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Analyses of foreign experience of digitalization of supply chain management at SME in China

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Abstract

Supply chain refers to the network chain structure formed by upstream and downstream enterprises involved in providing products or services to end-user activities in the production and circulation process. All the links are in a safe, fast and efficient way. Reducing costs, improving quality and production speed have become the unique advantages of its expansion. Good supply chain management improves their market share by improving productivity and utilising production competitiveness, raw material storage, commodity transportation, product processing and distributor selection. Informatization and digitalization are one of the hotspots of supply chain management research. For many enterprises, the informatization and digitalization of supply chain management are particularly important due to the complexity of their own business. This article expounds the characteristics of the supply chain and introduces the importance of its digitalization and informatization implementation steps, which includes some important matters needing attention. And the article analyses how a food producer located in Xinzheng, China pays less attention on the supply chain management. Due to the neglect of supply chain management, the company is slowly going bankrupt.

Keywords: *Supply Chain, Management, Digitalization and Informatization implementation, Small and Medium Enterprises*

1. Introduction

Although there are different criteria for the definition of SMEs across countries and industries, in general, SMEs account for a large proportion of both the number of firms and their contribution to the economy and employment. According to statistics, small and medium-sized enterprises in the United States account for about 99.7% of the total number of enterprises. There are more than 20 million SMEs in the EU, accounting for about 99.8%

of the total number of enterprises. Jobs are available for 75% of total employment. Contributes 60% of GDP. SMEs play an irreplaceable role in modern economic development, employment promotion and support for large enterprises.

The intensification of competition caused by globalization has brought great pressure to SMEs, on the one hand, to continuously improve product quality and service levels, on the other hand, to continue to reduce costs to maintain business. Coupled with the inherent disadvantages of SMEs in terms of their own scale and resources, the importance of their supply chain management is highlighted. However, at present, the research on supply chain management is mainly focused on large enterprises (supply chain core enterprises), and the research on SMEs is still very limited.

In the past two years, due to the impact of Covid-19, there have been frequent economic crises, strikes, security accidents, terrorist attacks and other risk events.

It has led to many supply chain crises dominated by supply and demand disruptions, bringing huge losses to enterprises in the supply chain. Smes are in a weak position in the supply chain, and lack the resources and perfect management system necessary to deal with risks compared with large enterprises, so they face greater supply chain risks and losses, and even lead to bankruptcy. Therefore, SMEs must take proactive measures to strengthen the prevention and control of supply chain risks in order to survive and develop in a constantly changing and unpredictable environment.

2. Digitalization and Informatization implementation of Supply Chain Management

The necessity of Digitalization and Informatization implementation

Supply chain contains a lot of information, complex supply and demand network. Customers are all over the country. Faced with numerous complex information, without the support of a unified and reliable information management system, it will be difficult for the management of the enterprise to manage the supply chain properly, and there will be no basis for formulating corresponding improvement measures. The value brought by the informatization of supply chain management is also very attractive (Wu Fuming, 2012).

1. Supply chain information management helps enterprises improve their competitiveness. Information is the core element of supply chain management, and also the foundation to improve the core competitiveness of enterprises. Whether the enterprise can accurately and timely obtain information, improve the response speed of the enterprise to the market and end customer needs, and make immediate response. Is the key to determine the competitiveness of an enterprise.

Supply chain informatization enables enterprises to receive market information in real time, reduces the time of information transmission and reduces the probability of information error.

In terms of responsiveness. Responsiveness refers to the speed at which the supply chain completes customized orders. Real time information is transmitted to relevant enterprises by the information platform, which shorts the response time of the supply chain, facilitates the formation of a closer alliance to make a quick response to the rapidly changing market demand, and improves the response ability of the supply chain to orders. (Wu Fuming, 2012)

2. Supply chain information management is the basis for efficient collaborative work of enterprises. Supply chain information visualization contributes to supply chain system coordination. There are many systems in the supply chain, including various systems, storage systems, transportation systems, sales systems. Managing any one of these systems involves a complex set of trade-offs, and the systems are linked.

To coordinate these aspects of the supply chain, a great deal of information must be available and shared among supply chain members. To be specific, it is of great value to know information such as production status, inventory cost, inventory level, various business capabilities and customer demand for coordination system, especially for cost-saving coordination system. (Wu Fuming, 2012)

3. Supply chain informatization management helps reduce enterprise operation and maintenance costs. The uncertainty in the supply chain is usually manifested by delayed arrival of goods, cancellation of customer orders, out-of-stock losses caused by machine failures, sudden changes in market demand, and the impact of technological uncertainty on costs. Uncertainty increases the amount of inventory in the supply chain dramatically. (Cooper J, 2013)

Supply chain informatization enables enterprises on the supply chain to make cooperative prediction, which can be repeated. All participants discuss future market conditions and work together to arrive at agreed forecasts. This means that all components of the supply chain share information, which reduces risk and thus inventory costs.

4. Information in the global supply chain includes supply source information, production information, distribution information, retail information and demand information. Supply chain information visualization provides effective supporting information for management. The effective flow is directly related to the decision-making and operation of enterprises. (Wu Fuming, 2012)

In large enterprises, information flows are complex. How to obtain, transmit and analyze these information and ultimately form various decisions to support the realization of corporate strategic goals will become critical. Supply chain managers must use this information to make important decisions that lead the supply chain, and the information system provides enterprise managers with more objective data and scientific analysis, which helps enterprise management to make the right decision at the right time.

The steps and keys of Digitalization and Informatization implementation

The implementation of supply chain informatization is a large project, so it conforms and follows the general theory of project management. Generally follow:

Project launch =>Project objective setting =>Project plan =>Project implementation =>Project completion => Project delivery operation. This paper will discusses some of the important steps and keys.

1. Project objective setting

As the supply chain has many sub-supply chain nodes, it is necessary to have a relatively clear project objective in the project initiation stage. The establishment of this goal is based on the analysis of the current business situation of the enterprise, as well as the goal the enterprise wants to achieve.

This goal must be discussed and agreed upon by the management of the enterprises. In addition, the enterprises's management should act as the Steering Committee of the project, and the high-level Steering Committee is the key to ensure the successful implementation of the supply chain informatization project. (Wu Fuming, 2012)

2. Product selection

The selection of Supply Chain Management system is an important step in the Supply Chain Management project. At this stage, enterprises will decide whether to develop their own products, adopt mature products, or customize development. Products selection directly determines the organization of the follow-up project team, as well as the recruitment of consultants. Generally, there are three ways:

(1). Use mature products;

(2). Self-development;

(3). Select mature product modules for secondary development. (Wu Fuming, 2012)

It is more suitable for supply chain information management project to choose a world-famous mature product for secondary development. Because self-development makes the project cycle is too long, and the cost is relatively high. How to choose supply chain management products needs to be combined with the actual situation of the enterprises to decide. For example, the fit and compatibility between the product and the enterprises, and the characteristics of the product itself, these are the key factors to consider.

3. Business process review and development

Business process development is very complex and very important one link, from the technical level of supply chain information system is a unified system, it laid the foundation for the standardization of business processes, but each subsidiary must make its original business seamlessly and docking, new system that will lead to some subsidiary in some on the business model transformation. (Wu Fuming, 2012) This also means that enterprises must sort out all the processes and redefine some of them. Because process definitions are fundamental to the business, they are so important that projects have to be careful with process definitions.

The following principles are available for reference:

(1) The principle of enterprises unification and coordination in the supply chain;

(2) The unified principle of management thought and strategy formulation;

(3) The principle of validity.

(4) The principle of streamlining redundant links;

(5) The principle of continuous improvement (Wu Fuming, 2012)

4. Orderly implementation

Supply chain informatization implementation is a project with large investment and long project cycle. In order to reduce the risk, the implementation of the project can follow a certain sequence. The following principles can be followed

1 Start from small project

Supply chain informatization project is a large and extensive project. The so-called "small" project means that one or two enterprises can start with the pilot project and start the implementation under the condition of uniform design. In fact, this is also the practice of most projects. Its benefits lie in:

(a). Depending on the effectiveness of implementation, then decisions can be made on whether to scale up and reduce risks.

(b). The experience of previous implementation can be learned to improve the quality of later project implementation.

2. From "up" to "down"

Supply chain information project is a large strategic project. The so-called top-down refers to the communication should be communicated from the top leaders first, and the implementation should also be carried out from the headquarters down to each subsidiary:

(a). Top-down communication ensures that projects receive adequate attention during implementation and are easier to advance.

(b). Top-down implementation can set up a model of successful implementation by the headquarters, which has certain appeal to other subsidiaries and is also a great encouragement to the project team.

Supply chain management in digitalization era

Big data is the product of the development of digitalization era. With the development of information technology, the supply chain management of big data has become the general trend.

By analyzing customer information data, market data, sales data and other massive information, enterprises can not only clarify the operation mode of the enterprises's supply chain management, improve the efficiency of supply chain management; It can also enable enterprises to fully dig out the truth behind the data and provide important basis for enterprise management and decision-making. (Gong Jiajing et al. 2019)

At present, the development of the digitalization supply chain operation management mode of some enterprises is not yet mature, and there are still many disadvantages. For example, product quality needs to be improved, data management needs to be improved, and industrial optimization and upgrading are insufficient. Therefore, it is necessary to improve product quality, improve data management and accelerate industrial upgrading to optimize the operation path of enterprise supply chain management in the era of digitalization.

Characteristics of digitalization

Digitalization information refers to the data collection that cannot be captured, managed and processed by conventional software tools within a certain time range. It is a massive, high-growth and diversified information asset that requires a new processing mode to have stronger decision-making power, insight and discovery power and process optimization ability. (Gong Jiajing et al. 2019)

In modern society, digitalization is most widely used in the field of social life. Of course, digitalization also has a wide range of applications in the Internet industry and the financial industry. These industries use big data to accurately locate customers and services, greatly improving the quality and efficiency of service. For the supply chain management of various enterprises, a lot of useful information is mined. Leverage data to improve operational efficiency in supply chain management. It is also helpful to promote the development and progress of enterprises.Digital information has the following characteristics. (Gong Jiajing et al. 2019)

1. Universality of application.

There is almost no limit to the use of digital information, not limited to a single industry, all walks of life are using big data to do information analysis, which shows its wide application.

2. High efficiency.

In the era of explosive growth of information, digitalization can efficiently analyze massive data and obtain important information behind the data, improve the operation efficiency of supply chain management and promote enterprise development.

3. Background of the time is strong.

Digital information is the product of the development of the times. Under the background of the times, data shows the characteristics of changing and diversified forms. Digital information is constantly developing and improving with the change of the times.

The important role of enterprise digitalization in SCM

The supply chain management mode of enterprise big data plays an important role in the work efficiency and development of the enterprise and its upstream suppliers. It is mainly reflected in the following three points:

1. Provide rich data

The most direct function of digital supply chain management mode is to provide rich data for enterprises. Including supplier information data, contractor information data, product quality information data, enterprise potential development prospects and direction data, etc. (Gong Jiajing et al. 2019) With digital analysis, supply chain management and operation will be more convenient and efficient, using the data provided by digital analysis and the important information behind the data. For example, through big data analysis of downstream distributor information, enterprises can provide corresponding services to downstream distributors more accurately, quickly and efficiently, and improve their work efficiency.

2. Providing direction for improving management

In addition to providing rich data for enterprises, the digital supply chain management model can also provide data and relevant information for the further improvement of the enterprises's management model, and help enterprises find the way which suitable for their development in a timely and efficient manner.

Collaborative digital analysis of supply chain management can timely see the advantages and disadvantages of enterprise management mode, find the problems of enterprise management, precise positioning, timely improvement, constantly improve the enterprise management mode, improve enterprise efficiency and comprehensive competitiveness. (Gong Jiajing et al. 2019)

Digital analysis stands out in a number of new technologies such as sharing economy, automatic drive, digital supply chain, cloud computing and advanced robotics. As the most widely accepted and highly recognized new technology, it can also be seen that digital analysis plays a huge role in supply chain management operation and development progress.

3. Provide basis for decision making

The results analyzed with the help of digitalization can not only provide direction for the improvement of enterprise supply chain management model, but also provide practical and reliable basis for enterprise management to make decisions in all aspects. These data come from working practice, and the decision basis provided is practical and reliable. digitalization plays an important role in the analysis and processing of product supply, management, delivery, supervision and other data, which can help enterprise managers make various decisions.

In addition, the development of the digital age has been unstoppable. The development of collaborative digital management mode of supply chain operation is the future development trend. Enterprises should timely optimize the industrial upgrading, improve the management structure, introduce big data management, constantly improve the management and operation methods of enterprises in all aspects, make full use of the supply chain operation management mode of big data, and promote the rapid and efficient development of enterprises.

Problems existing in enterprises of digitalization SCM

The digital supply chain operation management mode of enterprises has many advantages, which can provide a lot of important information and data for enterprise development, and provide important basis for enterprise management and major decision-making. However, at present, the development of digital supply chain operation management mode of some enterprises is not mature, there are some shortcomings and problems, mainly reflected in the following aspects:

1. Data management needs to be improved

The collaborative big data management mode of supply chain operation of some enterprises is not yet mature in terms of data management and needs to be improved. In this information age, data management is very important to the operation of enterprises. On the one hand, the continuous improvement of data management is also the process of making full use of digitalization in supply chain operation. The continuous improvement of data management is of great significance to the further development of enterprises. (Gong Jiajing et al. 2019) Therefore, in order to make better use of the supply chain operation management mode under digital analysis, enterprises must constantly improve data management.

On the other hand, supply chain capabilities also include real-time distribution tracking and advanced distribution systems, which need high-quality products to give full play to the advantages of the distribution system. Enterprises should constantly optimize their own industrial upgrading, improve data management, improve product quality, and achieve common development and progress with digital analysis. (Gong Jiajing et al. 2019)

2. Insufficient industrial upgrading

In the context of the information age, the explosive growth of information and the continuous development of social productivity make the management mode of enterprise supply chain operation coordinated with big data analysis emerge at the historic moment. Industrial optimization and upgrading is crucial to the survival and development of enterprises. Enterprises may fail to effectively expand the industrial chain, lack of effective market demand, high-quality upstream supplier selection and other problems. (Gong Jiajing et al. 2019)

In order to ensure that enterprises can keep up with the development of digital supply chain operation mode, enterprises should carry out corresponding structural optimization on the basis of maintaining the development of total output and keep moving forward with the update and development of the Times.

Matters needing attention in the implementation of informatization

Based on the above analysis of problems in the process of digital information, it is necessary to continuously evaluate and improve the digital process in practical work. The following points should be grasped in the evaluation and improvement work:

1. No missing items should be collected in the original information, the design should be reasonable, the filling should be standardized, the delivery should meet the requirements, and the audit should be serious. At the same time, the use of original digital information should be supported by corresponding program files.

2. The original digital information should be summarized, sorted and classified. According to the production process, it can be divided into: upstream supplier information and downstream distributor information. According to the internal structure of the enterprises, it can be divided into: management, finance, technical quality and so on.

In actual work, comprehensive classification can be carried out according to the specific situation of enterprises, which is more conducive to the development of work.

3. Members participating in digital information improvement shall be department heads and personnel familiar with the business process of the department and the enterprise. Including financial personnel, sales, production planning, purchasing, equipment managers, quality managers, information managers and so on.

4. With the progress of management and the application of new digital information tools, as well as the change of enterprise operation and management business, the improvement of digital information should be a dynamic process.

Through continuous evaluation and improvement of digital information, a good foundation has been established for the promotion of enterprise internal control work.

1. The business process has been optimized, the quality of information transmission has been improved, and a solid foundation has been laid for the promotion of internal control work.

2. To ensure the authenticity and integrity of the original digital information records.

3. To promote the enterprises's staff to further familiarize themselves with the business flow and management requirements, and integrate them into daily work to standardize management practices.

There are various measures to promote internal control, and it is a simple and easy way to choose the original digital information which runs through the whole process of enterprise internal control. Review, classify, transmit, monitor, evaluate and improve raw data. Make the basic work of internal control more solid and effective. Provides a solid foundation for comprehensively advancing internal control work to a higher level. (Wu Fuming, 2012)

SMEs features

According to the EU Commission's definition, the enterprise which has fewer than 250 employees and an annual turnover not more than 40 million Euros. Or an enterprise with an annual balance sheet of less than 27 million euros and no enterprise or several enterprises (not SMEs) owning 25% or more of the capital or voting rights of the enterprise shall be classified as SMEs. SMEs play an important role in EU economy. Until 2015, there were about 25 million enterprises of all types in the EU, SMEs take up 99.8 percent. 91.8 percent employed fewer than 10 people, the so-called micro-enterprises. SMEs account for 57.5% of turnover in the EU. Even so, the division of SMEs in each countries varies across the EU.

Countries	Name and division criteria
Austria	Small-sized from 1 to 99 employees. Medium-sized from 100 to 499 employees
Belgium	Small-sized under 50 employees.
Denmark	Small-sized enterprises, manufacturing, construction, commerce, service, repair, and crafts under 100 employees.
France	Small and medium-sized enterprises, manufacturing, service industry, more than 11 employees, less than 500 employees.
German	Small-sized enterprises, manufacturing, service employed under 49. Medium-sized enterprises, manufacturing, service employed under 499.
Greece	SMEs from 10-99 employees
Hungary	Medium-sized enterprises have fewer than 250 employees. Sales revenue less than 50 million euros, balance sheet less than 43 million euros Small-sized enterprises have fewer than 50 employees. Sales revenue or balance sheet less than 10 million euros
Italy	SMEs have less than 100 employees and less than 1.5 billion lira in capital
Netherlands	SMEs: Private enterprises employing less than 100 people.

Figure 1: Regulations on SMEs in some EU countries

Supply chain management at SMEs

1. Inventory

Inventory indicates that resources used for future purposes are temporarily idle. In general, people set up inventory to prevent shortages. It's like the water stored in a reservoir. In addition, it also has the role of maintaining the continuity of the production process, sharing the cost of ordering, and quickly meeting the ordering needs of users. (Miao Xianyong, 2015)

The establishment of inventories is due to the inability of SMEs to anticipate future changes in demand, so they have no choice but to adopt the means of coping with various changes. It is also because SMEs cannot make all raw materials fully used, which creates some redundancy and hoarding that people do not want.

Inventory has become an important part of SMEs' supply chain management. The right stock can help SMEs fully reduce costs and improve profits.

In this section, this article describes where SMEs use supply chain management in their inventory

On the one hand, SMEs should determine whether inventory is needed and how much is needed. SMEs are smaller in size and have less storage space. When more inventory is needed, some SMEs use the form of ownership of inventory materials belonging to the supplier. When this scenario is adopted. The quantity recorded on the book is zero, which seems to indicate that there is no inventory. But there are physical objects. This is due to the introduction of a scheme in which ownership of the goods belongs to the supplier.

On the other hand, if there is a provision for stockpiling, it is necessary to determine where these stocks are stored. Because SMEs themselves are smaller, storage capacity is limited. Therefore, it is necessary to decide whether to store it on the demand side or on the supply side.

In addition, it is further determined whether it is stored in the warehouse, or as work in process on the workshop, whether it is stored in the parts library or the finished product warehouse, or stored in several locations at the same time. Provisions should be made in advance for issues relating to storage sites, which are an important part of the terms of reference of managers and custodians. (Libo, 2007)

2. Production

SMEs can divide production planning into: sales order demand, sales stocking demand, raw material procurement, etc. Develop different strategic goals based on different supply chain needs.

In order to ensure that the enterprise has sufficient working capital, it will not be overstocked by raw material inventories of funds and resources. SMEs' production planning departments also strive to balance the contradiction between the guarantee of raw material supply and the level of production products. Ensure that while meeting the uninterrupted production operations, appropriately reduce the raw material inventory to a reasonable range, ensure that there is no product backlog, and ensure a reasonable inventory quantity.

These finished products should be classified by the audit department according to the actual situation to formulate a supply plan. Such a clear plan can not only account for the materials produced in a timely manner, but also timely discover the problems in the production plan and modify the plan reasonably to control the waste of materials and the loss of funds.

Main problems of SCM in SMEs

1. Communication problems

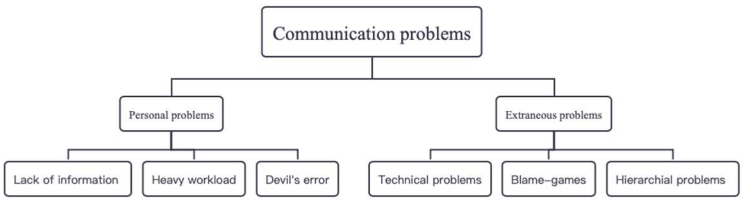

Figure 2: Main communication problems of SCM in SMEs (Nikhil k Mehta, 2014)

2. Produce process problems

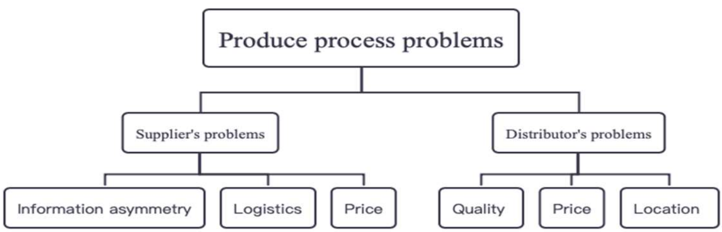

Figure 3: Main Produce process problems of SCM in SMEs

SMEs supply chain financing common mode

In the process of development of SMEs, the number of partners such as upstream suppliers and downstream distributors in the supply chain is always small. At the same time, it is difficult to attract investors' financing due to its low social status. Financing difficulties have always been a problem for SMEs. This chapter gives four suggestions on financing for smnes to face the current problems.

1. Accounts receivable financing

Accounts receivable financing can be divided into accounts receivable pledge financing and accounts receivable transfer financing according to the treatment of accounts receivable.

(1). The accounts receivable pledge financing is refers to the upstream suppliers to enterprise's account receivable creditor's rights as product apply for financing from financial institutions, financial institutions in after receipt of the application for the enterprise, according to the enterprise to provide the amount of accounts receivable financing according to certain proportion to give loans to the financing enterprises, in the loan expires, financing enterprises need to return the corresponding loans from financial institutions and interest. (Gao Xuan et al. 2021)

After receiving the principal and interest returned by the enterprise, the financial institution releases the receivables creditor's rights submitted by the enterprise before the loan and returns the receivables creditor's rights of the financing enterprise. In this process, the receivables creditor's rights are pledged to the financial institution as collateral. (Tan K.C, 2001)

(2). Accounts receivable transfer financing refers to the transfer of accounts receivable creditor's rights arising from the sales contract concluded between the upstream supplier and the downstream distributor to the financial institution providing guarantee. Financial institutions provide financial financing, buyer's credit evaluation, sales account management, credit risk guarantee, accounts collection and other comprehensive financial services. After the loan is due, the downstream buyer will pay the receivables to the financial institution in full. Factoring is divided into recourse factoring and non-recourse factoring. (Gao Xuan et al. 2021)

2. Movables property pledge financing

Movables property pledge financing means that enterprises store movables (commodities or raw materials, etc.) in warehouses recognized or designated by financial institutions as pledges. Under the supervision of financial institutions, enterprises can apply for financing to financial institutions. In the current market, the movable property pledge financing provided by financial institutions to SMEs includes various forms, mainly inventory pledge financing and warehouse receipt pledge financing.

Inventory pledge financing generally means that the enterprise sends all its movable property to the warehouse or logistics supervision enterprises designated by the financial institution, and obtains financing from the financial institution according to a certain pledge rate. (Tan K.C, 2001)

Warehouse receipt pledge financing is refers to the enterprises to exchange or financial institution approved by the warehouse receipt (proof of bill of lading) as the pledge, according to certain loan-to-value ratio apply to financial institutions for financing, which is must conform to the requirements of the exchange, unified, standard warehouse receipt delivery warehouses, designated by the exchange in the completion of a series of warehousing formalities, registered by the exchange effect of standardized physical documents to pick up the goods.(Liu Yingnan et. al 2014)

3. Order Financing

Order financing refers to the formation of product orders by enterprises according to commercial contracts signed with buyers. Relying on its own credit status, good production capacity and mature technology as the guarantee of the premise, relying on orders to apply for loans from financial institutions.

After obtaining the loan, the enterprise uses the loan funds to purchase raw materials and organize production, and then sends the products to the buyer to repay the principal and interest of the loan to the financial institution immediately after receiving the payment. (Gao Xuan et al. 2021)

At present, with the rapid development of Internet technology and e-commerce, the mutual integration of Internet finance and supply chain has formed the electronic order financing mode. That is, suppliers sign e-commerce contracts with buyers through e-commerce platforms and generate corresponding electronic orders online. Suppliers can rely on the resources of the platform to apply for loans online from financial institutions on the platform.

4. Prepaid account receivable financing

Prepaid account receivable financing is refers to the signing of a sales contract between the enterprise and the upstream supplier (buyer) and the downstream distributor (seller) of the supply chain. Financial institutions may issue prepaid account financing funds to enterprises upon application. Generally speaking, prepaid account receivable financing mainly includes confirming storage financing and financing of future delivery rights.

Confirming storage financing refers to bank credit as the carrier, in bank acceptance for settlement tool, controlled by the bank of goods, warehousing fiduciary custody of goods, the acceptance deposit amount of the partial buyback as guarantee measures, with the goods by the seller by a bank to the supplier (seller) and its distributors (the buyer) provided by the bank acceptance as the method of payment is a kind of financial services. (Gao Xuan et al. 2021)

This model requires the participation of upstream suppliers, downstream distributors (financing enterprises), banks, and warehousing regulators in the supply chain. That is, under the premise that the supplier (seller) undertakes to repurchase, the financing enterprise (buyer) applies to the bank for financing business with the loan amount pledged by the seller's established warehouse receipt in the bank's designated warehouse and the bank controlling its right to deliver the goods as the condition. The bank further excavates customer resources through this mode, and at the same time takes the property right as the guarantee, which is beneficial to reduce the risk of the bank.

Financing of future delivery rights refers to the financing business in which the buyer applies for financing based on the purchase and sales contract between the buyer and the core customer and the right to take delivery in the future and uses it to pay for the goods. After the financing is successful, the buyer can take delivery of the goods in the third-party warehouse with the bill of lading issued by the bank as the proof of delivery, and the sales payment as the first repayment. (Gao Xuan et al. 2021)

Financing of future delivery rights can help buyer enterprises to advance financing, timely complete payment, effectively enlarge their delivery capacity, and help them to obtain higher price discounts. At the same time, the seller can also be exempted from the buyback guarantee, with better market adaptability. In addition, various financing instruments, including loans, bank acceptance bills, etc.

SMEs supply chain financing risk

With the continuous reform and development of the financial market, the financing environment and financing costs of SMEs have gradually improved. However, compared with large enterprises, SMEs are at the end of the industry, relatively weak in economic strength, and low financial transparency. It is often identified as a high-risk customer by financial institutions, and it is difficult to obtain loans from financial institutions. (Liu Yuan et al. 2016)

Supply chain financing can be used as an effective solution to the financing difficulties of SMEs. In the process of supply chain financing. Financial institutions will link the risks that are difficult to control that will only appear in small and medium-sized enterprises with the higher credit of large enterprises to reduce the financing risks of SMEs. And SMEs can take advantage of the industry advantages and good credit conditions of large enterprises in the core position of the industry to apply for financing from financial institutions, and it is easier to obtain corresponding financing support. (Gao Xuan et al. 2021)

However, in the process of supply chain financing, because there are more enterprises involved in the upstream and downstream of the supply chain, SMEs face more risk factors in the financing process. At the same time, the research of SMEs on a series of related credit risks is relatively backward. Therefore, it is necessary to comprehensively and objectively understand the current supply chain financing mode of SMEs and deeply analyze the risk factors in the supply chain financing process of SMEs. It is of great significance to improve the financing environment of the supply chain of SMEs and promote the healthy development of SMEs.

Analysis of financing risk factors of SMEs

The risks of SMEs in supply chain financing can be divided into external environmental risks and risks posed by each internal participant.

1 External environmental risks

The main external risks of the supply chain can divided into two categories.

One is the policy risks faced by supply chain development. The uncertainty of the future financing environment of SMEs is also affected by the maturity and cyclical nature of the industry in which the supply chain is located. At the same time, industry-related policies promulgated by relevant government regulators will also affect the future supply chain financing behavior of SMEs.

The other is that the industry position of the supply chain industry will also bring some impacts and risks. If the supply chain is relatively weak in the market in the industry, the stability of all links of the supply chain will be poor. Vulnerable to external factors, increasing the credit risk of SMEs. In turn, financial institutions will reduce the credit evaluation of SMEs in the supply chain and affect enterprise supply chain financing.

2. Risks posed by participating entities in supply chain financing

(1). The core enterprise side

The core enterprise of the supply chain refers to the enterprise in the core position in the industrial chain, which can be controlled by capital flow, information flow, logistics, etc. Starting from the procurement of raw materials, the production and manufacture of intermediate products as well as the production of finished products. Finally, the goods are sold to the consumers through the sales network. Can fully integrate suppliers, manufacturers, distributors, retailers in the supply chain relationship. Therefore, core enterprises play a very important role in supply chain relations.

The operation of enterprises and the supply chain strategy adopted externally will directly have a series of impacts on upstream suppliers and downstream distributors. If the core enterprises in the supply chain their own operations deteriorate and their credit ratings are downgraded, financial institutions are bound to take countermeasures, for instance early receive of loans. Then SMEs that rely on them for supply chain financing in their industrial chains are bound to be affected by their risks. (Gao Xuan et al. 2021)

(2). The SMEs side

Financing of SMEs through supply chain. SMEs financing through a good supply chain system environment. Rather than ignoring factors such as the company's own operating ability and credit situation because of the supply chain financing behavior of SMEs. Moreover, the first repayment of most supply chain financing products is still the SMEs themselves. Therefore, the operating capacity and credit status of SMEs are still closely related to the risk of supply chain financing. (Gao Xuan et al. 2021)

Under the premise of supply chain financing, although financial institutions will examine the financing risks of SMEs from the perspective of the supply chain as a whole. However, as the main body of financing, financial institutions will still conduct a certain assessment of the operating ability, solvency and credit rating of SMEs

(3). The financial institutions side

As a part of providing funds in the supply chain financing of SMEs, the instability of financial institutions' own behavior is an important factor in generating financing risks. This factor is manifested in its form as long as there is a risk in supply chain lending behavior, although this supply chain financing risk is a characteristic inherent in the financial market itself, its root cause is caused by the operation and expansion of financial capital. (Gao Xuan et al. 2021)

Therefore, factors such as the business strategy and risk appetite of financial institutions will also bring certain risks to enterprises, and selecting suitable financial institutions for supply chain financing can effectively reduce the risks caused by financial institutions.

(4). The third-party supervision of the enterprises side

In supply chain financing activities, financing products such as movable property financing will involve logistics and warehousing third-party regulatory enterprises. During the period when a financial institution provides supply chain financing to an SMEs, the third-party regulatory enterprises will keep the collateral provided by the SMEs according to the requirements of the financial institution. At the same time, the regulatory ability of third-party regulatory enterprises directly affects the smooth realization of supply chain financing. Once there is a problem in the regulatory process, a series of risk events will arise.

Prevention and control strategy for SMEs

1. Strengthen review and improve business contracts

Supply chain financing is based on the real trading background of upstream and downstream enterprises, so it is very important to whether the transaction is real and compliant. It also has an important impact on the credit risk of SMEs. When reviewing the relevant materials of the supply chain financing of SMEs. The financial institution focuses on reviewing the business contract of the supply chain financing and the corresponding invoices and other transaction vouchers of the contract. (Gao Xuan et al. 2021)

Therefore, when SMEs sign commercial contracts with the outside world, they should strengthen compliance review, focus on reviewing the legality of the contract terms, and avoid trade risks due to contract formation, which in turn brings risks to their own supply chain financing. Therefore, when SMEs sign commercial contracts with the outside world, they should strengthen compliance review, focus on reviewing the legality of the contract terms, and avoid trade risks due to contract formation, which in turn brings risks to their own supply chain financing.

2. Enhance the strength of the enterprise

SMEs start from themselves to strengthen business management. Continuously improve the operation and management ability of enterprises, improve performance, market competitiveness and profitability. By increasing research and development investment, we can improve the welfare of technical personnel and enhance competitiveness. At the same time, it is necessary to actively grasp the government's technical support and financial support for SMEs, and continuously improve their ability to carry out technological research and development and innovation. Improve the credit rating of enterprises in financial institutions and the ability to resist financial risks in the supply chain by enhancing their own strength.

3. Cultivate supply chain professionals

SMEs can recruit and cultivate talents with supply chain expertise according to the development needs of their own supply chain business. At the same time, SMEs could carry out personnel skills training, strengthen business learning and experience exchange, and master comprehensive knowledge in practice. High-quality talents are conducive to SMEs to find risk points in the supply chain business and maintain sufficient risk sensitivity. At the same time, through the optimization of a reasonable employee mechanism, an effective incentive mechanism is established. Through a professional supply chain talent team, strengthen the risk prevention of SMEs supply chain business and avoid losses caused by risks.

A brief case study of SCM based on Company X

Company X is a beer producer, faced many problems in the early days of its establishment, and after continuous operational development, it became a well-known beer company in the local area

1. The main problem in the management of the supply chain

(1) Chaotic transportation prolongs the pain of "preserving freshness" caused by mistakes. (Wu Zhiyong, 2015) During the period of continuous expansion of the beer market, the chaotic logistics network became a bottleneck for further development. The chaos of transportation puts the freshness of the beer to the test. Due to the weak monitoring and management, the sales of the remaining fresh beer returned to the manufacturer, forcing the reputation to decline, affecting sales.

(2) Waste of funds brought about by high inventory. (Wu Zhiyong, 2015) Due to the chaos in transportation, a series of problems in production and sales have been brought about by enterprises, which ultimately led to unfavorable market supervision. As a result, companies' forecasts for sales plans were inaccurate, causing the credibility of safety inventory data to decline sharply to almost zero.

(3) Problems caused by the bullwhip effect. (Wu Zhiyong, 2015) Changes in demand in the supply chain affect production plans, increase the large amount of capital investment, and greatly reduce the value of funds. The long whip effect sometimes leads to a decrease in revenue due to out-of-stocks, thereby misleading production and ultimately leading to the inability to implement the "freshness strategy".

2. Solution to the problem

(1) Create a collaborative supply chain platform.

Open up the entire supply chain and establish a unified platform. Company X is not only responsible for market management and expansion, but also responsible for logistics operations within its scope. Due to the effective maintenance of the terminal, Company X's products can accurately make sales plans and report to China Merchants Logistics. Throughout the development process, establish a long-term and effective collaborative supply chain platform. This makes "freshness management" possible. (Wu Zhiyong, 2015) As shown in the figure 4.

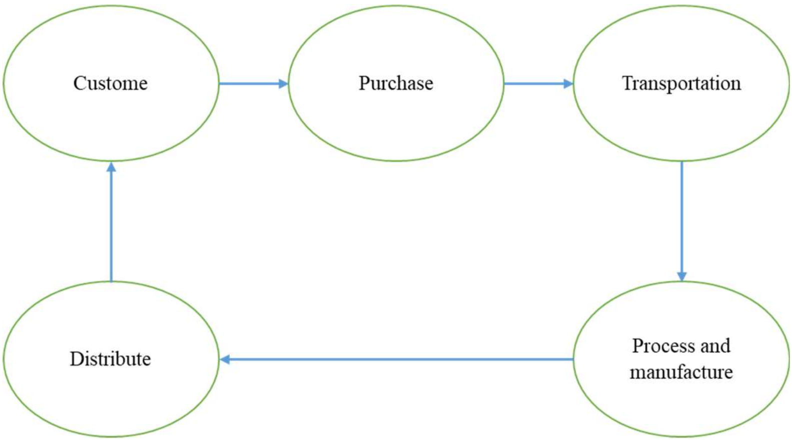

Figure 4 Company X Supply Chain Cycle Diagram (Wu Zhiyong, 2015)

(2) Optimize the inventory structure.

In the logistics and distribution process, Company X plans a specific time for each distribution route and implements automatic vehicle stowage, thereby improving the efficiency and stowage rate of vehicles. In the management of storage equipment, the original warehouse and logistics functions have been abolished, and the distribution network system of "central-regional-customer" has been implemented. Truly achieve the behavior of enterprise optimization inventory structure.(Wu Zhiyong, 2015)

(3) Digital information management and personnel management.

From transportation to warehousing, Company X has changed the past human management mode, with the help of digital information to make orders, train key personnel of enterprises, and cultivate a group of professionals for enterprises. At the same time, we will actively introduce a group of high-end talents in the industry to strengthen product innovation. (Wu Zhiyong, 2015)

On the other hand, it is necessary to maintain the stability of the technical workers in the production line of enterprises, standardize personnel management, create a good enterprise environment, and vigorously carry out vocational training. By creating a space for upward mobility of talents, we cultivate a good corporate culture to ensure that talents can be attracted and retained. (Wu Zhiyong, 2015)

3. Conclusion for Company X

Company X analyzed the problems in supply chain management, proposed countermeasures and implemented them, making Company X thriving and becoming a well-known local brewer.

Conclusion

The above suggestions for SMEs supply chain financing model, financing risks and major problems should be based on SMEs' continuous optimization of the supply chain. The big data management model of enterprise supply chain operation and collaboration came into being with the development and progress of enterprises and the inevitable requirements of the information age. (Gong Jiajing et al, 2019)

Therefore, enterprises can not only introduce this management model, the enterprise itself must also optimize industrial upgrading in a timely manner, continuously improve the enterprise management structure, and optimize the business model. Enable the business itself to keep up with the times and the development of the supply chain. With the coordinated development of the two, enterprises can integrate with the development model and make progress together. The industrial upgrading of enterprises can not keep up with the pace of development of the times, it can not be in line with the new management model, but will have an adverse impact on the development of enterprises, therefore, timely industrial upgrading, the development of the supply chain management operation mode of big data is of great help.

Enterprises that adopt the supply chain operation management mode of big data, on the basis of continuously optimizing the industrial upgrading of enterprises, the supply chain operation will better reflect the advantages of big data analysis. For example, order fulfillment cycles can be significantly shortened and supply chain efficiencies can be greatly and efficiently improved. In addition to these major aspects, the improvement of demand-driven operations and the optimization of service prices also include the optimization of supply and demand. (Gong Jiajing et al, 2019)

In summary, enterprises should continuously improve product quality, pay attention to supply chain management, improve big data analysis, and pay attention to optimizing industrial upgrading. In this way, the development of enterprises can be synchronized with the development of supply chain management, and the role and advantages of big data analysis under supply chain operation management can be better exerted, so as to promote the sustainable and efficient development and progress of enterprises.

3. Analyze how a Chinese food company face bankruptcy through Supply Chain Management

Company Profile: Company A Food Co., Ltd. was established on August 16, 2006, registered in Xinzheng, China. The registered capital of 12 million yuan equals 1.7 million euros. The scope of business includes (a). Soy product processing. (b). Sales: agricultural and sideline products, pre-packaged food, fruits, aquatic products, fresh meat products, sauce and pickled products, grain and oil products (c). Catering services

Company A development history: Company A was established on August 16, 2006. In 2015, Company A reached its peak. After 2016, the company began to go downhill due to poor management. This article focuses on the reasons for the downward spiral due to company management problems after 2016.

3.1 Questionnaires Analysis

The authors distributed a total of 5 questionnaires to the five managers of Company A, and 5 copies were actually recovered. 18 copies were issued to 18 employees of Company A, and 17 copies were actually recovered.

3.1.1 Employer

The author analyzes the academic qualifications, professional abilities, etc. of the 5 managers of the company. Among them, there are 1 graduate student and 2 undergraduate students. The analysis of professional capabilities is shown in Figure 5. Hold means that the manager is proficient and can use the skill on the job. Knowledge means to be generally understood, but not skillfully used at work. Incomprehension means not very well understood, completely unusable at work.

Ability Analysis	Hold	Knowledge	Incomprehension
Management			
IT			
Sale			
Production			
Market forecast			
Finance			
Accounting			
HRM			

Figure 5.1 Chairman's ability analysis

Ability Analysis	Hold	Knowledge	Incomprehension
Management			
IT			
Sale			
Production			
Market forecast			
Finance			
Accounting			
HRM			

Figure 5.2 Manager 1's ability analysis

Ability Analysis	Hold	Knowledge	Incomprehension
Management			
IT			
Sale			
Production			
Market forecast			
Finance			
Accounting			
HRM			

Figure 5.3 Manager 2's ability analysis

Ability Analysis	Hold	Knowledge	Incomprehension
Management			
IT			
Sale			
Production			
Market forecast			
Finance			
Accounting			
HRM			

Figure 5.4 Sales supervisor's ability analysis

Ability Analysis	Hold	Knowledge	Incomprehension
Management			
IT			
Sale			
Production			
Market forecast			
Finance			
Accounting			
HRM			

Figure 5.5 Purchasing supervisor's ability analysis

The authors analyzed the abilities of five managers in the company and found that:

1. The company's senior leaders do not have IT capabilities, and the company's IT-related business is outsourced to other companies.

2. Although the company is not large, most of the leaders have management capabilities. There is some conflict in this regard.

3. The company's leaders believe that their market forecasts are more accurate.

4. The three leaders of the top management have not studied the knowledge of finance, only the sales manager majored in finance during the university period.

3.1.2 Employee

The author's questionnaire for the company's 17 employees mainly started from the following aspects: gender, age, education, marital status, the previous job and satisfaction with the job in front of them. The 17 questionnaires collected for employees were analyzed.

1. Most of the company's employees are married women aged 30-40, with greater pressure in daily life and low motivation for work.

2. Most of the company's employees have college degrees, and several people have high school degrees, and their academic qualifications are generally low.

3. Most of the employees are local farmers, who have less work experience before getting this job and are not efficient.

4. The time of service in the company is less than one year, and the sense of responsibility for the company is low.

5. 12 out of 17 employees are dissatisfied with the current company's reward and punishment system, believing that the company has fewer rewards.

6. Most employees believe that the current work salary is at a reasonable level, and only 2 employees are satisfied with the current work salary.

3.2 Interview Survey on Company A’s Supply Chain Management

The author conducts interviews and surveys of 5 senior leaders of Company A (1 chairman, 2 general managers, 1 sales supervisor and 1 purchasing supervisor).

Asked the following questions

1. Whether production and marketing are coordinated in supply chain management.

2. Whether the supplier is centralized.

3. Whether the supplier's lead time is stable.

4. Whether there are no value factors in daily production activities.

5. Whether there is a bullwhip effect.

The most important of these issues are the I, IV, V and the authors focus on these three issues with five managers of Company A.

3.2.1 Survey Analysis

After interviewing 5 managers, it was learned that Company A had problems with the following aspects

1. Production and marketing are not coordinated. The problem of uncoordinated production and marketing is the most common problem in supply chain management. SMEs mainly follow the following principles in the production process of products: market forecasting - production planning - procurement planning - start production. Company A's main problem in this process is market forecasting. Company A overestimated its own market share and people's spending power. Company A believes that the pricing of its products is at the middle level of the city, and the prices of such products are not high. Company A's main store is located in xx district of Xinzheng, while xx district has low consumption power. Because Company A's products are affected by better packaging, store rent, etc. The price of the product is 1.1 times that of a supermarket. People are reluctant to buy in stores. At the same time, there are three large soy product suppliers in Xinzheng City plus Company A. Company A accounts for only 18% of all sellers in the city. Especially in areas with high people's spending power, the number of stores accounts for only 20% of company A, less than 4% of the city. So the wrong market forecast leads to Company A's products often being easy to sell, resulting in long-term storage and even expiration.

2. Suppliers are more concentrated. The main raw material of Company A's products is soybeans. Company A has contracts with several large local farms. Several farms became the main raw material suppliers for Company A.

3. The supplier's delivery cycle is relatively stable, but the price of raw materials fluctuates greatly. Company A's main raw material soybeans are crops. Each year, it is seriously affected by natural conditions such as temperature and precipitation. Soybean production varies from year to year. In 2016, Xinzheng suffered heavy rains that reduced the yield of all crops by 30%. This makes the price of soybeans rise, while the price of Company A's products cannot rise. As a result, Company A lost more than 1 million yuan in the year, which was equivalent to about 160,000 euros.

4. There are more worthless factors in daily life.

(1). The chairman of Company A mainly engaged in advertising media and other promotional activities in her youth. Company A invested a large amount of money in product promotion in the early days of its establishment. At the same time, Company A has always hoped to become a listed company, and Company A has invested a lot of money in this regard. For SMEs that have just started, although they need to carry out brand promotion, they first need to increase investment in research and development in their own products. Company A did not properly use the funds in product and supply chain management.

(2). After suffering a large loss in 2016, Company A acquired soybeans on a large scale in 2017 to prevent large-scale natural disasters, and its inventory increased significantly. As a result, the company's original storage space is not enough, and high-priced leasing of warehouses has also become the company's main expenditure.

(3). Employee motivation is not high. Company A is mainly staffed by workers with a low level of education. More than 90% of senior students have a high school degree or below. Most employees have a poor sense of responsibility. In addition, in the early days of the company's establishment, there were fewer incentives, making the quality of the production products lower. Employees produce for the sake of coping with production.

(4). There is a bullwhip effect.

Bullwhip effect refers to: when the nodes in the supply chain only make production or supply decisions based on the demand information from their neighboring subordinate enterprises, the untruthfulness of the demand information will go up the supply chain, resulting in a step-by-step amplification phenomenon. When the information reaches the supplier at the source, the demand information obtained and the customer demand information in the actual consumer market are greatly deviated. As a result of this demand amplification effect, the supply side tends to maintain higher inventory levels, or production readiness plans, than the demand side.

Company A is mainly engaged in the food processing industry. And for food companies. Packaging, etc. needs to be entrusted to other suppliers. According to an interview with Company A, because of the small number of personnel, the management in this regard is more negligent in not changing suppliers regularly and using the optimal cost method. As a result, there are some problems such as high costs, incorrect information, and so on.

3.3 SWOT Analysis

Strengths

1. Company A is smaller and facilitates supply chain and people management.

2. In the early stage of entrepreneurship, the company's personnel have confidence and enthusiasm.

3. Abundant funds. Company A does not require a particularly large capital investment.

4. Advantages of product resources. For agricultural product processing enterprises, the market demand is relatively large.

5. Low operating costs. Company A does not need to invest heavily in day-to-day business management.

Weaknesses

1. Company A has no ideal advertising channels, less daily publicity, and lower public awareness.

2. Company A does not have a suitable sales force.

3. Company A has low ability to train supply chain management professionals.

4. Company A has a relatively single selection of suppliers and distributors. Suppliers are only local farms, and distributors are mostly brand stores and supermarket chains.

5. SMEs are less placed in the supply chain and have a slower access to information.

Opportunities

1. Company A's main products have a high market popularity and a wider audience.

2. The market price of all Company A products is not high. As mentioned earlier, Company A needs to open stores in areas with strong spending power.

3. The government's policies and financial support for SMEs will help the development of SMEs.

4. The industry has broad prospects. Agricultural products are closely related to people's daily lives.

Threatens

1. The shelf life of Company A's main products is short and should not be stored. Once it expires, it will cause losses.

2. SMEs are easy to be suppressed by large enterprises in the process of development.

3. Competitors may be increasing for SMEs.

4. Affected by Covid-19, the economic development trend is not optimistic.

For the future development of Company A, the author give the following suggestions.

1. Closely follow the government's policy support for small and medium-sized enterprises in recent years.

2. Broaden the financing model and do a good job in supply chain management.

3. Recruit IT talents, now is the Internet era, follow the trend of the times to develop.

4. The company's funds need to be used in the right place, and one project needs to be done well before starting the next one.

5. Employee compensation needs to be improved, and most of the employees of Company A are not satisfied with the salary package. Improve the reward mechanism.

6. If the funds are sufficient, the staff team should be updated appropriately. At present, most of the employees are low-productivity groups.

4. Conclusion

SMEs are an important part of the economic system of various countries, and the economic development of SMEs will drive the development of the entire economy. However, in the face of the slow economic development of the Covia-19, SMEs are in trouble. Breaking through this dilemma not only requires the country's macro-control and vigorous funding of capital, but also requires enterprises themselves to take measures to cope and enhance their coping capabilities.

With the rapid development of digital supply chain management, more and more SMEs have embarked on the road of digitalization transformation. Research shows that SMEs are constrained by resource capabilities in the process of digital transformation, often requiring cooperation between upstream suppliers and downstream distributors, as well as the support of large enterprises. However, because of the restrictions imposed on SMEs by large enterprises, information is not shared. Hinder the sharing and application of digital knowledge by SMEs, which in turn negatively affects digital transformation performance.

How to find the entry point for SMEs and embark on the road of information supply chain management is a problem that every enterprise must face. On the basis of introducing the importance of digital supply chain management for SMEs, this paper also analyzes the problems that currently arise in the implementation of informatization. At the same time, this paper also lists several solutions to problems such as financing difficulties for SMEs.

It should also be clearly recognized that the digital supply chain management of SMEs is a gradual process that cannot be achieved overnight. The digital supply chain management strategy of SMEs proposed in the article mainly lies in the digitization of the internal supply chain of the enterprise. The degree of digitalization of SMEs also depends on the level of social digitalization and industry digitalization.

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