Supply chain risk management based on enterprise performance analysis

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Abstract. In order to reasonably strengthen the risk management of supply chain, the author proposes a method based on enterprise performance analysis. Taking China Mobile and China Unicom as examples, on the basis of analyzing the performance principles of supply chain working capital management, mainly from the two aspects of factors and channels, the working capital management of the two companies is comprehensively analyzed, and the differences in the working capital management performance of the two telecom operators from the perspective of supply chain are deeply analyzed, when conducting business management, it is necessary to pay more attention to the management of working capital, divide working capital from the perspective of supply chain, adopt targeted strategies for working capital management, and conduct scientific analysis of working capital performance to reduce the financial risk of enterprises. The author studies the performance improvement strategy of working capital management based on the perspective of supply chain, in order to improve the economic benefits of enterprises.

Keywords: Enterprise performance; supply chain; risk management.

1. Introduction

At this stage, the definition of supply chain risk can be mainly divided into the following three categories: The first category is from the perspective of supply chain, which should highlight functional quality risks, structural stability risks and transfer risks between enterprises; In the second category, in terms of target enterprises, high attention should be given to product quality; The third category is from the perspective of consumers, focusing on product functional risks and safety and quality risks. Most customers are more concerned about the quality, safety and performance of the purchased products, while downstream customers are more concerned about the quality of raw materials and production. Therefore, the author's research on supply chain risk mainly focuses on the quality risk of products from the perspective of the target enterprise[1].

At present, researchers have not formed a unified definition of "senior leader support", after consulting a large number of materials, it is found that most of the definitions of senior leaders are senior management team members. Some research theories believe that the top management team plays an important interface role, closely linking an organization and related enterprises, and the attitudes of these groups directly affect the decision-making results of the enterprise. At the same time, the top leaders are deep in the leadership class, and their mastery of company resources must be higher than that of ordinary employees, the advantages of these senior leaders will help enterprises to occupy the dominant position in the market development[2].

2. The principle analysis of working capital management performance

Enterprises and external upstream and downstream enterprises are closely related as a whole, with the extensive application of information technology and the deepening of economic globalization, market competition has evolved from competition between individual enterprises to competition between supply chains. The business process and working capital management of enterprises are inseparable, so supply chain management can help enterprises to create working capital, and at the same time need the support of working capital. The business process of an enterprise is basically composed of procurement, production and sales, the traditional working capital management is based

on the analysis of the various components of working capital, the most commonly used are the turnover rate and the turnover period of each element, which represent the operating capacity of the enterprise and the management performance of working capital. In order to link the various elements of working capital, we introduce the theory of supply chain and channel management into the analysis of working capital, more consideration is given to factors such as prepaid accounts, other receivables, and employee compensation payable to more comprehensively reflect the efficiency of working capital[3]. Which correspond to the accounts payable turnover period, inventory turnover period, and accounts receivable in traditional working capital management, turnover period, see Figure 1 for details. Excellent supply chain management will objectively have a great influence on the performance of working capital management of an enterprise, only by improving from the channel or business level can the working capital management performance of an enterprise be fundamentally improved.

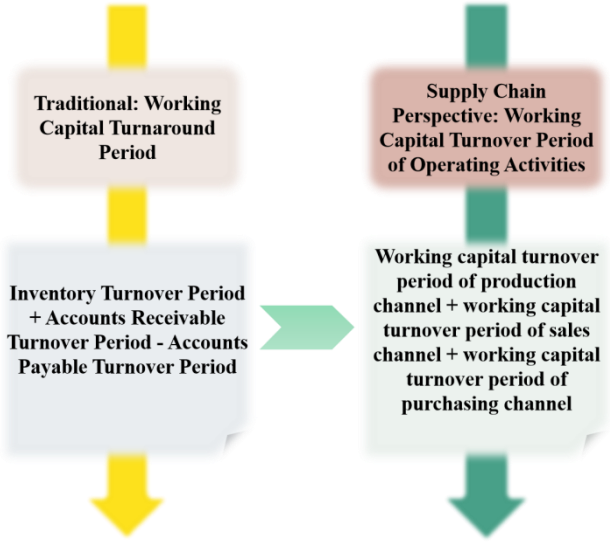

Figure 1 Analysis of working capital management from the perspective of supply chain

2.1 Supply Chain and Supply Chain Management

In order to improve the performance level of working capital management, enterprises should pay more attention to the research of supply chain management. The supply chain mainly includes: IT application, just-in-time procurement and effective customer response. Effective customer response can reduce the cost of enterprise operation through cooperation, so as to ensure that users can obtain greater benefits. In order to meet the needs of customers for products, it is necessary to implement effective strategies to improve the quality of product design and ensure that product positioning can meet the needs of users, the use of custom production, called delay technology, is also an important part of the supply chain strategy[4].

2.2 The link between supply chain management and working capital management

The supply chain mainly includes two models: mesh and chain, in the chain model, the products of the enterprise are produced for users, and the products will eventually be consumed by users, the chain model needs to go through manufacturers, distributors, etc. in the hands of the user. In this process, the product needs to go through a three-stage transfer, in which the product will complete a series of processes such as assembly and processing. Compared with the chain model, the supply relationship of the mesh model is relatively more complicated. The mesh model covers a very large number of manufacturers, in the mesh model, each manufacturer is regarded as an independent node, and there is a certain connection between these nodes, the connection between nodes is strong or weak, and with the change of time, the connection between nodes will also change to a certain extent. In addition, the supply relationship of products in the network model is stronger, and enterprises

should have a macro grasp of the supply relationship when conducting working capital management[5].

2.3 Inventory management

Inventory management occupies a very important position in the supply chain, and the nodes in the supply chain are the key to the production and operation of enterprises. Therefore, enterprises should reduce the unreasonable management in the supply chain, improve the level of inventory production and operation, reduce the production cost of the enterprise, eliminate the operating risks in the production process of the enterprise, and reduce the uncertain supply in the operation process of the enterprise, in order to achieve the purpose of reducing business risk. When conducting working capital management, enterprises should pay more attention to the design of supply chain inventory management, and combine inventory management technology with inventory forecasting, in order to effectively improve the level of enterprise working capital management.

2.4 Information Support Technology

In supply chain management, we should pay more attention to the application of new technologies, attach importance to satellite technology, electronic data exchange and other technologies, enhance information sharing and information integration between enterprise clusters to enhance the market competitiveness of enterprises. Information support technology can also enhance cooperation between enterprises to improve the effectiveness and efficiency of the supply chain[6].

3. Working capital management performance analysis

3.1 Company Profile

The nature of the company is a large listed state-owned enterprise with a registered capital of 300 billion RMB and huge assets, as of the end of 2017, China Mobile has 887 million subscribers, owns many well-known customer brands such as "Global Connect" and "Moving Zone", and is the world's leading telecom company by market value.

The author selects China Unicom as a horizontal comparison object, because both are leading companies in China's telecommunications industry, and the problems and challenges faced by working capital management are relatively similar. Table 1 shows the operating income of the two companies from 2016 to 2020.

Table 1 Operating Income of China Mobile and China Unicom

Years	2016	2017	2018	2019	2020
Mobile company	5818	6302	6414	6683	7084
Unicom company	2563	3037	2886	2770	2742

China Mobile's operating income from 2020 to 2020 was far greater than that of China Unicom, and the gap gradually widened. China Mobile's operating income will rise every year, while China Unicom's operating income has continued to decline after rising in 2017, which is related to its industry influence and marketing strategy[7].

3.2 Traditional factor-based working capital management performance analysis

According to the traditional factor-based working capital management performance theory, the relevant indicators of the financial statements of China Mobile and China Unicom from 2016 to 2020 are analyzed, the calculation results and trends of specific data are shown in Table 2.

Table 2 Statistics on the turnover period of various elements of China Mobile and China Unicom in the past five years

Project \ Year		2016	2017	2018	2019	2020
Accounts receivable revolving period	Mobile	7.25	7.94	9.17	9.56	9.68
	Unicom	18.78	17.55	19.93	21.73	22.47
Inventory turnaround time	Mobile	2.89	2.64	2.56	2.27	2.31
	Unicom	10.51	9.64	8.93	7.21	5.43
Accounts Payable revolving period	Mobile	76.66	98.92	125.44	131.21	127.47
	Unicom	145.38	113.44	140.20	212.10	184.20
Working capital turnaround period	Mobile	-66.52	-88.34	-113.71	-119.38	-115.48
	Unicom	-116.09	-86.25	-111.34	-183.16	-156.3

It can be known from the calculation results in Table 2 that, the inventory turnover period of China Mobile in the past five years is lower than that of China Unicom, which shows that China Mobile's inventory management is generally better than that of China Unicom. Generally speaking, the higher the inventory turnover rate, the less capital occupied by the inventory, and the stronger the liquidity. Inventories in the telecommunications industry mainly include mobile phones and other communication products, SIM cards, USIM cards, prepaid phone cards and low-value consumables, which are easy to turn around, this is why the inventory turnover period of telecommunications companies is lower than that of other manufacturing companies[8].

3.3 Channel-based working capital management performance analysis

Through the calculation of the working capital turnover period indicators of China Mobile and China Unicom's procurement channels and marketing channels from 2016 to 2020, the working capital turnover period of the business activities of the case enterprises can be obtained, as shown in Table 3.

Table 3 The working capital turnover period of China Mobile and China Unicom from the perspective of supply chain

Project \ Year		2016	2017	2018	2019	2020
Working capital turnover period of procurement channels	Mobile	-69.61	-80.18	-106.18	-120.65	-120.84
	Unicom	-124.26	-106.71	-118.74	-168.54	-189.93
Marketing channel working capital turnover period	Mobile	11.15	11.99	13.62	14.33	14.13
	Unicom	-32.36	-34.13	-36.66	-39.55	-37.62
Working capital turnover period of operating activities	Mobile	-58.47	-68.19	-92.56	-106.32	-106.71
	Unicom	-156.62	-140.84	-155.40	-208.08	-227.54

The working capital turnover periods of China Mobile and China Unicom's procurement channels are both negative, indicating that the amount of accounts payable and bills payable is greater than that of inventories and prepaid accounts, which is consistent with our previous analysis. Due to the leading positions of China Mobile and China Unicom in the telecommunications industry, the monopoly characteristics of the industry lead them to occupy more funds from suppliers and creditors, resulting in a large amount of payables for engineering and equipment, inter-network settlement and lease fees. From Table 3, it can be seen that the working capital turnover period of the procurement channels of China Mobile and China Unicom has been negative in the past five years, the overall trend is declining, in fact, it is occupying more creditors' funds, China Unicom has made more full use of commercial credit in the past five years, compared with China Mobile, there is still some gap, and the ability to use commercial credit for operational financing needs to be further strengthened[9].

4. Working capital management strategies based on supply chain management

4.1 Classification of supply chain flows based on working capital

The supply chain and the enterprise are a strategic alliance, if an enterprise wants to improve its own operating efficiency, it must improve the closeness of cooperation between the supply chain and the enterprise, and carry out cross-organizational business processes, fully consider the relationship between business processes and corporate working capital, and classify working capital in the process, it is divided into two types of operating funds: Operating activities and wealth management, funds for operating activities mainly include accounts receivable, accounts received in advance, etc., and funds for wealth management activities mainly include dividends receivable, advanced, etc.

4.2 Strengthen working capital management in the procurement process

When purchasing items, companies generally choose multiple suppliers, although choosing a supplier can reduce the changes in production, getting more concessions from suppliers can effectively use the cost of reducing waste when purchasing. However, it also increases corporate risk. In order to reduce supply risk, purchase from multiple suppliers. However, if there are too many suppliers, it will also cause risks such as increased management difficulty and increased total procurement costs[10].

In order to reduce operating costs, modern enterprises mainly use just-in-time procurement to purchase raw materials, reduce inventory and reduce working capital occupation, which requires suppliers to be able to deliver on time. Therefore, in the working capital management of the procurement process, it is necessary to pay attention to examining the credibility of suppliers, use qualitative and quantitative methods to assess the credit status of suppliers, track the credit status of suppliers in a timely manner, and adjust suppliers with poor reputation in a timely manner.

4.3 Integrate stakeholder concepts into supply chain management

The traditional working capital management is limited to the analysis of a single element, lacks the intrinsic link between the indicators, analyze working capital management performance from a supply chain perspective, it should break through the limitations of traditional working capital management, expand the scope of working capital management on the original basis, and integrate the concept of stakeholders into the supply chain, it is emphasized that the value-added of the enterprise is inseparable from the internal and external stakeholders of the enterprise, through cooperation, alliance or coordination with various stakeholders, a multi-win situation in the industrial chain can be achieved. Due to their industry characteristics, China Mobile and China Unicom do not have a complete production process, purchasing and marketing management occupy the upper and lower ends of the supply chain, connecting direct stakeholders such as suppliers and customers, occupy a lot of their commercial credit funds, so in the working capital management performance improvement strategy of such enterprises, more attention should be paid to implementing the management concept of stakeholders, expanding the focus and focus to the entire supply chain, and incorporating it into the enterprise's strategic management and working capital management, through close communication and cooperation, we will jointly enhance the core competitiveness of all enterprises in the supply chain and provide customers with better and more in-place services.

4.4 Reasonable use of commercial credit to reduce financial risks

Commercial credit between enterprises can effectively make up for the financing gap caused by inconsistent collection and delivery time in the supply chain, it provides the support of credit funds for enterprises, but it also brings challenges to the management of working capital of enterprises. Through the author's analysis of the working capital turnover period of China Mobile and China Unicom's operating activities, it is found that both companies have a large number of accounts payable and accounts received in advance, on the one hand, it shows that the two companies have made full use of the commercial credit of stakeholders in the supply chain, the working capital

turnover period is extended, and the capital utilization efficiency is high; But on the other hand, a large number of accounts payable and advance receipts increase the short-term debt level of the company and increase the interest expense, which leads to excessive financial risks of the company, and it is easy to fall into a vicious circle of defaulting on each other's accounts. Therefore, from the perspective of the entire supply chain, enterprise working capital management cannot only consider a single enterprise, instead, we should consider the cooperation of each member of the supply chain from a more comprehensive perspective, make reasonable use of the commercial credit of stakeholders, and maintain stable transaction relationships, consolidate supplier groups and customer groups, we cannot blindly pursue the improvement of operational capabilities while ignoring the solvency of the company, so as to ensure the liquidity and efficient operation of the entire supply chain[11].

5. Conclusion

To sum up, in order to manage the performance of working capital, it is necessary to pay more attention to the theoretical research of supply chain, in addition, the supply chain theory should be summarized to meet the needs of customers for working capital management. In addition, in the management of working capital, we should pay more attention to the application of information technology and improve the level of information sharing, in order to improve the level of working capital management.

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