Fang and Yang Rongyan (2010) found that most of the domestic researches on working capital management remained in the simple factor of turnover rate or turnover period, and evaluated whether the management of working capital of enterprises was proper by turnover period or turnover speed. Starting from channel management, the modern management concepts and methods such as supply chain management, channel relationship management and customer relationship management are integrated into the working capital management research. It can not only guide the practical operation of fund management, but also broaden the new field of vision for the theoretical research of working capital management. Wu Xia and Shen Yanping (2020) believe that working capital management under the channel theory is a relatively perfect management theory at present, and improving the fund management of various channels is conducive to improving the management efficiency of enterprises from details.

Wang Zhuquan, Pang Yongmei and Sun Jianqiang (2007) classify working capital by channel as follows: operating activities and financial activities. Among them, operational activities are divided into procurement channels, production channels and sales channels. Then the working capital of operating activities is further divided into the working capital of marketing channel according to its relationship with the channel (finished goods inventory + accounts receivable, notes receivable - prepaid accounts - taxes payable), working capital of production channels (in product inventory + other receivables - employee salaries payable - other payables) and working capital of procurement channels (raw material inventory + prepaid accounts - accounts payable, notes payable). In addition, an evaluation system using working capital turnover as an index is constructed. That is, working capital turnover = working capital of operating activities/ (annual operating income /360). And when calculating the overall performance management of working capital to sales as a turnover, and in the evaluation of various channels of working capital management performance, to strictly distinguish between existence form of the inventory, purchasing channels with annual sales as the base, the completion of the production channels to the year the product cost for base, sales channels to annual sales cost base. However, there is a lack of internal consistency between the general indicators and the

specific indicators, and the evaluation results are relatively one-sided. Therefore, Wang Zhuquan and Zhang Xianmin (2012) modified the working capital performance evaluation index established in the above article to a certain degree, fully considered the dual characteristics of capital liquidity and profitability, and conducted a more scientific evaluation of capital management performance by the dual indexes of liquidity and profitability. Since then, Sun Yan (2018) believes that the optimization of all channel elements may not be able to achieve the optimization of the overall index, which is combined with the purpose of enterprise profit and the convenience, accuracy, comprehensiveness and specificity of the operation. In procurement, production and sales channels, annual sales revenue is taken as the calculation base, which further optimizes the previous evaluation system.

3. Construction of evaluation system

Considering the convenience of data collection, this paper only studies the working capital management of Midea Group's operating activities, that is, the working capital management of procurement, production and sales channels. The working capital turnover rate of each channel is selected as the index to build the following evaluation system:

In the procurement channel, the main factors affecting the working capital are raw material inventory, prepayment, notes payable and accounts payable. The formula is as follows:

Working capital of purchasing channel = raw material inventory + prepayments - Notes payable - accounts payable

Working capital turnover of purchasing channel = $360 / (\text{Annual operating income} / \text{purchasing channel working capital}) = 360 / [(\text{annual operating income}) / (\text{raw material inventory} + \text{prepayments} - \text{Notes payable} - \text{accounts payable})]$

The factors that affect the working capital of the production channel mainly include product inventory, other receivables, other payables and employee salaries payable. The formula is as follows:

Working capital of production channel = in product inventory + other receivables - employee payroll payable - other payables

Working capital turnover of production channels = $360 / (\text{Annual operating income} / \text{working capital of production channels}) = 360 / [(\text{annual operating income}) / (\text{in product inventory} + \text{other receivables} - \text{employee salaries payable} - \text{Other payables})]$

The factors that affect the working capital of the sales channel mainly include goods in stock, accounts receivable, notes receivable, accounts received in advance and taxes payable. The formula is as follows:

Working capital of sales channel = inventory + accounts receivable + notes receivable - accounts received in advance - taxes payable

Working capital turnover of sales channel = $360 / (\text{annual operating income} / \text{working capital of sales channel}) = 360 / [(\text{annual operating income}) / (\text{inventory goods} + \text{accounts receivable} + \text{notes receivable} - \text{accounts receivable in advance} - \text{taxes payable})]$

Finally, working capital of business activities = working capital of procurement channel + working capital of production channel + working capital of sales channel

Working Capital turnover from Operating Activities = Working capital from Operating Activities / (Annual operating income / 360)

4. Analysis of working capital management status of Midea Group from the perspective of channel

4.1 Analysis of purchasing channel working capital management

As can be seen from Table 1 and 2 below, the raw material inventory of Midea in 2017 was 5.6 billion yuan, accounting for 8.33%, which reached the highest level. Although it has been somewhat reduced in the past two years, the amount is still three times higher than that in 2015. At the same time, the operating income increased year by year. The operating income in 2019 was about twice that of 2015, and the growth rate was lower than that of raw material inventory. It shows that although the

increase of raw material inventory is related to the expansion of company scale, on the other hand, the proportion of raw material inventory is relatively increased, indicating that the amount of reserves is increased, which will occupy the working capital of procurement channels, resulting in a decline in the efficiency of working capital management. Accounts payable and notes payable account for the highest proportion in the working capital of procurement channels, accounting for 57.78% and 32.46% respectively in 2019. Accounts payable increased significantly, with the proportion increasing by more than 10% from 46.97% in 2015 to 57.78%. This shows that Midea Group takes up the upstream supplier capital situation is more and more obvious. The calculation shows that the working capital of Midea Group's procurement channel is negative and decreasing year by year, and the working capital turnover period of procurement channel is always less than zero, but the overall trend is rising, indicating that Midea Group's working capital management is at a high level, but the efficiency has slightly decreased in the past five years.

Table.1. Working capital unit of Midea Group's procurement channel from 2015 to 2019.

| | 2019 | 2018 | 2017 | 2016 | 2015 |
|---|---------|---------|---------|---------|---------|
| Raw material inventory | 49.41 | 51.21 | 56.34 | 28.41 | 16.34 |
| Prepayments | 22.46 | 22.16 | 16.72 | 15.87 | 9.89 |
| Notes payable | 238.92 | 233.25 | 252.08 | 184.85 | 170.79 |
| Accounts payable | 425.36 | 369.02 | 351.45 | 253.57 | 174.49 |
| Operating income | 2793.81 | 2618.2 | 2419.19 | 1598.42 | 1393.47 |
| Procurement channel working capital | -592.41 | -528.90 | -530.47 | -394.14 | -319.05 |
| Working capital turnover of procurement channel | -76.34 | -72.72 | -78.94 | -88.77 | -82.43 |

Table.2. Internal structure distribution of purchasing channel operating capital.

| | 2019 | 2018 | 2017 | 2016 | 2015 |
|------------------------|--------|--------|--------|--------|--------|
| Raw material inventory | 6.71% | 7.58% | 8.33% | 5.89% | 4.40% |
| Prepayment | 3.05% | 3.28% | 2.47% | 3.29% | 2.66% |
| Notes payable | 32.46% | 34.52% | 37.26% | 38.30% | 45.97% |
| Accounts payable | 57.78% | 54.62% | 51.94% | 52.53% | 46.97% |

Combined with the above description, Midea Group occupies too much capital of suppliers. In the short term, taking up upstream supplier funds can give a company more flexibility in its working capital, giving it the initiative itself. However, in the long run, too much capital from upstream suppliers is not conducive to the establishment of long-term cooperative relationship between the company and suppliers and has a negative impact on the company's credit. Upstream suppliers may terminate cooperation with the company due to this impact, and the uncertainty and risk of future operation will increase.

Secondly, the raw material inventory of Midea Group occupies a large amount of procurement channel funds, indicating that the company's management of raw material inventory is not efficient enough, and the original background system, such as ERP, is slow to respond to business changes. In addition, the company's purchase of more raw materials may also be due to the rising prices of copper, steel, aluminum and plastic, which are required by home appliance enterprises such as Midea Group to produce and process goods. In order to avoid the problem of rising costs caused by rising prices of raw materials in the market, the company reserves a large number of raw materials. This behavior can avoid risks to some extent, but at the same time, the cost of managing raw materials also increases correspondingly, which reduces the efficiency of working capital management of procurement channels.

4.2 Analysis of working capital management of production channel

Table.3. Working capital of Midea Group's production channels from 2015 to 2019.

| | 2019 | 2018 | 2017 | 2016 | 2015 |
|--|---------|---------|---------|---------|---------|
| Product in process inventory | 15.96 | 20.40 | 20.41 | 7.93 | 5.04 |
| Other accounts receivable | 27.13 | 29.71 | 28.10 | 11.40 | 11.01 |
| Employee compensation payable | 64.36 | 57.88 | 52.48 | 31.54 | 22.29 |
| Other payables | 38.01 | 33.46 | 31.70 | 15.71 | 11.39 |
| Operating income | 2793.81 | 2618.20 | 2419.19 | 1598.42 | 1393.47 |
| Production channel working capital | -59.28 | -41.23 | -35.67 | -27.92 | -17.63 |
| Working capital turnover of production channel | -7.64 | -5.67 | -5.31 | -6.29 | -4.55 |

Table.4. Distribution of internal structure of operating capital in production channels.

| | 2019 | 2018 | 2017 | 2016 | 2015 |
|-------------------------------|--------|--------|--------|--------|--------|
| In product inventory | 10.97% | 14.42% | 15.38% | 11.91% | 10.13% |
| Other receivables | 18.65% | 21.00% | 21.18% | 17.12% | 22.14% |
| Employee compensation payable | 44.25% | 40.92% | 39.55% | 47.37% | 44.82% |
| Other payables | 26.13% | 23.66% | 23.89% | 23.60% | 22.90% |

As can be seen from Table 3 above, the working capital of production channel is negative and decreasing year by year, the working capital turnover of production channel is negative and decreasing, and the speed of working capital turnover is fast. It shows that the company has a good management performance of product design, inventory and other production channels. Generally speaking, in terms of production channel, the company's working capital management efficiency is higher.

Table 4 reflects the distribution of the internal structure of working capital of Midea Group's production channels. During the five years from 2015 to 2019, the largest proportion has always been the employee compensation payable, which accounted for a stable proportion of around 44%, followed by other payables and other receivables. Employee compensation and other payables account for a large proportion of working capital, which is related to the expansion of production scale. The lowest proportion is in product inventory, which only accounts for about 10% of the total working capital of the production channel. After the highest proportion of product inventory in 2017, there is a significant decline in 2019, indicating that the company has strengthened product inventory management in 2019, and management efficiency has been improved to some extent. The reason is that the company actively introduces high-end talents, improves the organizational structure of research, and constructs the management mode dominated by research. The advanced production process improves the production efficiency, the production link works efficiently, and maintaining a small share of capital is conducive to the improvement of working capital management efficiency.

4.3 Analysis of sales channel working capital management

Table.5. Midea Group 2015-2019 sales channel working capital.

| | 2019 | 2018 | 2017 | 2016 | 2015 |
|---|---------|--------|---------|---------|---------|
| Stock commodity | 216.39 | 182.80 | 174.65 | 117.53 | 81.18 |
| Accounts receivable | 186.64 | 193.9 | 175.29 | 134.55 | 103.72 |
| Notes receivable | 47.69 | 125.56 | 108.54 | 74.27 | 128.89 |
| Prepaid accounts | 162.32 | 167.82 | 174.09 | 102.52 | 56.16 |
| Tax payable | 50.96 | 38.75 | 35.44 | 23.64 | 16.07 |
| Operating revenue | 2793.81 | 2618.2 | 2419.19 | 1598.42 | 1393.47 |
| Sales channel working capital | 237.44 | 295.69 | 248.95 | 200.19 | 241.56 |
| Working capital turnover of sales channel | 30.60 | 40.66 | 37.05 | 45.09 | 62.41 |

Table.6. Distribution of internal structure of operating capital in sales channels.

| | 2019 | 2018 | 2017 | 2016 | 2015 |
|---------------------|--------|--------|--------|--------|--------|
| Goods in stock | 32.59% | 25.79% | 26.14% | 25.97% | 21.03% |
| Accounts receivable | 28.11% | 27.35% | 26.24% | 29.73% | 26.87% |
| Notes receivable | 7.18% | 17.71% | 16.25% | 16.41% | 33.39% |
| Prepaid accounts | 24.45% | 23.68% | 26.06% | 22.66% | 14.55% |
| Tax payable | 7.67% | 5.47% | 5.31% | 5.22% | 4.16% |

As can be seen from Table 5 above, in terms of sales channels, Midea Group's working capital turnover of sales channel decreased year by year from 2015 to 2019, from 62 days in 2015 to 30 days in 2019, which is a performance of the accelerated turnover of working capital in sales channels. Generally speaking, Midea Group's working capital management efficiency in sales channels has been significantly improved. At the same time, the operating capital of sales channel fluctuated during the five years from 2015 to 2019. Under the circumstance that the production, operation and scale of the company have been expanded, the amount of working capital in sales channels in 2019 is the same as that in 2015.

Although Midea Group's working capital management efficiency of sales channels is improving on the whole, it can be seen from Table 6 that there are some problems in the distribution of internal structure. Inventory products account for a large proportion, and the proportion of inventory products is also increasing year by year, from 21.03% in 2015 to 32.59% in 2019, with an increase of more than 10%. With rapid growth, the rapid increase in the proportion of goods in inventory occupies more working capital of sales channels.

From the above analysis, it can be concluded that Midea Group has overstocked inventory. This situation may be due to the improvement of production technology, the speed of production of goods, quality optimization, resulting in the stagnation of inventory liquidity. The overstocking of inventory goods will occupy the working capital of the sales channel and reduce the efficiency of the management of working capital. Second, the company sales of consumer electronics and hvac products, such as the market demand is strongly influenced by the economic situation and the macroeconomic regulation and control, if a significant fluctuations in the global economy, domestic macroeconomic or trend of a slowdown in consumer demand growth, the company's home appliance market growth will be slow, thus for beauty products sales, In view of these problems mentioned above, the company needs to take the initiative to take measures to deal with risks and ensure the turnover of working capital of sales channels.

4.4 Analysis of working capital of operational activities

Table.7. Operating turnover period of Midea Group's operating activities from 2015 to 2019.

| | 2019 | 2018 | 2017 | 2016 | 2015 |
|--|---------|---------|---------|---------|---------|
| Working capital of purchasing channels | -592.41 | -528.90 | -530.47 | -394.14 | -319.05 |
| Working capital of production channel | -59.28 | -41.23 | -35.67 | -27.92 | -17.63 |
| Working capital of sales channel | 237.44 | 295.69 | 248.95 | 200.19 | 241.56 |
| Operating revenue | 2793.81 | 2618.2 | 2419.19 | 1598.42 | 1393.47 |
| Working capital turnover of operating activities | -53.38 | -37.74 | -47.20 | -49.97 | -24.57 |

As can be seen from Table 7 above, the working capital turnover of Midea Group's operating activities is calculated. Compared with previous years, the number of working capital turnover of Midea Group's operating activities decreases in 2019 and increases in 2018, and the turnover of each year fluctuates greatly. Among them, procurement channel working capital turnover accounted for the largest proportion. Procurement link is the first checkpoint of enterprise production and operation,

improving the efficiency of procurement link working capital management is conducive to the optimization of enterprise operation level.

5. Suggestions on the optimization of midea Group working capital management

5.1 Optimize the cooperative relationship with suppliers

In the long run, occupying too much capital of upstream suppliers is not conducive to the establishment of long-term cooperative relations between the company and suppliers, and has a negative impact on the company's credit. So that the company needs to shorten the holding time of funding of suppliers as well as the change of the accounts receivable management mode, with the major suppliers to establish a long-term stable good relations of cooperation, improve the suppliers will, avoid change suppliers and adds to the cost of purchasing, this is conducive to the stability of raw materials procurement, strengthen the quality and quantity of raw materials, It plays a very good guarantee role in the subsequent production and sales links and promotes the long-term development of enterprises.

5.2 Establish a futures risk measurement system

As the prices of copper, steel, aluminum and plastics needed for the production and processing of goods by midea Group and other home appliance enterprises are greatly affected by changes in the macro environment, the rise of raw material prices will lead to the increase of raw material purchasing costs and occupy working capital. Therefore, it is necessary to avoid the cost risks brought by large fluctuations of raw material prices to the company's bulk raw material procurement. Midea Company can carry out some copper futures operation business to reduce the uncertainty risk brought by the price fluctuation of the spot market. Determine the business volume strictly according to the requirements of production and operation and put forward futures trading applications, and implement the stop-loss mechanism. Establish a futures risk measurement system to measure the amount of margin occupied, floating profit and loss, available margin and margin required for the proposed position, and determine the amount of additional margin reserve that may be required. At the same time, under the condition of not affecting the direct supply channels of steel mills, we can also actively promote the joint procurement of steel end-users from different industries around, in order to achieve common development.

5.3 Vigorously promote digital and online management of channel terminal business

Sales channel is the final link of channel theoretical management, which is closely related to the company's profits. Midea Group's production link is highly efficient. If the efficiency of sales link is low, it is easy to cause the overstocking of inventory goods, occupying the working capital of sales channel. Therefore, we should further strengthen the management of sales channels, focusing on how to improve the turnover efficiency of sales channels, accelerate the return of funds, and improve the overall working capital management performance of enterprises. Promote channels terminal digital, online business into the whole customer base information maintenance, purchase and sale relationship management, enters sells saves the data, prices, order management, sales management, policy to provide support, heavily on authenticity channel inventory control, and implement transparent sharing of information, provide data support for the sales strategy and system security, Avoid sales inefficiencies caused by overstocking or shortage of goods in stock.

5.4 Maintaining Customer relations

Enterprises should pay attention to the maintenance and development of customer relations, not only to grasp the benefits brought by old customers for the enterprise is very large, and the maintenance cost is far lower than the development of new customers, but also to develop more new customers. Expand some big customers as much as possible. In the process of customer development, enterprises can identify target customers through information collection in the early stage, and then negotiate with target customers to establish cooperative relations through the influence of enterprise brand.

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