



A Study of the purchase cost control problem and optimization scheme of Saint Roba company

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Abstract

Saint Roba company is a chain catering enterprise in China, in the fierce market competition to strengthen their own procurement management. This paper first introduces the company, presents the status quo of the procurement cost of Saint Roba company, and then analyzes the reasons for the procurement cost control of Saint Roba company from the aspects of material characteristics, organizational structure, process, and supplier management. Finally, the corresponding improvement measures are proposed for these problems. Aiming at the problem of supplier management, this paper puts forward the quantification of the supplier selection coefficient, USES the analytic hierarchy process and matrix to calculate the weight of the criteria for supplier selection, and then selects the supplier according to the actual score and the score of the supplier. The importance classification of products is the ABC classification. Make adjustments in organizational structure and process management that are in line with the actual situation of Saint Roba to improve work efficiency. In the supplier management, the current single supplier status is adjusted, and the supplier competition management is increased while the supplier relationship management is adjusted.

Keywords: Procurement management, Cost control, Saint Roba Company, Profits

1. Introduction

Due to its flexible operation, rapid expansion, and important characteristics of accumulating original funds, many investment entrepreneurs will choose this industry to accumulate their original funds. At present, the catering industry has entered the state of competition because of the development of science and technology. The catering industry is no longer a profiteering one. To attract customers, the general catering enterprises will maintain the consistent price of their products and even take some promotional actions. Therefore, reducing the cost of their products is an important way for enterprises to maintain profits. (Zhou, 2018) proposed to effectively control the cost of catering enterprises, by establishing an advanced cost management concept, make clear the responsibility subject, optimize the cost accounting system, attach importance to the cost accounting procedures, improve the cost system in the flow of raw materials, and promote the cost control mode of all participating staff. (Li, 2019) pointed out that with the rapid development of the market economy, the market development situation faced by enterprises is becoming more and more severe, and the competition pressure is also growing. In this context, if an enterprise wants to improve its core competitiveness effectively, it must enhance its purchasing management, to effectively reduce the cost of its production and operation, and provide more powerful support and guarantees for its sustainable development. This paper does not only introduce the knowledge related to the theory of raw material purchase cost control but also analyze the existing problems of raw material purchase cost control in the Saint Roba company by using scientific and systematic analysis methods and technology. Combining the purchase management theory, inventory management theory, and supplier management theory, we can find and improve the raw materials of the Saint Roba company. The effective strategy of material purchase cost control widens the research scope of raw material purchase cost control, reduces the waste of raw material purchase, and increases the business income and profit of the enterprise.

[1844]



2. Objectives

2.1 Design rules and regulations.

Based on the analysis of the purchase data and current situation of the company, taking the cost control of the company as an example, this paper analyzes the cost control of the company according to the rules and regulations of the purchase, the purchase process and the supplier management, to lay the foundations for the design of the purchase cost and taking further measures to strengthen the cost management.

2.2 Strengthen the company's procurement management.

This paper discusses the use of AHP to select and evaluate suppliers, to reduce the impact of subjective judgment errors on cost control. After more than 100 years of practice (Li, 2017), it has proved that the application of ABC classification has played an irreplaceable role in enterprise material management. Based on the definition of ABC classification, this paper expounds on its development and application in enterprise management. In this paper, ABC classification is also used to classify the procurement categories of Saint Roba company. Different procurement methods are adopted for different types of products instead of unified procurement methods, to save procurement costs and improve the operation efficiency and market competitiveness of Saint Roba company.

3. Materials and Methods

3.1 Case Analysis

Zhao and Zhao (2016) proposed that the improvement and perfection of the internal control system of enterprises play a very important role in strengthening the governance of internal structure, blocking loopholes in internal management, and improving the competitiveness of private enterprises. This paper takes the Saint Roba company as a research target to reveal the existing problems of the enterprise in response to the project-oriented industrial operation environment through an investigation into the company's purchasing management, and interviews with the relevant personnel of the enterprises. The researcher interviewed the warehouse keeper, the buyer and the lobby manager.

3.2 Combination of Quantitative and Qualitative Analysis

Liu (2013) proposed that the rapid development of small and medium-sized catering enterprises is driven by sustained economic growth, and that competition is becoming more and more fierce. Most small and medium-sized enterprises are unable to respond effectively to the market due to lack of experience and skills required to grasp the important essence in the development process of enterprises. Therefore, this paper is not limited to qualitative analysis. After introducing the basic theory, it will use charts and models to make the problem analysis clearer and easier to understand.

4. Results and Discussion

This research uses the Kunming Seafood and BBQ Buffet Branch of the Saint Roba company as an example. This company was founded in 2006 and deals mainly in seafood barbecue, Chinese and Western buffet, barbecue, pastry and other 400 dishes. It is a large catering-chain company. The store opened on August 10, 2018, covering an area of 1,500 square meters, with an average daily reception of more than 1,000 people, and a price of 89 yuan per person. The price of a high-end buffet in Kunming is more than 200 yuan per person, so the store is positioned in the mid-range of the buffet beverage industry. This paper observes and analyzes the operation and procurement of the store since January 2019, and finds some problems in the procurement of catering enterprises. Then based on the data analysis, this paper explores the problems in the procurement management of catering enterprises and offers effective solutions.

**Table 1** the main cost expenditure of Saint Roba catering company from January to December 2019 unit : 10,000yuan

Project	January	February	March	April	May	June	July	August	September	October	November	December
rent	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
Raw material procurement	33.98	34.88	36.78	35.86	34.98	33.58	32.38	32.28	18.06	29.19	28.67	28.36
Beverages	5.7	7.3	10.1	6.2	6.5	6.9	5.7	7.3	10.1	6.2	6.5	6.9
Personnel wages	10.1	9.8	10.8	9.4	9.5	13.6	10.1	9.8	10.8	9.4	9.5	13.6
Staff recruitment and training	1.2	0.4	0.3	0.3	0.2	0.1	1.2	0.4	0.3	0.3	0.2	0.1
Low value consumables	1.9	1.5	1.6	1.5	1.7	1.7	1.9	1.5	1.6	1.5	1.7	1.7
hydropower	1.5	1.5	1.6	1.5	1.5	1.6	1.5	1.5	1.6	1.5	1.5	1.2
Gas	1.8	1.6	1.3	1.3	1.4	1.8	1.8	1.6	1.3	1.3	1.4	1.4
Total	61.78	62.58	68.08	61.66	61.38	64.88	60.18	59.98	49.36	54.99	55.07	58.86

Remarks: This study is self-collected.

Table 1 shows that the product procurement demand of the Saint Roba company accounts for the largest proportion and a series of procurement principles. Mainly based on the principle of quality priority, timely and appropriate amount, reasonable purchase price and high purchase efficiency.

However, in September 2019, the purchasing department of Saint Roba paid a price visit to the vegetable market. According to the price comparison table, the dishes delivered by the enterprise's suppliers are all about 10-30% higher than the market price. Among them, red pepper, pickled cabbage, and yellow leaf white are even 40% higher than the market price. However, enterprises still choose to use old suppliers to supply products.

Table 2 demand and price comparison of vegetables in Kunming in September 2019

Variety	Unit	Original purchase price	new supplier quotation	market visit price	confirmation of purchase price	price comparison result	monthly consumption
Ginger	1/2 kilogram	4	5.2	3.8	4.8	26.32%	70
Garlic	1/2 kilogram	3.5	3.5	2.3	3	30.43%	30
Fresh green	1/2 kilogram	3.5	6.5	4	5.5	37.50%	30
Kelp silk	1/2 kilogram	2.5	2.5	1.8	2	11.11%	115
Finger pepper	1/2 kilogram	6.5	6.5	5.7	6	5.26%	60
Winter bamboo shoots	1/2 kilogram	2.8	3.8	2.8	3	7.14%	40

[1846]



Variety	Unit	Original purchase price	new supplier quotation	market visit price	confirmation of purchase price	price comparison result	monthly consumption
Pickled cabbage resembling sauerkraut	1/2 kilogram	1.8	1.8	1.2	1.8	50%	50
Aromatic dry onion	1/2 kilogram	6.2	6.8	5	6.5	30%	30
Towel gourd	1/2 kilogram	2.2	2.3	1.8	2	11.11%	10
Shanghai green	1/2 kilogram	5.8	6	3.5	4	14.29%	100
Yellow leaf white	1/2 kilogram	2.3	4.2	2.8	3.5	25%	1400
Three yellow chicken	1/2 kilogram	4	6.5	3.8	5.5	44.74%	350
Egg	1/2 kilogram	8	9	7.8	8	2.56%	80
Hotbed chives	1/2 kilogram	4.3	5.6	4.5	5.2	15.56%	450
Coriander	1/2 kilogram	6.5	8.3	7	7.5	7.14%	220
Tomatoes	1/2 kilogram	10	12	7	10	42.86%	150
Oily bean curd	1/2 kilogram	3.5	3.5	3	3.5	16.67%	25
Chinese Cabbage	1/2 kilogram	6.8	6.8	5	6.5	30%	650

Remarks: This study is self-collected.

The reasons for the higher costs of suppliers are as follows: Firstly, some vegetables, such as from Shanghai green do not meet the weight requirements of the Saint Roba company. For example, the general weight of each Shanghai green from the market is 50 g, while the enterprise requires 100 g. Secondly, the tofu has big price differences. Its toughness and japonica provided by the suppliers of the enterprise are higher than the samples taken back. Thirdly, other suppliers are not necessarily able to meet the requirements of the enterprise. The enterprise requires that once the store is opened, the vegetables must be delivered to the warehouse immediately for cold preservation. This point can be achieved by the cooperative suppliers whereas the logistics speed of the new suppliers introduced by the market may not meet the requirements.

The high-quality requirement of the market is a major reason why the purchasing cost of the enterprise is difficult to control. For example, the Kiwi shrimp's demand by the enterprise is 45-50 pieces of 500 g for each product, and other products are not qualified if they are bigger or smaller. If they are bigger than the 500 g requirement, the supplier is required to give a 6% discount. If they are small, the supplier will return them for redistribution. Dead ones will be discarded. The supplier was accepting the terms plus these logistics and loss costs to the quotation.

At the same time, because of the strict product quality requirements, many market suppliers are not able to meet these requirements. Therefore, they are unable to access trial opportunities, meaning that the



existing suppliers have almost no rivals. Saint Roba's size requirements are not as strict as the requirements for freshness and delivery speed.

4.2 Analysis on the current situation and problems of procurement cost of Santa Roba company

In 2019, from January 1 to December 31, Saint Roba company had 151 varieties in storage, from a total of 15 suppliers, with 125 purchases, once every three days on average, with a total purchase amount of 3.79 million yuan.

Table 3 storage data of Saint Roba company in 2019

Project	type	purchase times	supplier quantity	purchase amount
Quantity	151	125	27	379

At present in table 4, the company has classified the purchased goods into six categories: aquatic products, raw materials and products, staple food, seasoning, frozen products, and supplies.

Table 4 summary of purchase amount of various products in Saint Roba company

Project	supplier quantity	type	amount	proportion
aquatic products	3	30	47	12.40%
raw materials and products	4	40	100	26.39%
staple food	2	21	96	25.33%
seasoning	2	20	20	5.28%
frozen products	2	20	100	26.39%
supplies	2	20	16	4.22%
total	15	151	379	1

Table 5 shows that the limited supplier of Saint Roba company leads to high cost. The company ignores the logistics cost in the process of purchasing.

Table 5 product logistics cost

Haitian mushroom soy sauce	Hai Tian company	Hui Zhen company
Unit price	63 yuan / piece	65 yuan / piece
Logistics costs	Undertake Logistics, at one's own expense	Undertake Logistics

If Haitian company can provide distribution with extra 1 to 1.9 yuan per piece, the enterprise can still afford Haitian as the supplier. However, if it belongs to category 2, the supplier does not offer distribution at all, Saint Roba company needs to calculate the material flow cost and purchase quantity carefully. However, Saint Roba company did not consider these issues.

4.3 Optimization scheme design

The procurement manager only reports the work to the deputy general manager. If there are procurement problems in other departments, find a corresponding procurement window to solve the problems first. If the procurement personnel cannot solve the problems, report them directly to the procurement director, who then reports the relevant situation to the procurement manager. The quality inspection department is



directly responsible for the purchasing manager. Suppliers can only communicate with other departments through purchasing departments to obtain relevant quality and quantity standards.

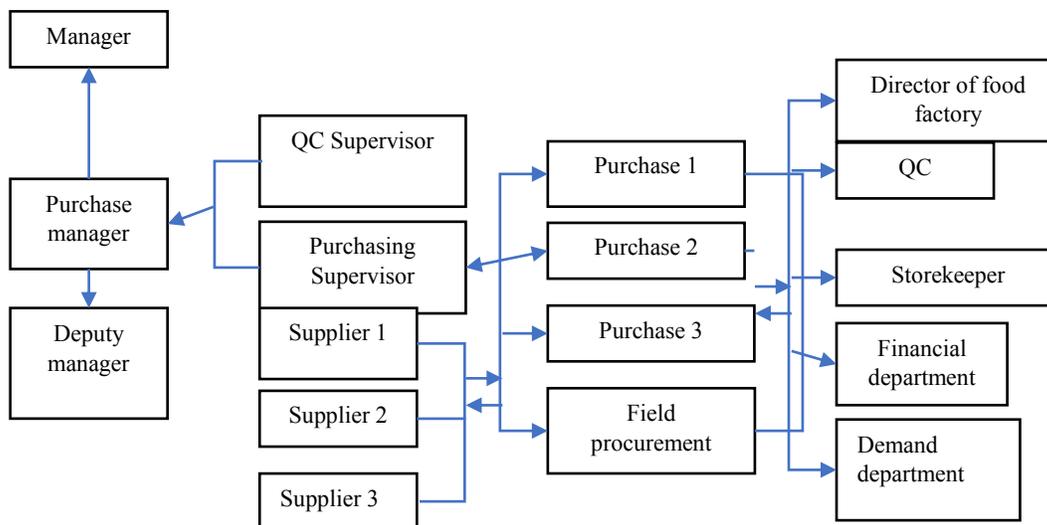


Figure 1 improved procurement communication chart

The purchase communication will be smoother after the improvement. The supplier has reduced the negotiation with other departments, and all the effective information is obtained from the purchase. Therefore, the purchase will naturally occupy the main position in the supply and demand negotiation to obtain the price and service with advantages to our company. To improve the cooperation between the procurement department and other departments and to reduce the subjective interference of other departments in the procurement decision-making, the procurement decision-making time should be greatly shortened, and the decision-making efficiency of the procurement department in the procurement process should be improved.

4.4 Supplier selection using objective matrix

After many years of cooperation, a company can build strong relationships with its suppliers. Therefore, they acquired the supply rights for numerous products. In the current supply relationship, it is difficult for the company to control these suppliers because the suppliers tend to ignore enterprise performance evaluation. However, changing suppliers will lead to the risk of the supply shortage. Therefore, the enterprise chooses the analytic hierarchy process (AHP) to calculate the selection co-efficiency of suppliers with a quantitative method, selects suppliers according to the scores of suppliers, and re standardizes the introduction process of suppliers.

Analytic hierarchy process (AHP) is used to decompose the elements of the decision-making problem into three levels: objective, criterion, and scheme. The objective is the total objective level, and the criterion level can be set according to the degree of influence on the scheme. A decision-making method combining qualitative analysis and quantitative analysis is used.

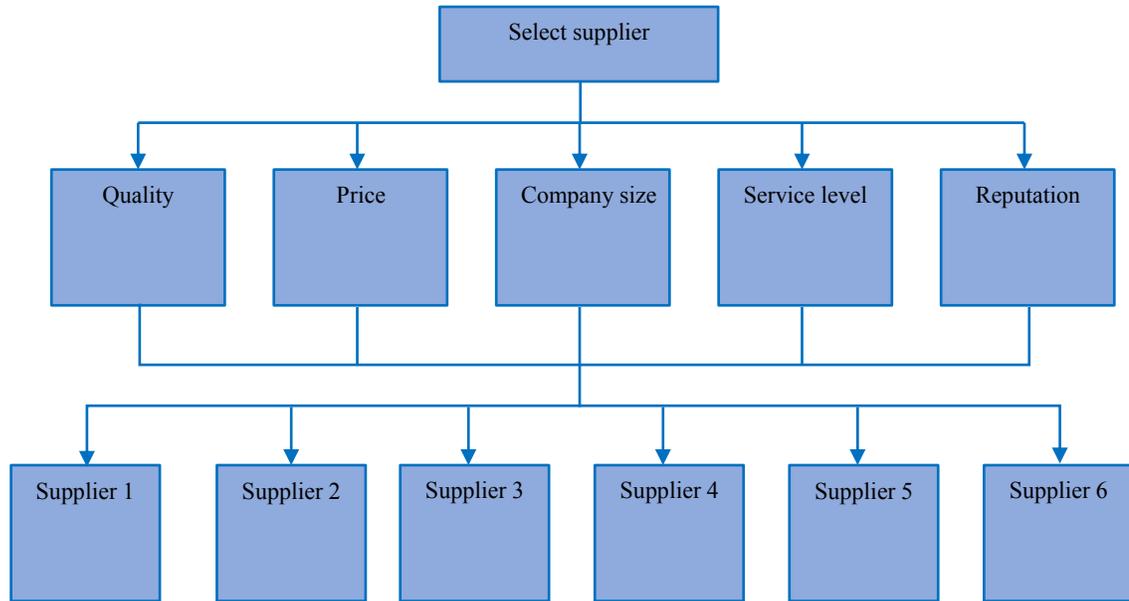


Figure 2 supplier selection hierarchy

By using the analytic hierarchy process, the first step is to construct a hierarchical structure. The method of constructing a judgment matrix is to compare each criterion of each layer and get the judgment. The scale method formulated by Satty's Analytic hierarchy process (AHP) was proposed by professor Saaty in the early 1970s. AHP is a simple, flexible and practical multi-criteria decision-making method for quantitative analysis of qualitative problems. When an enterprise introduces suppliers, the criteria considered are (1) Quality, (2) Price, (3) Production scale, (4) Service level, and (5) Reputation. These are proposed by the purchasing supervisor, purchasing manager, deputy general manager, production plant director, quality supervisor, warehouse supervisor, and financial supervisor who belongs to the approval contact of the company's supply chain management.

Table 6 judgment matrix of the target layer

	Quality	price	company scale	service level	reputation	bi	wi
Quality	1	3	5	5	9	3.6801	0.5118
Price	1/3	1	3	2	7	1.6952	0.2358
Company scale	1/5	1/3	1	1/2	3	0.6309	0.0877
Service level	1/5	1/3	2	1	3	0.9029	0.1256
Reputation	1/9	1/7	1/3	1/3	1	0.2814	0.0391

Therefore, the weight of the criteria layer for selecting suppliers is shown in the table below



Table 8 supplier selection weight

critierion	wi weight
quality	0.5118
Price	0.2358
company size	0.0877
service level	0.1256
reputation	0.0391

After the weight of the criterion layer is obtained, the optional score of the supplier energy quotient can be calculated according to the following formula.

$$\text{Comprehensive score publicity} = P1*I1 + P2*I2 + P3*I3 + P4*I4$$

With this formula, we can calculate the score of the supplier. In order to avoid personal subjectivity or relationship with the supplier, take the average arithmetic score after removing the highest value and the lowest value as its value fraction. Then, the optional scores of suppliers are calculated according to the weight. As a result, the suppliers with the highest scores are selected to place orders.

Table 9 calculation of supplier's optional score

Category	Quality I1	Price I2	Company Scale I3	Service level I4	Reputation I5	Supplier Options	Gn
Supplier A	--	--	--	--	--	--	--
Supplier B	--	--	--	--	--	--	--
Supplier C	--	--	--	--	--	--	--

Note: This is a list of suppliers' optional score calculation table. This table can be used to score the suppliers. Quality I1: 1-10 points, the higher the score, the better the product quality of the optional supplier. Price I2: 1-10 points. The higher the score is, the more favorable it is for our company. Company size I3: 1-10 points. The higher the score, the stronger the supplier's supply capacity. Service level I4: 1-10 points. The higher the score, the better the service provided to the supplier. Reputation i5: 1-10 points. The higher the score is, the greater the influence of suppliers in the market, the better the reputation.

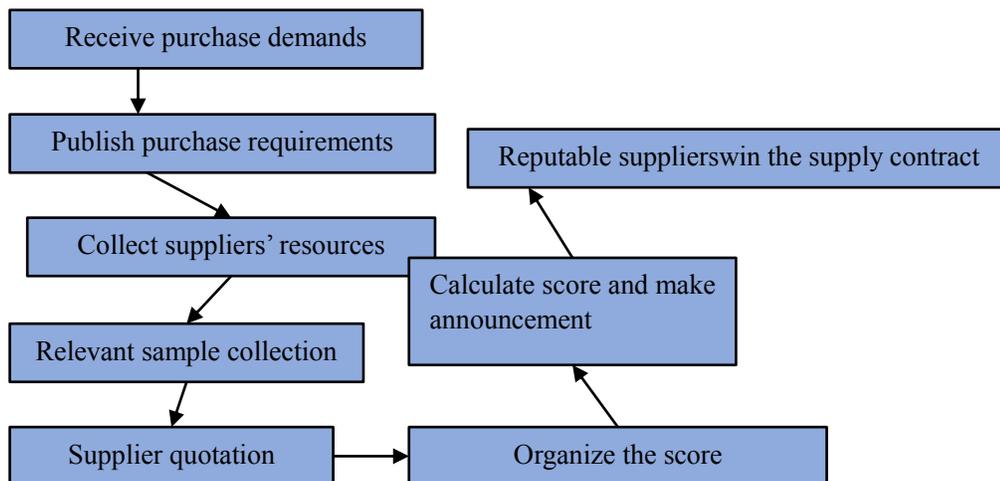


Figure 3 adjusted supplier introduction flow chart



This method can also be applied to the performance evaluation of suppliers. When the optional scores of suppliers are relatively low, the strategy of introducing new suppliers is implemented. Thus, it is possible to avoid the situation in which a supplier has to be used regardless of service quality and product price. This method can also promote competition between and improve the comprehensive service level of suppliers. It also urges suppliers to take the company’s performance appraisal of suppliers seriously. It is very helpful for the company to improve its purchase cost.

4.5 using ABC classification to manage purchased products

There are numerous products of the Saint Roba company that can be divided into aquatic products, raw material products, staple food products, seasoning products, frozen products and supplies, which are not very scientific because aquatic products and frozen products belong to raw materials. There is no obvious display in the classification of dry goods. Now the enterprise classifies the products into live products, meat and vegetables, frozen products, dry seasoning, staple food and used products according to the difficulty of keeping the products in the state.

Table 10 schematic diagram of ABC classification of Santa Barbara company

Grade standard	the proportion of total suppliers	the proportion of total purchase amount
Product A	10%-20%	60%-70%
Product B	20%-30%	20%-30%
Product C	60%-70%	10%-20%

According to this analysis, the class A products of Saint Roba company are shown in Table 5.2.1. There are 40 products in total, including six kinds of live products, four kinds of frozen products, two kinds of dry products, 16 kinds of meat, two kinds of vegetables, six kinds of the main food, and three kinds of used products purchased by Saint Roba company. Due to the variety of class B products, there is no longer a list here. However, according to statistics, there are 66 class B products of Saint Roba company, involving a total transaction amount of 1,134,014 yuan. Among them, there are 38 categories at most, ten meat and vegetables, nine seasonings and dry goods, two live products and main food, and five frozen products. There are 90 other products involving the transaction amount of 758,259 yuan, all of which are classified as category C.

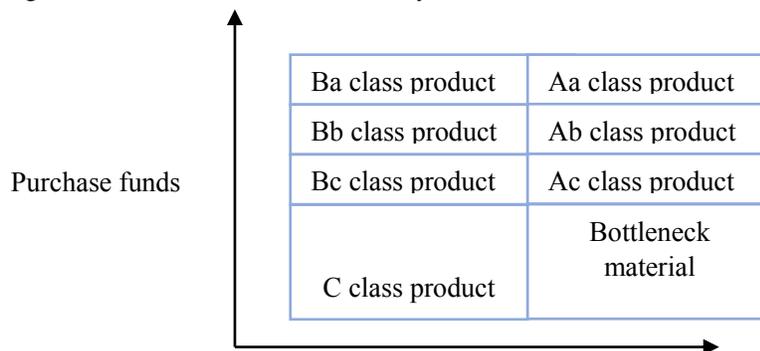


Figure 4 material value of Saint Roba company

According to the supply of different materials, preservation time and other factors, suppliers and procurement methods were classified.



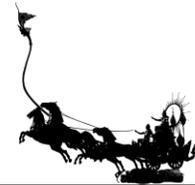
Table 11 summary of suppliers and procurement methods

categories	Representative product	Supplier relationship type	Procurement plan
Aa	Live products, meat and vegetables	Strategic partnership	Half month audit, warehouse or store purchase
Ab	Staple food, frozen food	Key partnerships	Bidding, batch purchase and batch distribution
Ac	Dry seasoning, supplies	Key partnerships	Batch order, batch delivery
Ba	Supplies, meat and vegetables	General supplies partnership. Meat, meat and vegetables are combined into class a products	Supplies are approved in batches
Bb	Dry cargo seasoning	General partnership	Pay attention to product price and audit purchase
Bc	Live products, staple food	As far as possible, it should be combined with class A similar suppliers	
C	Class C	Transactional partnership	General procurement process
Bottleneck category	Important media materials such as Baking powder, Jinlan oil cake and Jishi powder	Maintain cooperation and find alternative suppliers	Keep purchasing and look for spare products

It can be seen from the figures that among the class products are live products and meat products, which account for a special amount of capital. Moreover, the quality guarantee period of live products and meat products is short, and they need to be delivered continuously every day. Such suppliers have the characteristics of large supply and the high importance of products. AB products are a staple food and frozen products. These two types of products can be kept for a long time under certain quality conditions. There are many market choices and a large number of company purchases. When selecting suppliers, more consideration can be given to the price of products. The company's consumption is relatively large. For such suppliers, a single supplier system can be used to implement a batch purchase plan. Therefore, they can be purchased by bidding, batch order, and batch warehousing. AC products mainly include dry seasoning. In class B products, the differences between suppliers and class products are in supplies and dry seasoning. These products are numerous and miscellaneous. For example, the number of purchases of products in categories is relatively low, and the amount of products is relatively large. For dry goods and seasoning products, the amount of products is relatively low, and the purchase frequency is high. The bottleneck material refers to the material with small demand, but its quality has a significant impact on production. Because such material generally belongs to the seller's market, the purchasing enterprise will not have much room for counter-offer.

5. Conclusion

Based on the theory of purchasing management and purchasing cost management and related technology as theoretical support, first of all, this paper analyzes Saint Roba company's purchasing data according to some representative case, which leads to the high cost of purchasing some procurement situation. Then, according to the status quo and the saint, the enterprise's problems in purchase cost control and the organizational structure, rules and regulations, purchasing process and supplier management process are analyzed. Lastly, according to the analysis of the problems, the researcher put forward some suitable the procurement cost control of enterprise management optimization strategy. Moreover, the implementation of an optimization program for procurement cost control management is discussed. The main research conclusions of the author are as follows:



(1) The purchase process problem in Saint Roba creates a tense and hectic atmosphere, so it is necessary to control the purchase process. This paper will not only improve the working efficiency of procurement and the impression and cooperation degree of suppliers with our company, but also greatly improves the accuracy of procurement, by improving the approval efficiency, such as applying modern tools, shortening the approval length of the purchase, improving the efficiency of the purchase work, by controlling the authority of each department to achieve centralized purchase response to suppliers high prestige and weight of procurement in front of suppliers, improving the sharing degree of procurement information, and formulating the cooperation of various departments on procurement.

(2) According to the situation of supplier and supplier management in Saint Roba company, this paper proposes to use AHP to calculate the weight of the supplier selection criteria layer. The supplier management group scores suppliers and then calculates the score of supplier selection according to the weight to select suppliers in Saint Roba company, which can control the selection and management of suppliers and the subjective influence factors of controlling people.

(3) Readjust the current purchasing categories of the company and apply them based on the adjustment. ABC classification is used to classify the purchase amount of the purchased products of Saint Roba company. Based on the purchase amount, ABC classification is used for the secondary classification, and the classification of AA, AB, AC, Ba, BB, BC, and others are obtained. According to the importance and purchase characteristics of some products, the improvement of ABC classification is proposed, which purchases some products that are very important for production and have a low purchase amount. Then, according to the result of product purchase classification, the management scheme of applying different suppliers to different products is proposed.

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