
Reorganize the Supply department of Yikang regarding the purchasing function and purchasing process



BY

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Abstract

The thesis is undertaken in Sichuan Yikang Food Industrial Co., Ltd from October 2013 to March 2014. This company is the Suining subsidiary of Yikang Group. It manages eight Ecowings (Yikangyuan Green Food Chain Restaurants) and dedicated in serving the customers of Suining, China.

The increasing numbers of materials and goods are demanded by Yikang for the purpose of fulfilling the increasing customer demand as well as the more intensive competition in the food industry, which require the company to put more attention on effective and efficient purchasing. Effective and efficient purchasing can not only increase the financial position of the company but also increase the long-term competitive power. There are many ways to realize effective and efficient purchasing. Increasing the transparency of the purchasing system and avoiding the risk of making mistakes in purchasing are used as the ways in this research to make the company purchase to be effective and efficient. Therefore, the objective of this research is to reorganize the purchasing function and purchasing process of Yikang to realize a more transparent purchasing system and finally make the purchasing system more effective and efficient. The research questions show the steps to be carried out during the research. The research is carried out systematically through applying the appropriate research methods. Though analyzing the current situation regarding the organization of purchasing functions and purchasing activities by making use of the theories including Kraljic's model, purchasing function described by Van Weele (2004) and purchasing process model from Van Weele (2004), the bottlenecks within the purchasing system of Yikang can be clearly identified. The comprehensive data of this research is collected mainly through interviews with the Purchasing Supervisor, GM, company mentor and the other general employees.

After the current situation has been analyzed, recommendations are given by applying theories, including the purchasing function described by Van Weele (2004), DMU from Webster and Wind (1972), Kraljic's model and also the purchasing process model from Van Weele (2004).

- Designing the improved organization of purchasing functions with a clear division of purchasing responsibilities and roles;
- Developing the standardized purchasing processes for different product categories.

The recommendations given in this research can be better supported by implementing a suitable Purchasing Information System. Thence, the company is also advised to consider using PIS.

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List of abbreviations

Return on Net Assets	RONA
Sichuan Yikang Food Industrial Co., Ltd	Yikang
Yikangyuan Green Food Chain Restaurants	Ecowing
Decision-Making Unit	DMU
Requests for Quotation	RFQ
Strengths and weaknesses	SWs
Department	Dept.
General Manager	GM
Total-Cost-of-Ownership	TCO
Key Performance Indicators	KPIs
Purchasing Requisition	PR
Purchasing Order	PO
Key Performance Indicators	KPIs
Purchasing Information System	PIS

Chapter 1: Introduction

This chapter will give a general top-down introduction to the company and supply department. After that, the motive for research is also given as well as the research delineation. Proposed research and research method are also included in this chapter to give the idea about how this research was done and which theories are used to support this research.

1.1 Background information

◆ Company description

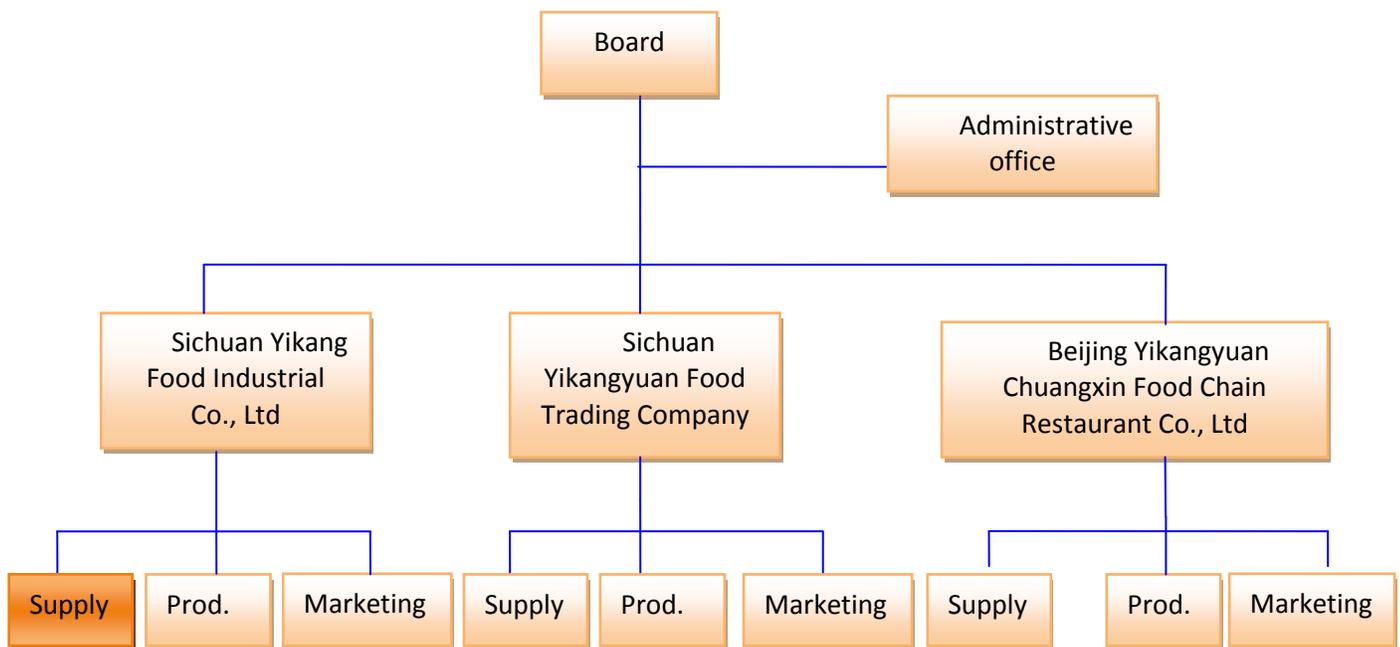
1. *Brief company introduction*

Yikang was established in 1997 in Suining Sichuan. At this moment, there are totally around 160 people working in Yikang. Yikang Group has three subsidiaries (one in Suining with around 40 employees working there, one in Chengdu with around 48 employees, another one is in Beijing with around 42 employees). Yikang has been going through several stages from only raising normal chicken and selling them without any further processing to the stage of growing ‘Yikang chicken’ and sell them to the supermarkets after processing. According to the experience accumulated through the continuous process of exploring the right way to make profit in a long run, in 2011, the management board of Yikang decided to open their-own chain of restaurants (The Chinese name called Yikangyuan Green Food Chain Restaurants; the English name is Ecowing) for operating Ecowings. Ecowing covers three large cities of China which including Suining, Chengdu and Beijing. Eight Ecowings are located in Suining (managed by the subsidiary in Suining) and five in Chengdu which are managed by the subsidiary in Chengdu, another four are managed by the subsidiary in Beijing.

Figure 1.1 shows the organizational structure of Sichuan Yikang Group. The Board was set in Suining, Sichuan which is located at the plant of Sichuan Yikang Food Industrial Co., Ltd. The administrative office includes finance, HR and marketing. Due to Yikang chose to adapt their products sold in Ecowings to the local taste, each subsidiary has their own supply, production and marketing department to fully dedicate in serving the local customers. The supply department of each subsidiary has the same function as purchasing department which is responsible for

purchasing the required materials, goods (ingredients, condiments, and food packages), equipment for production and office supplies for that subsidiary. The production department of each subsidiary is responsible for producing the products and meals according to the local taste. Each subsidiary is responsible for their own marketing and promotions in their city, but they have to do it with following the guidelines/requirements of the Board regarding the marketing management. They also have warehouse to store the purchased materials and finished products and quality control department to check the quality of purchased materials and final products. All in all, each subsidiary manages the chain of restaurants which fall within the scope of the set management area. In this research, the research area is the supply department of Yikang Food Industrial Co., Ltd, which is located in Suining (the yellow box in Figure 1.1).

Figure 1.1 **Organizational structure of Yikang**



Note: Supply department is the name set by Yikang, it is also known as purchasing department; Prod. is short for production.

2. Products

Yikang now focuses on the production and sale of all kinds of green nutritious food mainly made from the self-grown chickens. There are four categories of products sold in Ecowing, the frozen Yikang organic chicken (which customers can only buy from the restaurant and cook it at home),

nutritious meals (which customers can eat in the restaurant or take away), instant meals (rice, noodle and soup which are wrapped and sold to customers to eat instantly at home by using microwave or hot water) and the New faction of Sichuan bitterns (which is the product name of the Sichuan bitterns, customers can either eat in the restaurant or take away). Except the frozen Yikang organic chicken sold in all Ecowings in China are the same in terms of package, price and taste, the other three categories of products have different tastes and series products in different cities. Nowadays, Yikang has become a well-known enterprise in Sichuan province and is very well supported by the local government.

3. *The purchased item groups*

Figure 1.2 Item groups purchased by Yikang in Suining



With the development of Yikang, the growing number of production materials, office supplies and other materials and products need to be purchased, especially the food packages and machines

which occupy a large portion of the total purchase costs. Figure 1.2 shows the main item groups that are purchased.

Because of the products of all Ecowings in the same city are produced and distributed by the subsidiary which is domiciled in that city, the total demand of all chain restaurants for different purchases in one city are still large. Due to the fact that Yikang adjusts their products to the local preferences, some of the products sold in different regions (north and south of China) are different. Therefore, the purchasing activities of Yikang is not centralized, each city purchases separately, there are five types of purchases for the headquarter of Yikang in Suining (the first four shown in Figure 1.2 are for production use, the last one is for office use). The office supplies are also purchased separately by each subsidiary. The purchasing of office supplies occupies the small portion of the total purchase costs.

4. Company culture

Company culture forms a certain cultural values, common cultural criteria and norm of morality in an enterprise. These senses of worth constitute the employees' standards of view and behavior. (Peng, 2013) Generally, company culture is relatively fixed and company manages all employees to inherit the company culture continually. The company culture of Yikang simply can be summarized into four words which are Pragmatism, Innovation, Dedication, and Concentric. (Yikang Company, 2013) I will give a short explanation for each word.

- **Pragmatism:** do everything diligently.
- **Innovation:** business concept, scientific and technological innovation are the fundamental driving force of the development of company. For example, the healthy nutritious meal is an innovation.
- **Dedication:** love the company and work from the heart, willing to dedicate time and effort for the company's goals.
- **Concentric:** promote team work, intensive communication and all employees work with one heart to achieve the common goals. Create a happy working atmosphere.

The management style of Yikang has been guided by democracy. Each subsidiary is responsible for the business operation in their management area, but the decisions made by the subsidiaries must accordance with the terms of reference under the authorization (the company has guidelines regarding the marketing and HR management, etc. the financial budgets of all subsidiaries are controlled by the Board).

◆ Supply department description

The supply department consists of one Purchaser and one Purchasing Supervisor. The purchasing functions of the supply department include specification, supplier selection, contracting, ordering, and expediting and follow up and evaluation. The main responsibility of this department is to purchase the required materials and products in the right time with the right quantity.

Generally, the purchasing responsibilities between the supply department and other departments shall be clearly stated, as in many companies, except the buyers, many other disciplines within the company are actively engaged in the decision-making process of buying products and services. However, there are no clear rules on purchasing responsibilities between the supply department of Yikang and the other departments. The purchasing responsibilities are dispersed to either the supply department or the other departments or both of them by the Chairman of Yikang.

Moreover, the supply department makes purchases without following the standardized purchasing process. As there is no clear rule on purchasing process, the supply department of Yikang conducts purchases base on their common practice, experience, personal preferences and for their convenience (buying from friends, nearest purchase).

1.2 Motive for research and Research delineation

With the increasing sales volume of Yikang, more materials and goods are purchased. The purchase value of all materials and goods accounts for 86% of the total purchase value. (Yikang, 2013) What's more, the competition in the food industry is getting more intensive due to more and more food companies have presented in the market. Therefore, purchasing is getting more important for Yikang, since efficient and effective purchasing is the key to company's short-term financial position and long-term competitive power. (Van Weele A. J., 2004, p. 4) However, the

current supply department of Yikang has disordered purchasing functions and lack of standardized purchasing processes which is not efficient and effective.

In order to enable the purchasing system to be more efficient and effective, one way is to develop a policy plan which aims to reorganize the purchasing function and purchasing process in order to increase the transparency of purchasing system and avoid the risk of making mistakes.

Since increase the transparency of purchasing system can yield a lot of benefits to the company by eliminating the scope of ambiguity in the system and bringing openness therein, and it can also remove favoritism, corruption and arbitrariness from the system. Finally transparency directly leads to the improved efficiency of purchasing. (Transparency in procurement, 2014) Avoiding the risk of making mistakes can realize savings on purchasing price, the mistakes here means the mistakes made in the purchases of goods and materials, e.g. selecting friends or relatives as suppliers which lacks of internal procedures and organization leads to the high quality costs, i.e. the costs of incoming and quality inspection of purchased goods.

To carry out this research, the author has to clarify that:

- The research area of this research is the supply department of Yikang Food Industrial Co., Ltd. (one of the subsidiaries of Yikang Group located in Suining).
- Although the research object is the supply department of Yikang, It is also possible that other related departments (production department) of the company are involved in the research.
- This research is only focus on giving recommendations in the policy plan after carefully analysis of the current situation to guide the company in reorganizing the purchasing function and purchasing process. The problem arises from other departments or other subsidiaries will not fall within the scope of this research.
- The advice given in the research will revolve two research topics: the reorganization of purchasing functions and purchasing processes for the different product categories.
- Whether the management of Yikang will follow the guidance of this research is the matter of the company, there will be no comprehensive plan for actually implementing the advice except a strategic policy plan.

1.3 Proposed Research

1.3.1 Objective

The objective of this research is to deliver a strategic policy plan which aims to reorganize the purchasing function and purchasing process of Yikang in order to increase the transparency of purchasing system and avoid the risk of making mistakes.

At the end of this research, a policy plan will be delivered to the management of Yikang which contains two products: the first one is the improved organization of purchasing functions with a clear distribution of purchasing responsibilities and the other one is the purchasing processes, both are designed for the different product categories.

1.3.2 Problem definition

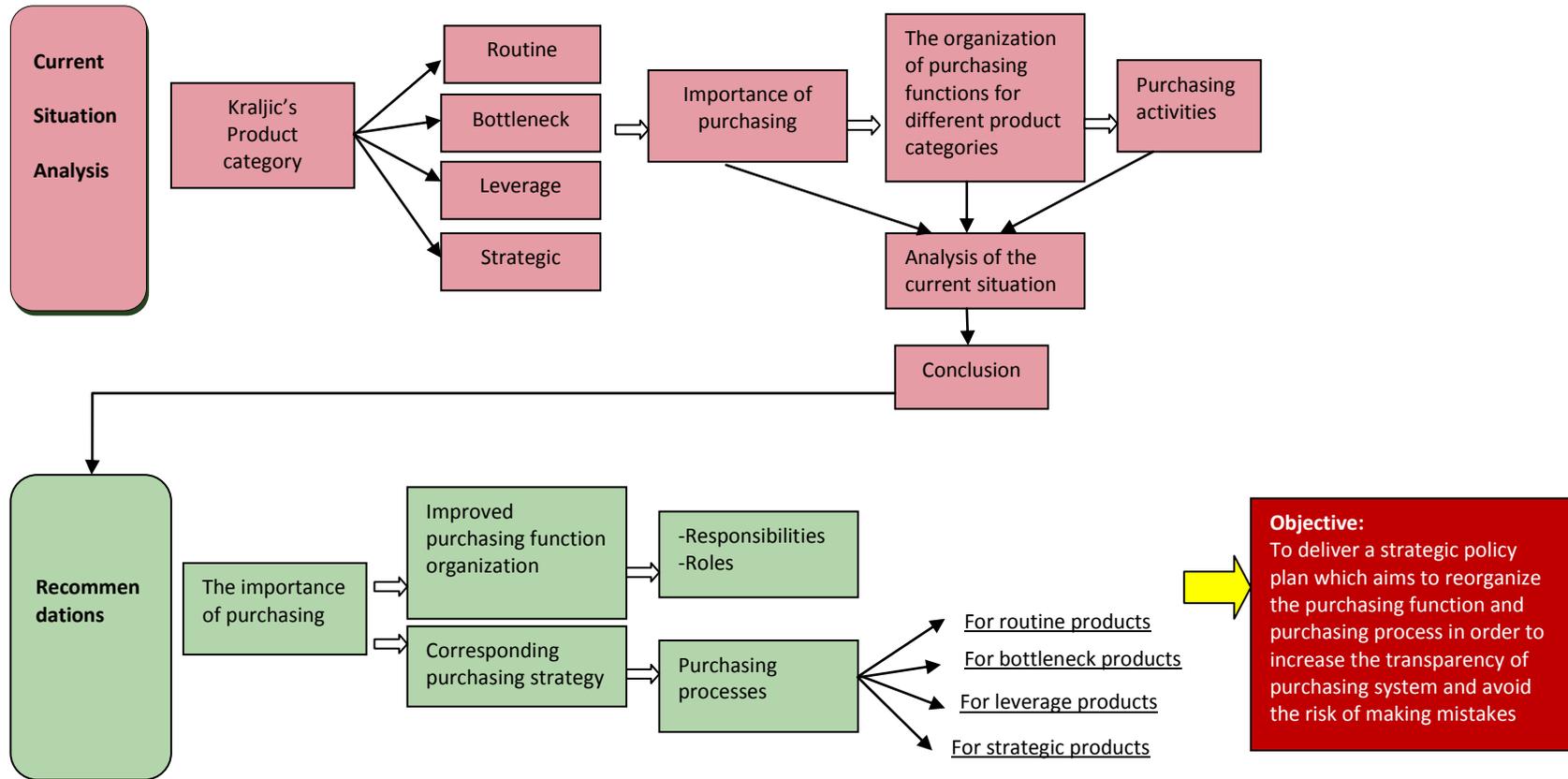
The current supply department lacks of transparency because of the following aspects:

- 1) The purchasing functions for the different product categories are not well-organized. And also the corresponding purchasing responsibilities are not clearly distributed to specific person.
- 2) And there is no standardized purchasing process to guide the work of the supply department and other related departments. The supply department of Yikang makes purchases based on their common practice, experience, personal preferences and for their convenience (buying from friends, nearest purchase).

The above aspects are regarded as the most essential problems, because the vague organizations of the purchasing functions with an unclear distribution of the purchasing responsibilities and the absence of the standardized purchasing processes lead to low transparency of the purchasing system. The low transparency in the purchasing system causes ambiguity, including favoritism, corruption and arbitrariness. Finally, it leads to a low efficiency in the purchasing process, a higher risk for mistakes which might result in financial loss. To avoid these results, this research is carried out. As stated in Figure 1.3, to categorize the products and understand the importance of each product category to the company, are the preconditions to develop the right way of organizing purchasing functions and purchasing processes for the different product categories.

1.3.3 Conceptual model

Figure 1.3 Conceptual model



The above conceptual model shows a logic structure of this research. The objective of this research is achieved through the recommendations which are given based on the conclusion (or also can be called results) drawn for the analysis of the current situation.

The current situation is described by first defining the current product categories using Kraljic's model. Then the importance of each purchasing category to the company is explained based on the management's view of purchasing, related factors like: purchasing's impact on financial results and situation of the suppliers' market. After that, the descriptions regarding how the current purchasing functions are organized for different product categories (centralized or not centralized) including the distribution of purchasing responsibilities are presented. The purchasing activities for different product categories are explained in the end. Analyzing whether the actual organization of the purchasing functions and purchasing activities are consistent to the importance of purchasing, the bottlenecks of the current organization of purchasing functions and purchasing activities can then be found. Finally, the conclusion is drawn upon the analysis of current situation.

Based on the conclusion, some recommendations are given to achieve the research objective. The importance of different product categories to the company provides guidance to produce the first product for this research, which is the suitable way of organizing purchasing functions for each product category. According to the different way of organizing, the corresponding responsibilities are clarified and the roles of relevant people are also defined. The second product is the purchasing processes for the different product categories which are produced based on the purchasing strategies correspond to the importance of purchasing. These two products constitute the complete policy plan for the supply department of Yikang.

1.3.4 Research questions

Based on the problem definition and the conceptual model, the main research questions and sub-questions are derived as Table 1.1 shows.

Table 1.1 Research questions and sub-questions

Research questions	Sub-questions	Research methods
1. How important is the purchasing of different product categories for the company?	1) What kinds of products are purchased? (the scope of purchase) 2) What product categories of Kraljic do the products fit in or can be defined? 3) Which criteria are being used for measuring the importance of purchasing different product categories?	-Consulting -Field investigation -Literature review -View company documents (e.g. purchasing reports) -Analyzing and interpreting
2. How the purchasing functions of each product category are organized?	1) Which purchasing functions are included in the current Supply Dept.? 2) How are the current purchasing responsibilities divided? 3) Which purchasing functions are centralized in the supply department and which ones are authorized to other related departments?	-Field investigation -View department profiles -Consulting and interview -Analyzing and interpreting
3. How the purchasing is currently conducted?	1) Does the company have different purchasing activities for different product categories? If yes, what are the different purchasing activities? If no, how the company does?	-Field investigation -Consulting - Analyzing and interpreting
4. What are the conclusions or results of the research?	1) What are the bottlenecks of the current situation regarding the organization of purchasing functions and purchasing activities for different product categories? 2) What are the conclusions of the current situation? 3) What are the root-causes of the current situation?	-Field investigation -Literature review -Consulting -Interpreting and Analyzing -Summarizing

5. What are the recommendations to change the current situation and achieve the research objective?	1) Which theories can be used to formulate recommendations?	-Desk research -Literature review -Internet -Interpreting and analyzing
	2) What are the recommendations regarding the organization of the purchasing functions?	
	3) What are the recommendations regarding the design of the purchasing processes?	

1.4 Research Method

In the research questions of the last section, the research methods are listed for each of them to give an initial impression about the methods that will be applied. More extended information about the research method is given in this section. Firstly, who participated in this research is clarified, and then followed by the description about how the research is designed and what instruments are used, finally is the procedure for analyzing the collected information.

1.4.1 Research participants

The research participants of this research are mainly two people from the supply department (the Purchasing Supervisor Mr. Fan and the only Purchasing employee Mr. Li Hui) and the GM Mr. Li. These three people are directly connected to this research topic and therefore they participate in this research by being the targets of observation and information source where I can get the most of the research information from. It is necessary to clarify that the participants have the right to choose what they say or act during the research, because there is no consent form signed by them. The only reason for them to give assistance is the research had got the permission of the Chairman of Yikang.

1.4.2 Research process

As the research is intended to resolve a specific problem, so it is designed as an applied research. This research design follows five things at below. Through answering the sub-questions to finally get the answers for the central research questions. The answers to the central research questions (research results) are the core to get recommendations to the problem. The research design is watertight. Gradually step close to the recommendations to the problem.

- ✚ Identify the problem carefully and justify the selection;
- ✚ Consult the school tutor and company mentor for feasibility of the selection;
- ✚ Clearly specify the central research questions to the problem selected;
- ✚ Clearly describe the possible sub-questions which will be necessary to answer the research questions;
- ✚ Describe which methods and theories will be used to analyze the collected data and answer the sub-questions.

1.4.3 Instruments

Research Instruments are measurement tools designed to obtain data on a topic of interest from research subjects. (Smith, 2013) Here at below briefly explains the instruments used in the research, for more detailed information about the instruments used in this research and how they are used for what reason is explained in Appendix 1.

1. **Documents review:** read relevant company documents, such as company profile, instruction manual and work records. It is used when the information about the company background, policies and department information are needed.
2. **Interview:** this is the most used tools in this research to interview relevant person in charge and gain comprehensive information, interviews with the Purchasing Supervisor, GM, company mentor and other general employees. The notes (data) which have been written down during each interview have to be processed into useful information afterwards. This is often used when there is no relevant company documents can be referred to or the personal opinions and recommendations are required.
3. **Consulting:** this is different from interviewing, consulting happens usually without any arrangements of the time and there is also no list of questions sent to the person that be consulted. Consulting can be done whenever I have troubles during the daily work or problems of understanding the certain operations and functions of the supply department. The consulted people normally are the Supply Supervisor, my colleague and the company mentor.

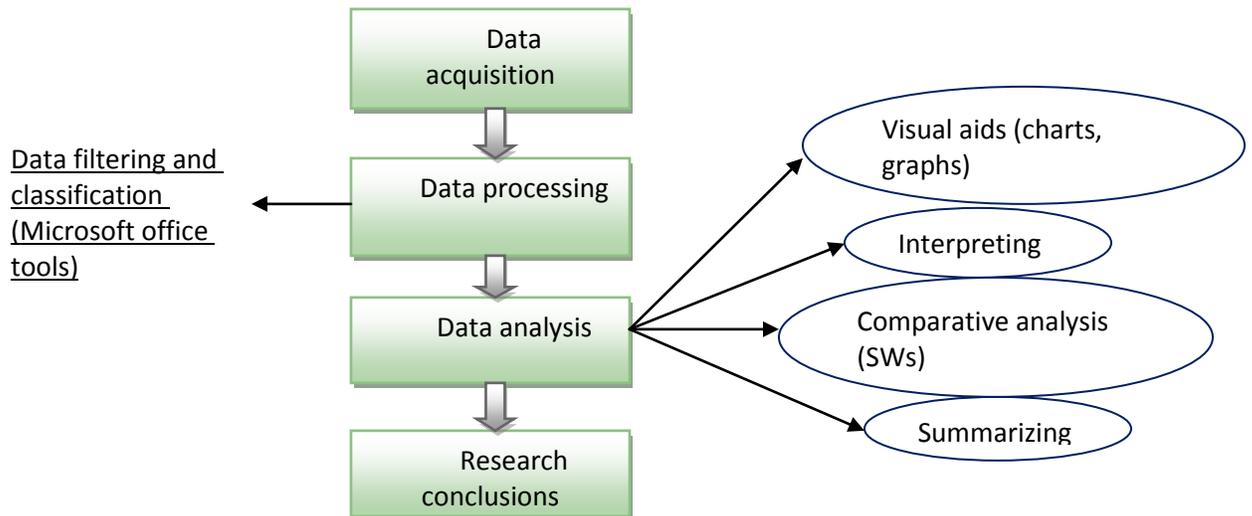
4. **Field investigation:** it is a good way to collect information like what is the current organization of the purchasing functions and how the materials and products are purchased, by actually working in the target department. Obtain information and inspiration through observing and experiencing the purchasing work in the supply department.
5. **Desk research, literature review and internet:** these three instruments are frequently used when finding suitable purchasing functions and effective purchasing processes for different product categories.

1.4.4 Analysis procedure

After the data are collected through making use of the above mentioned instruments, they will be filtered and classified by using office tools like Word and Excel. The data become readable information in the second stage. Then several data analysis methods are applied to conduct thorough analysis, for instance, using visual aids to present the research results. Conclusions are drawn based on the results of the data analysis.

Figure 1.4 shows clearly the analysis procedure right from the data collection to the research conclusions.

Figure 1.4 Data analysis procedure



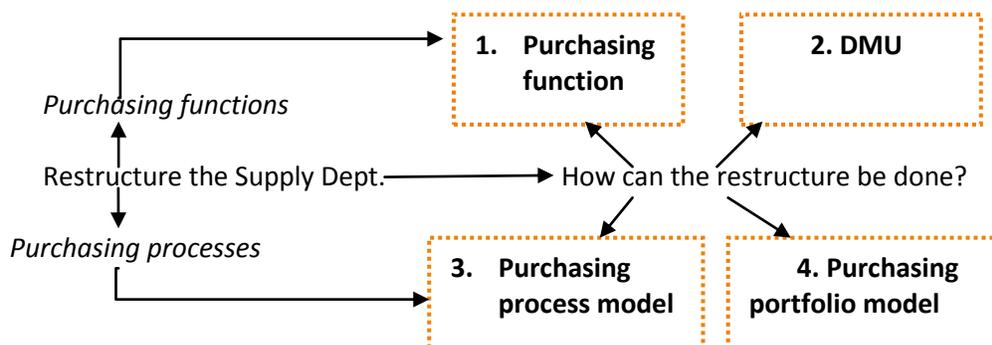
Chapter 2: Theoretical framework

Since this research is about purchasing, the definition of purchasing is presented first. According to Van Weele, Purchasing is: *“The management of the company’s external resources in such a way that the supply of all goods, services, capabilities and knowledge which are necessary for operating, maintaining and managing the company’s primary and support activities is secured at the most favorable conditions.”* (Van Weele A. J., 2004, p. 14)

Several key theories of purchasing form the theoretical framework of this research. In this section, the main topics dealt are the purchasing function, DMU, purchasing process and the purchasing portfolio model.

A general guide through the different parts elaborated in this theoretical framework is shown in Figure 2.1. The decision on bringing those parts into the framework is for the purpose and objectives of the research. The theories about purchasing function and decision-making unit are used to reorganize the purchasing functions, as these two theories can make clear in the supply department who does what and the role of parties who involved in the purchasing. For designing the purchasing process, the theory about purchasing process model is of course described. It is also important to examine what the correct manner might be, and this is what purchasing portfolio model is used for. First, let’s go through each theory one by one.

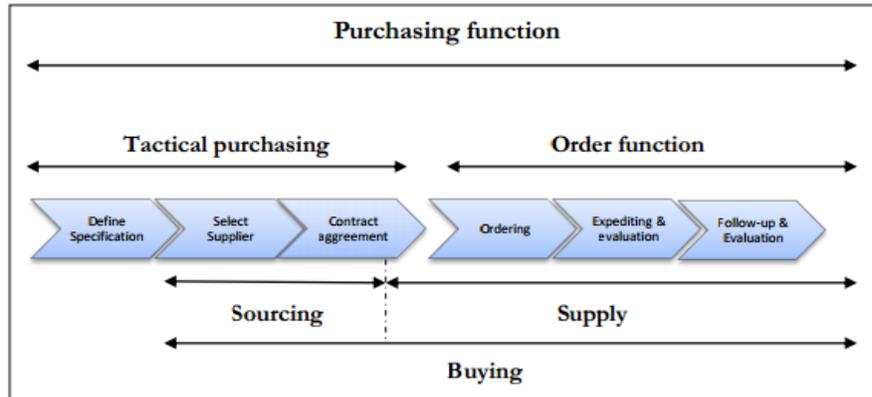
Figure 2.1 **Theoretical framework**



◆ The theories used and the definitions

2.1 Purchasing function

Figure 2.2 **Purchasing process model and some related concepts** (Van Weele A. J., 2004, p. 13)



As can be noticed in Figure 2.2, it mentions purchasing function on the top. The purchasing function traditionally encompasses the process of purchasing, which means all the activities shown in the purchasing process model are covered by purchasing function, but the scope of the purchasing function is usually much broader than that of the purchasing process depending on the nature of products purchased. Moreover, the organization of purchasing functions varies per purchase. Not all purchasing functions are necessary to be centralized in purchasing department. Some of them can be authorized to other specific person from another department for administrative efficiency. (Van Weele A. J., 2010, p. 14)

2.2 Decision-Making Unit

The organizational purchasing processes are always involving more than one person, i.e. group decision making. (Van Weele A. J., 2004, p. 38) The relevant literature refers to this group as the ‘decision-making unit’ (DMU). Within the DMU various roles can be distinguished: Gatekeeper, influencer, decider, buyer and user. DMU is defined as “a group of people in a company or other organization who directly or indirectly participate in the purchasing decision-making process, who share some common goals and the risks arising from making the decisions” (Webster & Wind, 1972).

2.3 Purchasing process model

Purchasing process is a set of procedures used to identify products for purchase, verify the quality and compliance of products and vendors; carry out purchasing transactions, and verify that purchasing-associated activities have been executed appropriately. Different organizations have different purchasing processes of varying complexity, depending on the industry in which they work and the nature of the purchased products. (Buying process, 2014)

Figure 2.2 shows the purchasing process model which contains define specification, select supplier, contracting, ordering, expediting and follow-up and evaluation. The entire process is usually not going through in each and every purchase depending on the different purchasing situations. It happens in the case of a first-time purchase of a product and/or service, where all steps are required. (Van Weele A. J., 2004)

In general, three types of purchasing situations are distinguished. (Robinson, Faris, & Wind, 1967) See Table 2.1.

Table 2.1 Characteristics of buying situation (Robinson, Faris, & Wind, 1967, p. 25)

Buying situation	Newness of the problem	Information requirements	Consideration of new alternatives
New task	High	Maximum	Important
Modified rebuy	Medium	Moderate	Limited
Straight rebuy	Low	Minimal	None

When the company decides to buy a completely new product, the purchasing experience is little or none, and very much information is needed to complete the purchase, the new task situation occurs. This also means that the specifications have to be set from nothing. It is characterized by a high degree of uncertainty and high risk, and that the suppliers are unknown. The decision-making process becomes long since more than one hierarchical level will be involved. (Robinson, Faris, & Wind, 1967) (Van Weele A. J., 2010)

The modified rebuy either the product or the supplier is new and it usually happens when there is dissatisfaction with the supplier or when seeking cost reduction or quality improvement. The decision-making process includes limited problem solving but requires some additional information before making decision. The risk level is lower compared to the new task since either

the functionality of the product or how to select the supplier is known. (Robinson, Faris, & Wind, 1967) The last four steps in the purchasing process should be handled for this purchasing situation. (Van Weele, 2010)

Straight rebuy is the most frequent situation where both product and supplier are known in beforehand. The purchases are handled on routine and usually by the purchasing department solely, or after negotiations completed by the purchasing department. Usually, the contracts for straight rebuy situation are long-term contracts. No or very little information is needed and suppliers are chosen only from an accepted list. The straight rebuy only considers the last three steps of the purchasing process model. (Robinson, Faris, & Wind, 1967) (Van Weele A. J., 2010)

2.4 Purchasing portfolio model

To understand corresponding purchasing strategies for the product categories can help in developing the right purchasing process. Purchasing portfolio model assists companies in identifying purchasing strategies that fits specific product categories. The most famous and frequently used purchasing portfolio model is so called Kraljic's portfolio model.

Kraljic's portfolio model

The underlying idea of Kraljic's portfolio model is that the different supply markets need different strategies, due to the fact that suppliers have different importance or interest to a company. (Van Weele A. J., 2004, p. 148) There are two basic variables that determine the types of purchasing strategies of the company needs. These are:

- The strategic important of purchasing; the financial impact of a given supply item measured against criteria like the cost of materials, volume purchased, total costs, percentage of total purchase cost. It may also be indicated as the impact on the bottom line for the overall company. The more money involved in purchasing, the higher the effect on the bottom line.
- The complexity of supply market, i.e. the supply risk. This can be determined by the product availability, supplier availability, and cost of changing a supplier, market structure, substitution possibilities, make-or-buy opportunities, logistics costs and so on. Sourcing a product from solely one supplier without other alternative sources represents a high supply

risk, while the supply risk is low when a product can be sourced from multiple suppliers. (Kraljic, 1983, p. 109)

Figure 2.3 Kraljic’s purchasing portfolio model (Van Weele A. J., 2004, p. 149)

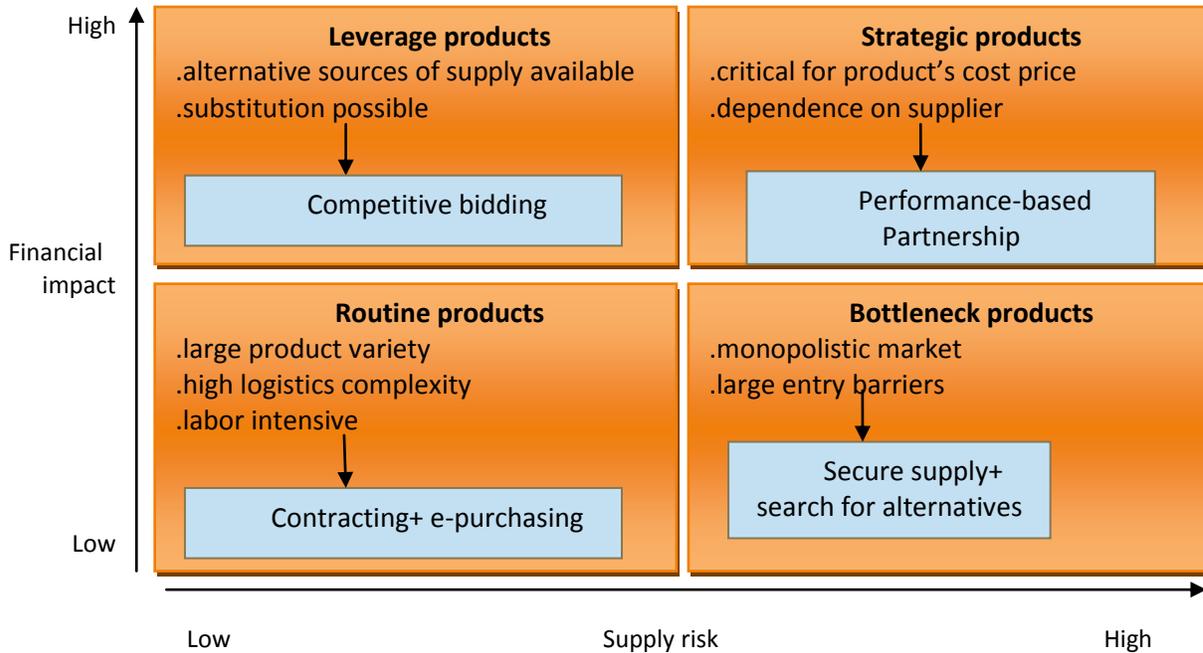


Figure 2.3 presented the portfolio model from Kraljic. By using the combination of supply risk and purchasing’s impact on the financial results, and evaluating purchased items as high or low according to those, items can be divided into four categories in a two-dimensional matrix, namely routine (or non-critical), bottleneck, leverage and strategic (see Figure 2.3). The characteristics of each product category are also shown in this Figure.

The corresponding strategies

The grouped items have a strategic approach according to its strategic requirements. As shown in Figure 2.3. For the strategic products, companies can establish partnership or close collaboration with their suppliers to minimize the supply risk. The goal is to create mutual participation based on preplanned and mutually agreed cost and operational improvement targets. (Van Weele A. J., 2004, p. 152) With the suppliers, efficiency programs are developed to achieve cost reduction, quality improvements, etc. It is essential to select the ‘best-in-class’ suppliers for this strategy.

For leverage products, considerable amount of money can be saved by competitive bidding or tendering. Since the supplier base is considerable and the suppliers and products are interchangeable, there will be no long-term supply contracts. Spot purchasing and multiple sourcing strategies are usually seen in this case.

For bottleneck products, two actions are conducted simultaneously. The first one is focusing on securing the supply, if necessary at additional cost. The second one is continue developing alternative products and suppliers (costs often exceed the cost savings obtained). Contingency plans are important for this category, such as, consigned stock agreements.

Simple but efficient ordering and administrative routines with the suppliers, in the form of electronic catalogues are preferred by routine products. The aim is to reduce administrative and logistics complexity. Some other aspects relevant to the policy for these products are: standardizing the product assortment, reducing the number of suppliers and subcontracting. (Van Weele A. J., 2004, p. 152)

◆ **How the theories are applied?**

The theories are used both in the current situation and recommendations. In the current situation, the Kraljic's purchasing model is used to categorize products and analyze the importance of purchasing with consideration of the supply risk and financial impact. And then the current purchasing functions with the distribution of purchasing responsibilities are illustrated by using the basic purchasing functions from Van Weele (2004). The current purchasing activities of Yikang which are explained through making use of the purchasing process model also from Van Weele (2004). Finally, the bottlenecks of the organization of purchasing functions and purchasing processes are analyzed through linking the importance of purchasing to the current situation of the supply department.

In the chapter of recommendations, the purchasing functions from Van Weele (2004) and DMU from Webster and Wind (1972) are used to design the improved organization of purchasing functions with clear distribution of responsibilities and roles for each product categories. The Kraljic's purchasing process model (1983) is applied to find the corresponding purchasing strategies for each product category. After that, the purchasing processes for different product categories can be developed based on the different strategies in the form of flow chart.

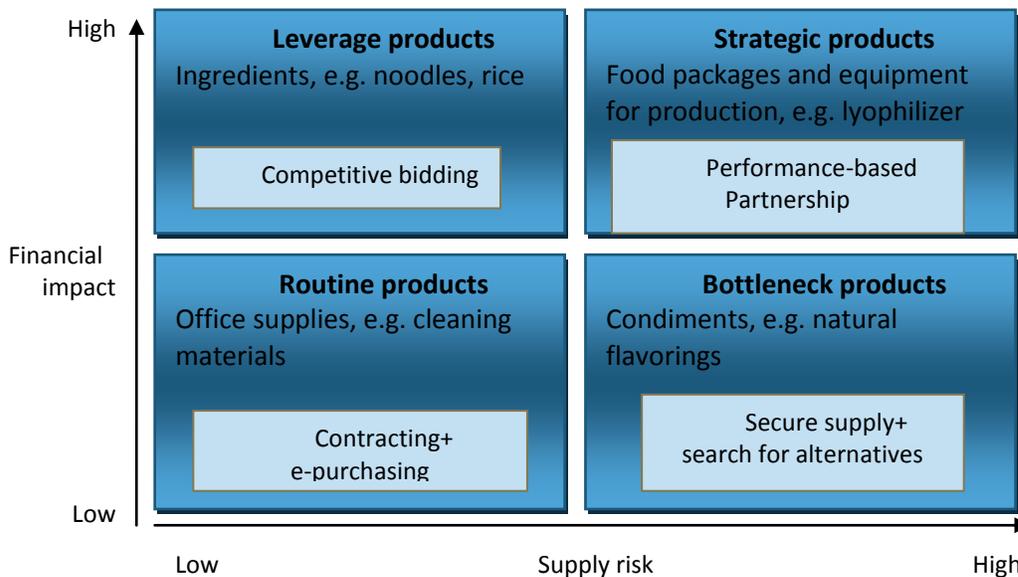
Chapter 3: Current situation

The current product categories are first defined, and then followed by the explanations about the importance of purchasing for the company. After that, the descriptions of the current supply department (including the purchasing functions and the distribution of the purchasing responsibilities) are described. Finally, the descriptions of the current purchasing activities are illustrated by following the steps of the purchasing process model from Van Weele (2004).

3.1 Current product categories (Kraljic's 1983)

As is shown in Figure 1.2 in the first part of this research, the purchased item groups of Yikang which include ingredients, condiments, food packages, equipment for production and office supplies. In the current situation, the products will be categorized according the purchasing portfolio model from Kraljic (1983), in order to support the analysis of the current situation. Figure 3.1 shows the current product categories according to Kraljic (1983).

Figure 3.1 **Current product categories** (Kraljic, 1983)



Routine products: the office supplies of Yikang are regarded as routine products since they have a small value per item and there are many alternative suppliers. The problem with this category is that there is more money involved in the ordering process than the value of purchased items. The purchasing process of this category should be organized efficiently, in order to save time for the other important products, such as e-purchasing.

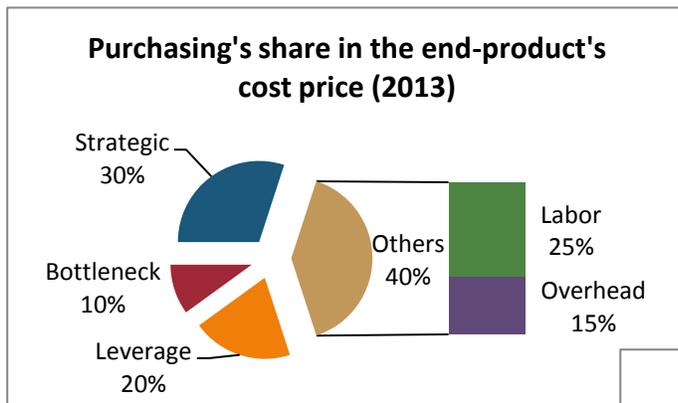
Bottleneck products: the natural flavorings which are purchased by Yikang fall within the category of bottleneck products. The supplier is dominant in the relationship, which often results in high prices and long delivery time.

Leverage products: most of the ingredients purchased by Yikang belong to this category. Examples of these products are noodles and rice. They can be obtained from various suppliers at standard quality (standard quality means the product which is not customized and without product differentiations). And they represent a relatively large share of the end product's cost price and they are very sensitive to price changes.

Strategic products: the food packages and equipment for production (e.g. lyophilizer which is the equipment used especially for freeze and dry the food materials) are the strategic products in the case of Yikang. They have high impact on the financial results.

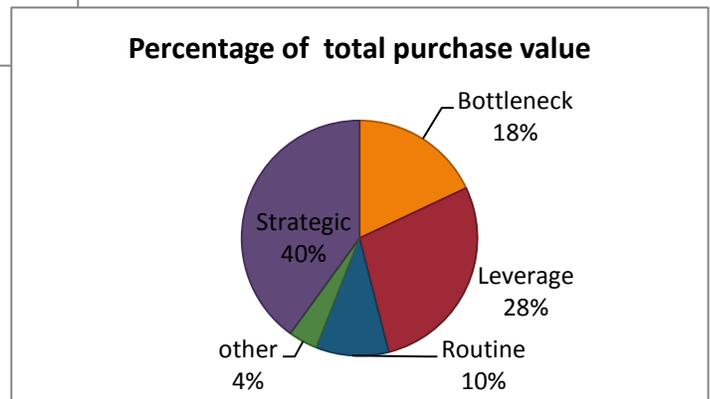
3.2 Importance of purchasing for the company

Figure 3.2 Purchasing's share in the end-product's cost price (2013) (Yikang, 2013)



According to Kraljic (1983), there are two factors which influence the importance of the purchasing within a company.

Figure 3.3 Percentage of total purchase value (2013) (Yikang, 2013)



Those factors are: the purchasing's impact on financial results (financial impact) and the supply risk. Figure 3.2 shows the purchasing's share in the end-product's cost price (the higher of the purchase cost, the higher of the end-product's cost price will be, which finally influence the product profit) and

Figure 3.3 shows the percentages of purchase value for the different product categories in the total purchase value (the higher of the purchase value means the more money is involved in

purchase that product category). According to these two figures, the strategic products are the most important category to the company, since the purchase costs of the strategic products in the end-product's cost price account for 30% and the purchase value of the strategic products accounts for 40% of the total purchase value, and the supply risk is high. In short, the importance of different product categories for the company in terms of financial impact and the size of supply base in descending order are strategic products, leverage products, bottleneck products and routine products.

3.3 Current supply department

In order to know the structure of the current purchasing functions, first we have to understand which purchasing functions that each product category has and then through analyzing how the purchasing responsibilities are divided for different product categories to know the structure of the current purchasing functions.

1. *Purchasing functions*

The purchasing functions carried out by the supply department include all the purchasing functions as mentioned in the Van Weele (2004)'s model, which are specification, supplier selection, contracting, ordering, expediting and follow up and evaluation. But the supply department of Yikang does not include all the above mentioned functions for every purchase, not only because the purchasing situations vary but also the common practice, experience, personal preferences of the Purchasing Supervisor and Purchasing staff will affect the choice of purchasing functions. In most cases, the supplier selection for the routine products is skipped, and bought directly from the friends of the Purchasing Supervisor or the purchaser. It is normal for the supply department not to follow-up and evaluation the suppliers due to the lack of attention by the top of the management on this matter.

2. *Distribution of purchasing responsibilities*

The distribution of purchasing responsibilities is shown in Table 3.1. The organization of current purchasing functions is concluded from Table 3.1 as shown in Figure 3.4 and 3.5.

Table 3.1 Distribution of purchasing responsibilities among different departments

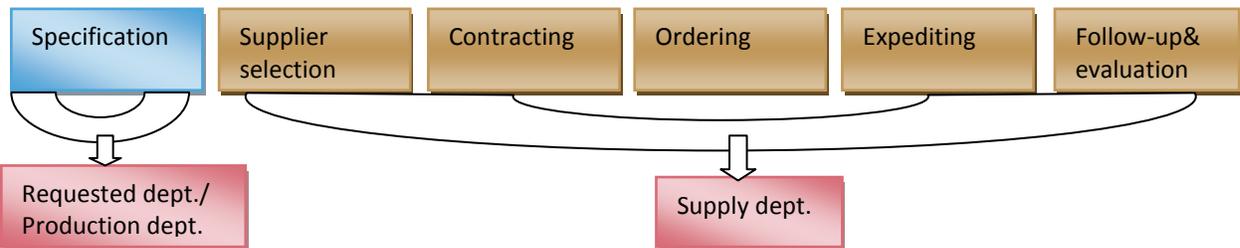
	Routine	Bottleneck	Leverage	Strategic
Specification	RD	P	P	P
Supplier selection	S	S	S	P+S
Contracting	S	S	S	P+S
Ordering	S	S	S	S
Expediting	S	S	S	S
Follow-up and evaluation	S	S	S	S

P: Production dept. S: Supply dept. RD: Requested dept. -: None

3. Organization of current purchasing functions

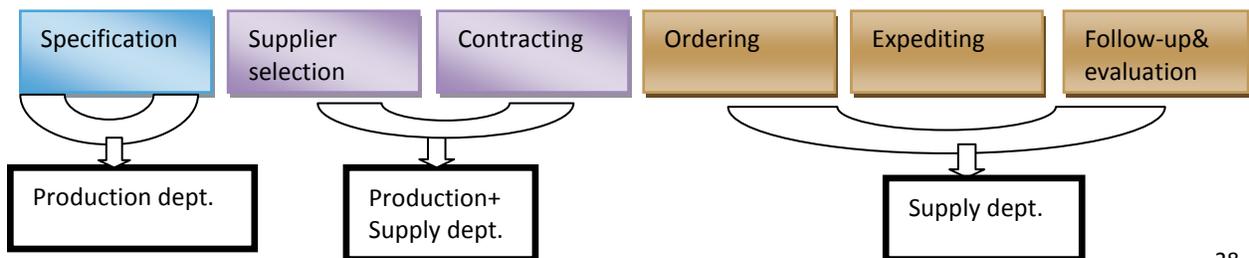
According to Van Weele (2004), there are six basic purchasing functions as shown in the following Figures. Figure 3.4 shows the specification function is authorized to either the requested department that request the products (for routine products) or the production department (for bottleneck and leverage products) and the remaining five purchasing functions are centralized in the supply department.

Figure 3.4 Purchasing function organization of routine, bottleneck and leverage products



For the strategic products (Figure 3.5), the organization of the purchasing functions focuses more on cooperation with the production department. Due to the complexity of the strategic products, the specification function is authorized to the production department, and the last three purchasing functions are centralized in the supply department. The cooperation between the production department and supply department is occurred in the supplier selection and contracting,

Figure 3.5 Purchasing function organization of strategic products



3.4 Current purchasing activities

In chapter one is mentioned that Yikang has no mandatory rules or specific requirements about the purchasing process. Past experience and personal preferences have a big influence on the decision made in the purchasing process. Table 3.2 shows the current purchasing activities for the different product categories by analyzing all the steps of the purchasing process model of Van Weele (2004).

Table 3.2 Current purchasing activities

	Routine products	Bottleneck products	Leverage products	Strategic products
Define specification	-Verbally defined by the requested department about the purchase order requirements.	Written in the purchase order requirements paper (quality and logistics specification).	Written in the purchase order requirements paper (quality and logistics specification).	Written in the purchase order requirements paper (functional or quality, maintenance, legal and environment specification).
Select supplier	No adequate supplier selection. Purchase from: - Nearest suppliers; -The suppliers with lowest price; -Friends or relatives.	Purchase from the same supplier.	No adequate supplier selection. Purchase from: -Local, nearest suppliers; -Friends who sell these products; -the suppliers with lowest price.	Purchase from the same supplier.
Contracting	Spot purchase without contract.	Short-term written contract.	Normally are: -One-time/spot purchase without contract or -Short-term written contract.	-Short-term written contract
Ordering	If there is no written contract, order by phone or e-mail; If there is a contract, order through based on the agreed date stated on the contract.			
Expediting	Exception expediting	Routine status check	Routine status check	Routine status check
Follow-up and evaluation	-Invoice settlement, settling warranty claims and penalty clauses. -Supplier assessment is either neglected or not adequate.			

It is not difficult to see that there is no specific purchasing process designed for each product category. The purchasing activities are carried out without any formal rules and no purchasing strategies (like tendering, e-purchasing) are applied, the personal relationship with the suppliers, price and the location seem as the dominant criteria for selecting the supplier. Besides, spot purchases are often used as a way to purchase goods which are required on a short notice, by using spot purchases, the purchasing price is high. (*Spot purchase is when you go out on the spot market and pay market value instead of going through your normal supply chain where you might have contracts or discounts set up. To make a spot buy usually is more expensive but it is to fill the immediate need (Brown)*).

Chapter 4: Analysis of the current situation

Section 3.2 to section 3.4 provide basis for analyzing the bottlenecks of the current supply department regarding the organization of the purchasing functions and the purchasing activities for the different product categories which are as follows:

Routine products

All purchasing functions except specification are centralized in the supply department. The supply department puts a lot of energy and time on purchasing the routine products. The order handling often takes more money than the value of the products in practice since there lack of the purchasing function like design efficient order routine for this kind of products.

Bottleneck products

As mentioned in Table 3.4, the supply department always purchases this kind of products from the same supplier, which increases the dependency that the company has on the supplier. Too dependent on one supplier causes high price is paid for the products. However, the supply department does not have the purchasing function of developing back-up plan. The supply department also does not put enough efforts on the establishment of good relationships with the current suppliers (short-term contracts are used and lack of adequate supplier assessment stated in Table 3.4).

Leverage products

The purchase costs of the leverage products account for 20% in the end-product's cost price, and they are the second important purchased product category. Changes to the price of the leverage products can have a big impact on the price of the end-product. However, there is no market research and evaluation included as one of the purchasing functions of the leverage products. The company fails to take advantage of the large supplier base to get competitive price.

Strategic products

As the high importance of the strategic products, the purchasing of strategic products should involve the GM and supplier into the specification phase to assure the right specification.

However, the specification for the strategic products is defined only by the production department, which causes problem like under-specification or over-specification.

Conclusions

After above analysis, two conclusions can be drawn regarding the organization of the purchasing functions and purchasing activities for the different product categories:

- ✚ Lack of the well-organized purchasing functions for the different product categories
- ✚ Lack of the standardized purchasing processes for the different product categories.

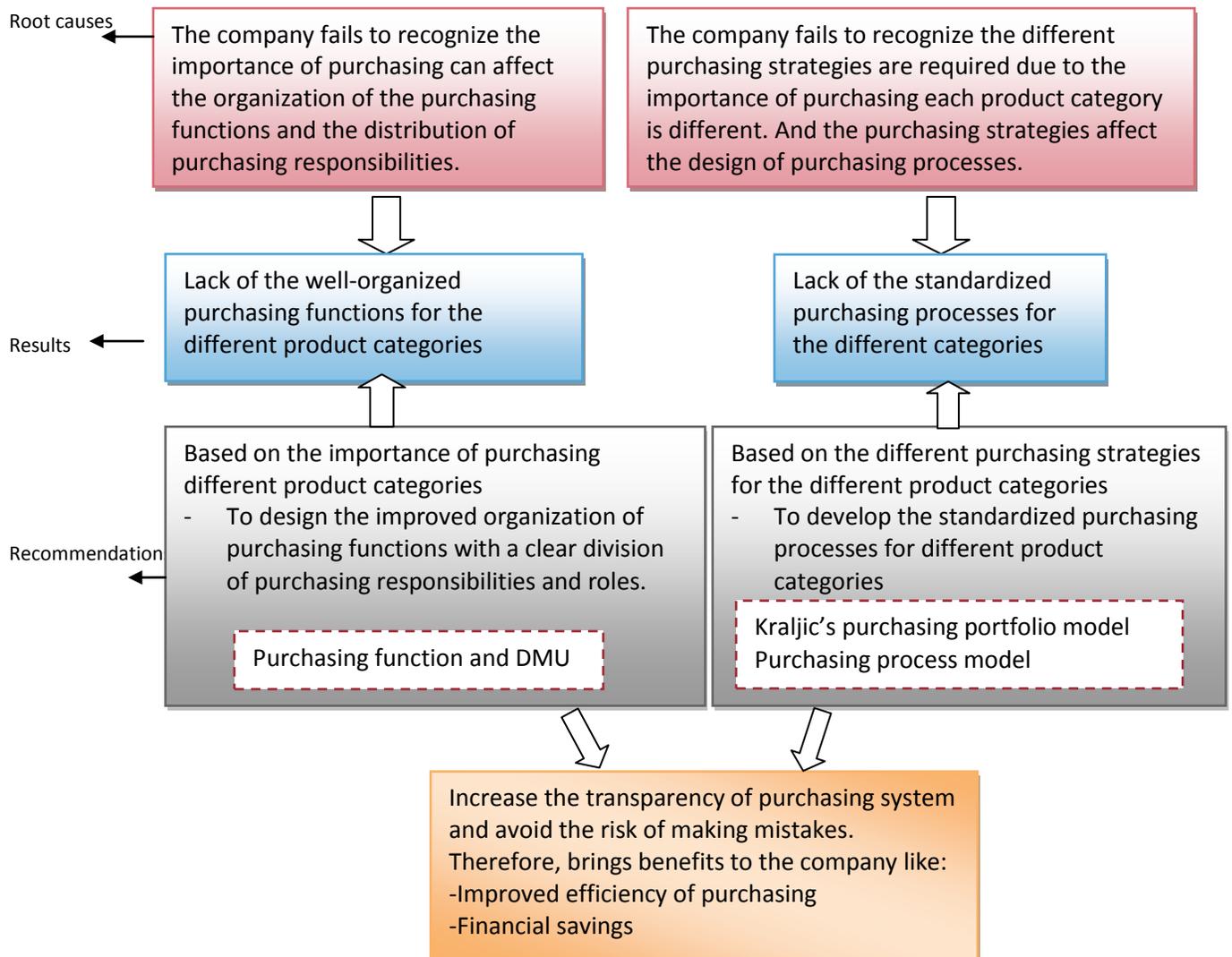
These two results lead to low transparency of the purchasing system and easy to make purchasing mistakes, finally they cause the low efficiency of purchasing and financial losses. The root causes of the lack of the well-organized purchasing functions and the standardized purchasing processes for the different product categories are as follows:

- 1) The company fails to recognize the importance of purchasing can affect the organization of the purchasing functions and the distribution of purchasing responsibilities. Generally, for the less important product categories, less purchasing function is required and less party is involved in the purchasing decision-making process. On the contrary, the important product categories require more purchasing functions and more parties are involved in the purchasing decision-making process.
- 2) The company fails to recognize the different purchasing strategies are required due to the importance of purchasing each product category is different. And the purchasing processes should be designed with the consideration of the impact of the different purchasing strategies.

Chapter 5: Recommendations

Based on the conclusions drawn in chapter 4, the recommendations are given in this chapter to achieve the research objective and also the objective of the company.

Figure 5.1 Overview of the recommendations



5.1 Improved organization of purchasing functions

For clarity, the improved organization of purchasing functions is explained per product category.

5.1.1 Improved organization of purchasing functions for routine products

The routine products are regarded less important to the company and the purchasing decision-making is on operational level (see Appendix 2). As mentioned in chapter 3, the costs of purchasing the routine products are not part of the end-products' cost price. This product category has a low value per purchase order and there are many suppliers to supply the products. The products are frequently ordered and easy to manage and should therefore not burden the company with the same administrative complexity as the more strategic items. Therefore, developing efficient routines for ordering and administration seems to be the goal that should be included in the purchasing function for the routine products. The improved organization is shown in Table 5.1

Table 5.1 Improved organization of purchasing functions for routine products

Purchasing functions:	Define specification	Supplier selection	Contracting	Establishing order routines	Ordering	Expediting	Follow up & evaluation
Responsible party	S	S	S	S	O	O	O
Responsible person	PS	PS	PS	PS	AB	AB	AB
Roles of responsible person	Gatekeeper			User; Buyer; Decision maker			

S: Supply dept. O: Other dept. PS: Purchasing Supervisor AB: Authorized Buyer

As Table 5.1 shows, the first four purchasing functions are centralized in the supply department, while the remaining three functions are authorized to the buyer. The Purchasing Supervisor is the gatekeeper since he controls the flow of information from the supplier towards the other members of the DMU and he screens contracts with particular suppliers. The authorized buyer is from any other department except the supply department, who has both the jurisdiction and the power to order, the authorized buyer in this case is also the user and decision maker since the right to order is authorized to him or her.

5.1.2 Improved organization of purchasing functions for bottleneck products

The bottleneck products are crucial for the continuous production flow and the decision-making level is on tactical level. This implies it is important to make sure that the supply of the products is secured, even though it may be at a higher cost in some cases. Except the purchasing functions

described by Van Weele (2004) are necessary for the purchasing of the bottleneck products, there are other functions stated in the literature should be included to secure the supply, such as conducting risk analysis to point out which products are the most essential in short-, middle-, and long-term, and then to form contingency plans. Optimizing the safety stocks, creating back-up plans and finding reliable substitutes, both products and suppliers, which reduce the dependency towards the suppliers used today and enables changes where it is needed. Any market data that can help in securing the supply is beneficial to collect. Based on the descriptions, Table 5.2 is drawn to show the organization of improved purchasing functions for the bottleneck products

Table 5.2 Improved organization of purchasing functions for bottleneck products

Purchasing functions	Responsible party	Responsible person	Roles of responsible person
Define specification	P	PM	PM: Influencer & user
Supplier selection	S	PS	
Contracting	S	PS	PS: Decision maker and gatekeeper
Ordering	S	p	
Expediting	S	p	p: Buyer
Follow up & evaluation	S	p	
Conducting risk analysis	S	PS	
Optimizing safety stocks	S	PS	
Creating backup plans	S	PS	
Finding reliable substitutes	S	PS	

S: Supply dept. P: Production dept. PM: Production Manager PS: Purchasing Supervisor p: purchaser

Table 5.2 shows only the function of defining specification is designated to the purchasing department, the remaining purchasing functions are centralized in the supply department. For the purchasing of the bottleneck products, the Production Manager has the role of both user and influencer. The Production Manager is able to affect the outcome of the purchasing process by giving product specifications. The roles fulfilled by the Purchasing Supervisor are the decision maker and gatekeeper and the purchaser's role is the buyer. Although the Purchasing Supervisor is the decision maker for purchasing the bottleneck products, still the Production Manager shall participate in the decision-making process such as the decision of safety stocks and substitutes.

5.1.3 Improved organization of purchasing functions for leverage products

The decision level of leverage products is also on tactical level and they have a low supply risk but a high financial impact. Since the supply risk is low and many suppliers are available, i.e.

they are interchangeable, the purchasing power is at the buyer. The focus can be put on identifying the product value together with volume to optimizing order quantity and reallocating purchasing volumes over suppliers to lower the costs. The price is important as small changes can have a huge impact on the end-products' cost price and hence the market should be continuously examined. The supply department should have the market research and evaluation functions to collect instance market data and vendor data. Table 6.3 is drawn to show the organization of improved purchasing functions for this product category. The roles of the responsible person are the same to the bottleneck products.

Table 5.3 Improved organization of purchasing functions for leverage products

Purchasing functions	Responsible party	Responsible person	Roles of responsible person
Define specification	P	PM	PM: Influencer& user
Market research and evaluation	S	PS	
Optimizing order quantity	S	PS	PS: Decision maker and gatekeeper
Reallocating purchasing volumes	S	PS	
Supplier selection	S	PS	P: Buyer
Contracting	S	PS	
Ordering	S	p	
Expediting	S	p	
Follow up& evaluation	S	p	

S: Supply dept. P: Production dept. PM: Production Manager PS: Purchasing Supervisor p: purchaser

5.1.4 Improved organization of purchasing functions for strategic products

As literature suggests, the decision-making level of this product category as the name implies is on strategic level and the strategic products are critical both for the production and for the financial results, both for the company and for the suppliers of those products. A more dependent relationship situation cannot be found within the portfolio model but on the other hand it is usually the same for both parties, which implies that both have an interest in maintaining a good relationship. A way of ensuring both a smooth relationship and an efficient process is to involve the suppliers at an early stage. This leads to a joint development which provides better or more knowledge inputs. Due to the high importance of the strategic products to the company, the important decision-making should be done by the company GM. The purchasing functions of the strategic products are similar to the functions of the bottleneck products, because they all have high supply risk. But the responsible party and roles of party are quite different.

Table 5.4 shows the GM is responsible for the purchasing functions from defining specification to contracting and has the roles of decision maker and gatekeeper. The suppliers as the influencers are also involved in the development of specification, which enables the company to utilize the expertise of suppliers. The more tactical and operational functions are designated to the supply department. The Purchasing Supervisor is the buyer who actually places the order.

Table 5.4 Improved organization of purchasing functions for strategic products

Purchasing functions	Responsible party	Responsible person	Roles of responsible person
Define specification	GM+s	GM+s	s: Influencer
Supplier selection	GM	GM	GM: Decision maker & gatekeeper
Contracting	GM	GM	
Ordering	S	PS	PS: buyer
Expediting	S	PS	
Follow up & evaluation	S	PS	
Conducting risk analysis	S	PS	
Creating backup plans	S	PS	
Finding reliable substitutes	S	PS	

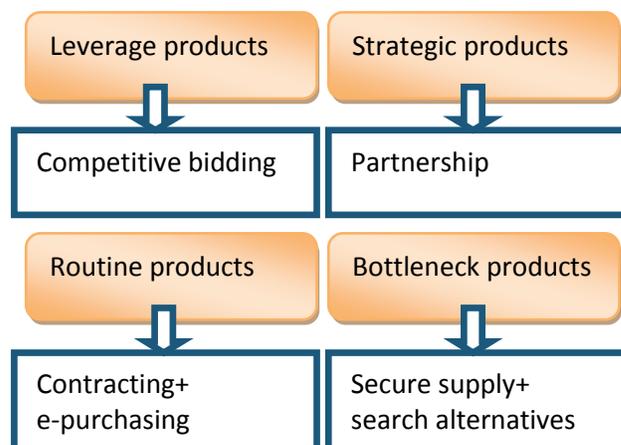
GM: General Manager s: Suppliers S: Supply dept. PS: Purchasing Supervisor

In order to present a better overview, the organizations of improved purchasing function for all the four product categories are combined in one Table (see Appendix 3).

5.2 Purchasing processes

The purchasing processes are designed based on the purchasing strategies for the different product categories. According to Kraljic’s (1983), the corresponding strategies are shown in Figure 5.2. The descriptions and basic characteristics about these four purchasing strategies can be found in the theoretical framework (the corresponding strategies) and Appendix 2.

Figure 5.2 Purchasing strategies for the product categories



The four suggested purchasing processes for the products of Yikang are corresponding to the four product categories (routine, bottleneck, leverage and strategic products), have utilized the matching strategies (e-purchasing, secure supply, competitive bidding and partnership) and are based on the underlying process of purchasing process model from Van Weele (2004). In this section, only the suggested purchasing process for the routine products is shown here as an example, the other three suggested purchasing processes for the bottleneck, leverage and strategic products are incorporated in Appendix (see Appendix 4 till Appendix 6).

5.2.1 Suggested purchasing process for routine products

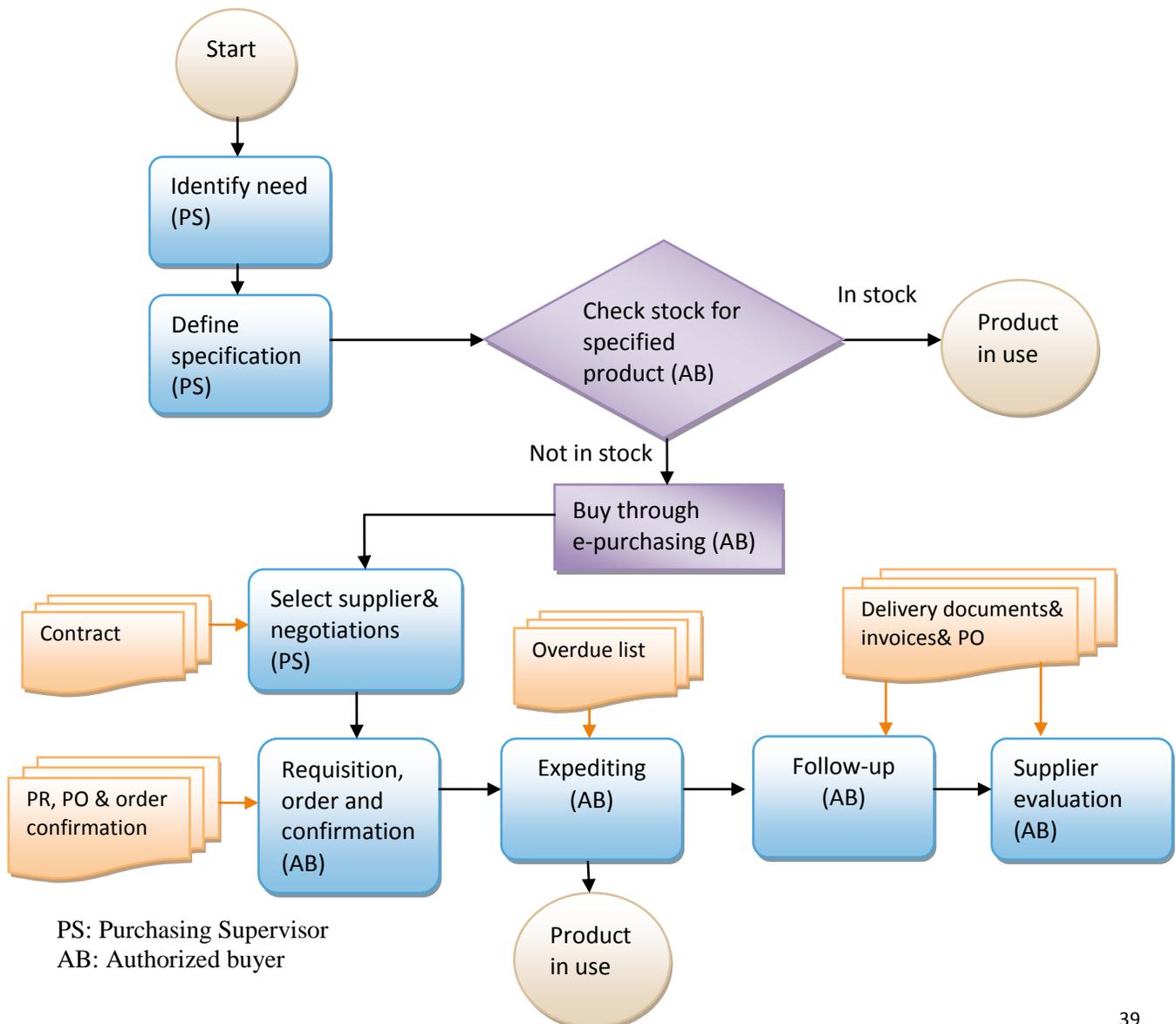
As the literature suggests, a suggested solution for increasing the efficiency is to adopt e-purchasing together with suitable suppliers. One example is to create internet-based catalogue or use the one which is already developed by the supplier. It is important to include relevant items for the company and preferably enable that products can be ordered as groups. The supply department should agree on the contracts with the suppliers in beforehand and for a reasonable period of time. The systematic contracts enable the buyer to order straight from the supplier, of course as mentioned in section 5.1.1 the person has to have both the jurisdiction and power to do this. This implies that the supply department does not need to be involved in every day's purchasing or someone in the supply department is dedicated to easy administrative task for a low salary. Considerable amount of administrative work is reduced and the purchasing process is more efficient.

An illustration of how a purchasing process for the routine products of Yikang can be designed is shown in Figure 5.3. The orange boxes are the documents needed for that process. The blue boxes with rounded corners belongs to the basic purchasing process that was developed based on the purchasing process model from Van Weele (2004), and the extra purple boxes are the ones that differ between the four suggested processes (this process and the other three processes). The brackets in the boxes show which specific person is responsible for that process. The six steps from Van Weele's purchasing process model are seen as appropriate to describe it in from a theoretical perspective. These seven basic purchasing processes are therefore chosen to be used to describe the overall process of all product purchases at Yikang (identify need; define specification; select supplier& negotiations; requisition, order and confirmation; expediting;

follow-up; supplier evaluation). The same format goes for the remaining purchasing processes of the other three product categories in Appendix.

Identify need and define specification: the process is based upon the fact that contracts already have been agreed for suitable products and suppliers, so there should not be much to decide upon. For the stage of defining specification, the focus is mainly put on deciding quantity and specific technical requirements. An important aspect in here is to establish a procedure that helps the authorized buyer to know what specific products he or she should order, i.e. any internal (or external) standards that either should be followed or preferably should be followed. So it can help to get away from experience-based or arbitrary choices.

Figure 5.3 Suggested purchasing process for routine products



The authorized buyer (the buyer normally not from the supply department who is empowered to have the right to order straight from the supplier) should check whether the required products are in stock. If the required product is in warehouse, the authorized buyer can get it through internal delivery. When the product is not stock-kept, he or she can buy through e-purchasing.

Select supplier & negotiations: the supplier selection is only relevant if the company has decided to change the supplier for the same product. Negotiations are also not relevant since this have been dealt when contracts were agreed.

Requisition, order and confirmation: the requisition is sent when making the order. Ordering products through e-purchasing should not involve the supply department and hence the order is sent by the authorized buyer and then the order confirmation should be received by the same person.

Expediting: expediting is conducted based on an overdue list by the authorized buyer, which records all deliveries that are late. The routine status check is recommended here.

Follow-up: the routine procedure can be evaluated by the authorized buyer whether the process can be seen as straight rebuy or if anything has to be changed that instead makes it become a modified rebuy, e.g. delivery or payment terms or a technical specification for a quality increase. The documents needed here are delivery documents, invoice and purchase order.

Supplier evaluation: although the routine products are not as important as other products, the supplier evaluation is also important. To ensure a high efficiency of the e-purchasing solution, the suppliers should be evaluated regularly foremost to ensure that the right price and quality is maintained. Therefore, avoid sudden problems of suppliers which lead to the situation that new suppliers have to be found. The purchase order, delivery documents together with invoice form the basis for the vendor rating system.

Chapter 6: Conclusions and recommendations

In this chapter, the conclusions about this research as well as the recommendations which are related to the research problem are given.

6.1 Conclusions

The conclusions summarize the main findings of this research which are as follows:

1. There are four kinds of products purchased by Yikang, namely the routine products (office supplies), bottleneck products (natural flavorings), leverage products (noodles and rice) and strategic products (food packages). After analyzing the importance of purchasing function for the company according to Kraljic's two factors (the purchasing's impact on financial results and the supply risk), it proves the purchasing function has significant importance for the company and especially the strategic products are crucial to the company and then the leverage products and bottleneck products, the routine products have the least importance for the company.
2. The supply department of Yikang contains all the purchasing functions mentioned in Van Weele's model (specification, supplier selection, contracting, ordering, expediting, follow-up and evaluation), the importance of each purchasing function for purchasing different product categories is not well-recognized by the Purchasing Supervisor. Which leads to arbitrary purchasing and some of the purchasing functions are neglected (supplier evaluation) when purchasing the products that are considered less important by the Purchasing Supervisor.
3. The organization of the purchasing functions for the different product categories is reflected from the distribution of purchasing responsibilities. All product categories have the same purchasing functions only the organization of the purchasing functions varies, the organization of the purchasing functions is not depending on the importance of each product category, which increases the administrative complexity and lower the efficiency of purchasing. For the routine, bottleneck and leverages products, the specification function is authorized to the requested department or production department, and the remaining purchasing functions are centralized in the supply department. For the strategic products, the production department plays the main role in defining specifications, participates in supplier

selection and contracting, the remaining more operational functions are centralized in the supply department. The distribution of purchasing responsibilities is on department level instead of specifying to specific person, which makes the responsibilities not clear and transparent to the departments involved.

4. There is no standardized purchasing process of each product category to guide the corresponding purchasing activities. Past experience and personal preference of the Purchasing Supervisor and the purchaser have big impact on the purchasing activities. Without the standardized purchasing processes for different product categories increase the risk of making purchasing mistakes.

All in all, the above mentioned findings imply that the purchasing functions for different product categories are not well-organized and the corresponding purchasing responsibilities are not clearly distributed due to the company fails to recognize the importance of different product categories. Furthermore, they also imply that the company fails to recognize the different product categories require different standardized purchasing processes since the purchasing strategies for them varies. Because of lacking well-organized purchasing functions with a clear distribution of purchasing responsibilities and the standardized purchasing processes, for different product categories, the transparency of the purchasing system of Yikang is low and the risk of making mistakes is high and finally causes the low efficiency of purchasing and financial losses.

6.2 Recommendations

The detailed recommendations to the company to achieve the research objective are given in chapter 5, in this section, these recommendations are briefly summarized at below and the further actions for implementing the recommendations and the further research for Yikang regarding the organization of purchasing functions and purchasing process are discussed in the end of this research.

- ✚ *Lacking of the well-organized purchasing functions for the different product categories:* the recommendation is to design the improved organization of purchasing functions with a clear distribution of purchasing responsibilities and roles to specific person (since the purchasing functions are reorganized, the reallocation of purchasing responsibilities and roles is

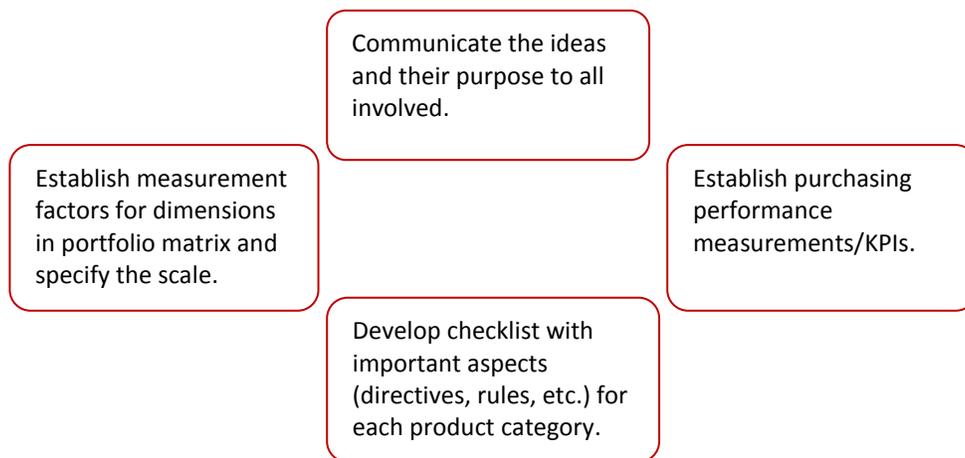
inevitable) based on the importance of different product categories. The theories about purchasing function and DMU are important for this first recommendation.

✚ *Lack of the standardized purchasing processes for the different categories:* The purchasing processes should be designed with the consideration of the impact of the different purchasing strategies. The suggestion for that is to develop the standardized purchasing processes for different product categories based on the different purchasing strategies for the different product categories. This requires the help of Kraljic’s purchasing portfolio model to find out the right purchasing strategies. And then to develop the purchasing processes for the different product categories with the help of the corresponding purchasing strategies and purchasing process model.

Further actions

Although the implementation plan is not within the scope of this research, a number of recommendations which are important for the company to better implement the recommendations are given in Figure 6.1.

Figure 6.1 Recommendations on further actions for Yikang



Before actually implement the recommendations given in this research, it is important to communicate the ideas and the purpose of the project to all people involved, so they can better understand the project and willing to cooperate with the implementation. In order to get and also keep the better result from the implementation of the recommendations, establish KPIs for measuring the purchasing performance is recommended, the purchasing performance can then be

continuously monitored and any bottlenecks within the purchasing functions can be detected opportunely. Moreover, develop checklist with important aspects (directives, rules, etc.) for each product category, the purchasing decision-making can base on the directives and rules and eliminate arbitrary purchases. The last but not least, establishing measurement factors for the dimensions in the portfolio matrix and specify the scale enables the supply department to identify the right product category for the products that they plan to buy, so they can follow the right directives and purchasing process for that product category, and it is up to the company to decide whether to include the different purchasing processes for different product categories into the directives.

After successfully implement the recommendations with considerations of the above further actions, the company can expect the increased transparency in purchasing and low risk of making mistakes. The benefits can be the improved efficiency of purchasing and certain financial savings.

6.3 Further research

All purchasing functions of Yikang are managed without the support of any information system, which increase the administrative complexity of organizing the different purchasing functions and lower the efficiency of purchasing process. The author believes the recommendations given in this research can be better supported by implementing a suitable Purchasing Information System. Thence, the further research for Yikang can be the research on the implementation of PIS. PIS manages the entire acquisition process, from requisition, to purchase order, to product receipt, to payment and helps companies determine what to buy, how much to buy and when to buy it. With PIS, companies can expect more efficient purchasing process, reduced supply costs, reduced human error, thereby minimizing the purchasing risks. They can also simplify order tracking and make it easier to manage purchasing budgets by quickly creating expenditure reports. Besides, PIS enables companies to manage the quality of their suppliers by vendor rating. (Investopedia, 2014) There are much more functions for more advanced PIS (the big suppliers of PIS are Oracle and SAP), Yikang should carefully evaluate whether a PIS is necessary for the company and if the answer is yes, and then which selection criteria should be. It is always important to keep in mind that it is wise to select the right PIS based on the practical requirements of the company instead of the price.

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Appendix 1 Applied instruments in the research

Sub questions	Instruments	Reason for choosing the instruments	Way of application
What kinds of products are purchased? (the scope of purchase)	<ol style="list-style-type: none"> 1. Consulting 2. Field investigation 	Can get the required information quickly and accurate.	<p>.Consult Purchasing Supervisor.</p> <p>.Work in the supply department and observe what products are purchased in the daily work.</p>
What product categories of Kraljic do the products fit in or can be defined?	Literature review	Can find out how to apply Kraljic's model to categorize the products purchased.	Understand the characteristics of products purchased and match to the characteristics of product categories from Kraljic.
Which criteria are being used for measuring the importance of purchasing different product categories?	<ol style="list-style-type: none"> 1. Literature review 2. Documents review 	<p>.Can find out the suitable criteria.</p> <p>.Can find out the information about purchasing value.</p>	Use the criteria from Kraljic's model as the measurement tool (financial impact and supply risk).
Which purchasing functions are included in the current Supply Dept.?	Field investigation	Can get the required information more accurate.	Work in the supply department, observe and summarize work procedures to know the purchasing functions.
How are the current purchasing responsibilities divided?	<ol style="list-style-type: none"> 1. Documents review 2. Consulting 	Can get the required information directly and the accuracy is assured.	Review the department profile and instruction and consult Purchasing Supervisor for the distribution of responsibilities.
Which purchasing functions are centralized in the supply department and which ones are authorized to other related departments?	Interview	Can get more comprehensive information than consulting.	Prepare a list of questions regarding not only the organization of purchasing functions but also the expectations to the desired situation, and ask GM and Purchasing Supervisor.
Does the company have different purchasing activities for different product categories? If yes, what are the different purchasing activities? If no, how the company does?	Field investigation	Can get the required information more accurate.	Work in the supply department, observe how different products are purchased and summarize the purchasing activities.

What are the bottlenecks of the current situation regarding the organization of purchasing functions and purchasing activities for the different product categories?	<ol style="list-style-type: none"> 1. Field investigation 2. Literature review 	Can get the required information more accurate.	Summarize my work experience and analyze the current situation. And also read relevant literature to find out the possible outcomes of the bottlenecks.
What are the conclusions of the current situation?	The answer for this question is obtained not through the research instruments but through conclude the previous question.		
What are the root-causes of the current situation?	Consulting		Consult my colleague and company mentor about their opinions of the causes of the current situation.
Which theories can be used to formulate recommendations?	<ol style="list-style-type: none"> 1. Desk research 2. Literature review 3. Internet 	Can obtain comprehensive relevant information and theories to help in finding recommendations	Search and read the relevant theories and information to formulate a set of recommendations.
What are the recommendations regarding the organization of the purchasing functions?			
What are the recommendations regarding the design of the purchasing processes?			

Appendix 2 Basic characteristics of the four supplier strategies (Van Weele, 2004)

Strategies	Partnership	Competitive bidding	Secure supply	Category management and e-purchasing suggestions
Characteristics				
Objective	.Create mutual commitment in long-term relationship	.Obtain 'best deal' for short term	.Secure short-and long-term supply .Reduce supply risk	.Reduce logistics complexity .Improve operational efficiency .Reduce number of suppliers
Suitable for	.Strategic products (gearboxes, axles, optics, engines)	.Leverage products (commodities, wire)	.Bottleneck products (natural flavors, vitamins)	.Non-critical products (consumables, supplies)
Activities	.Accurate forecast of future requirements .Supply-risk analysis .Careful supplier selection . 'Should cost' analysis .Rolling materials schedules .Effective change-order procedure .Vendor rating	.Improve product/market knowledge .Search for alternative products/suppliers .Reallocate purchasing volumes over suppliers .Optimize order quantities . 'Target-pricing'	.Accurate forecast of future requirements .Supply-risk analysis .Determine ranking in supplier's client list .Develop preventative measures (buffer stock, consigned stock, transportation) .Search for alternative products/suppliers	.Subcontract per product group/product family .Standardize product assortment .Design effective internal order delivery and invoicing procedures .Delegate order handling to internal user
Decision level	.Strategic level .Cross-functional approach	.Tactical level .Purchasing	.Tactical level .Cross-functional approach	.Operational level .Cross-functional approach

Appendix 3 Overview of improved organization of purchasing functions for four product categories

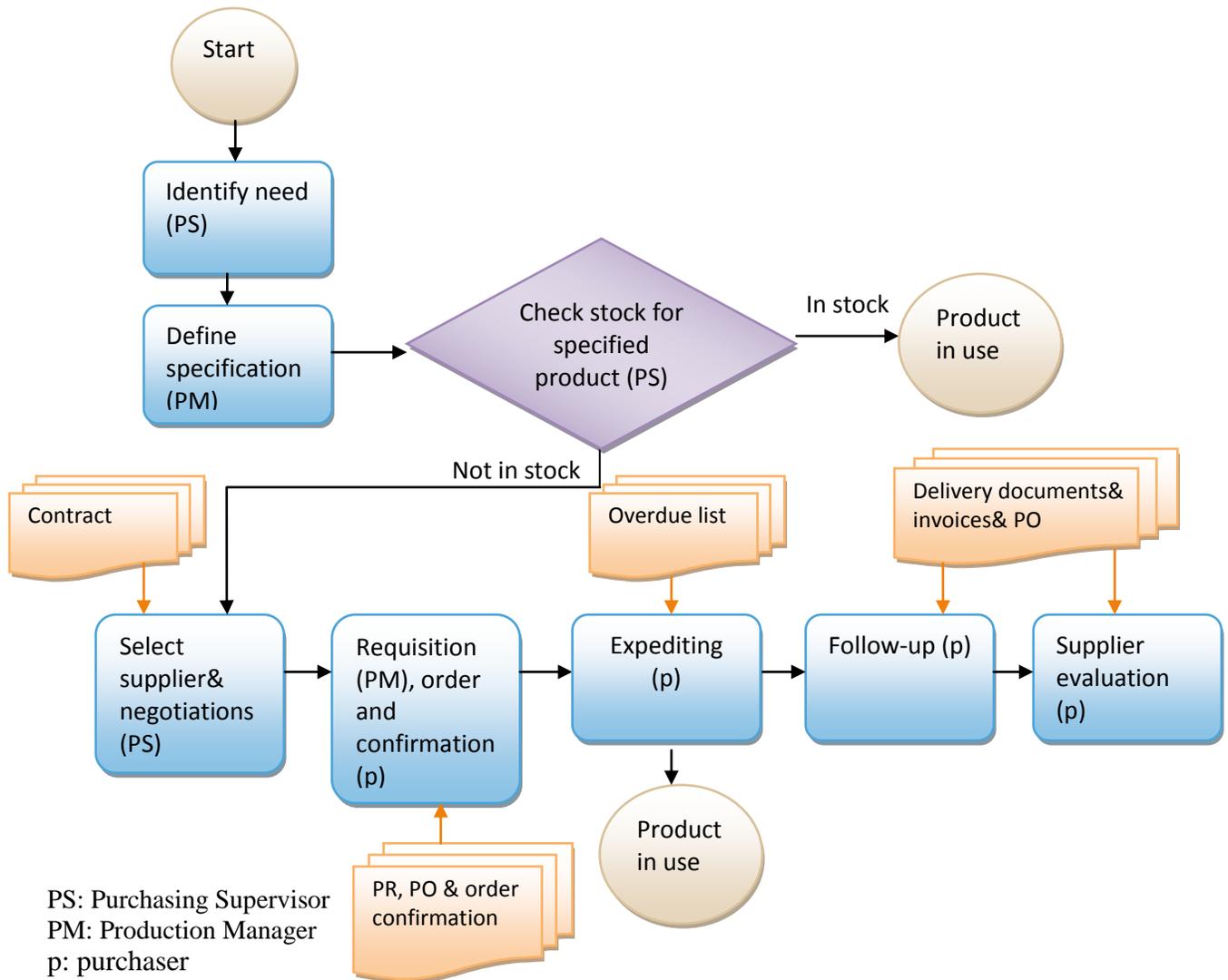
Purchasing functions	Routine products		Bottleneck products		Leverage products		Strategic products	
	Responsible Person	Roles	Responsible Person	Roles	Responsible Person	Roles	Responsible Person	Roles
Define specification	PS	PS: Gate-keeper	PM	PM: Influencer & user PS: Decision-maker and gate-keeper p: Buyer	PM	PM: Influence r& user PS: Decision-maker and gate-keeper p: Buyer	GM+s	s: Influencer GM: Decision maker & gatekeeper PS: Buyer
Market research and evaluation	-		-		PS		-	
Optimizing order quantity	-		-		PS		-	
Reallocating purchasing volumes	-		-		PS		-	
Supplier selection	PS		PS		PS		GM	
Contracting	PS		PS		PS		GM	
Establishing order routines	PS		-		-		-	
Ordering	AB		p		p		PS	
Expediting	AB		p		p		PS	
Follow up& evaluation	AB		p		p		PS	
Conducting risk analysis	-	PS	-	PS				
Optimizing safety stocks	-	PS	-	-				
Creating backup plans	-	PS	-	PS				
Finding reliable substitutes	-	PS	-	PS				

PS: Purchasing Supervisor AB: Authorized Buyer PM: Production Manager GM: General Manager
 s: Suppliers p: purchaser

Appendix 4: Suggested purchasing process for bottleneck products

According to Kraljic (1983), the strategy for the bottleneck products is securing supply plus actively searching for alternatives. In section 5 .1.2 mentioned several ways to do that, for instance, conducting risk analysis to form contingency plans, optimizing the safety stock, creating back-up plans and finding suitable substitutes both products and suppliers. As can be understood from the discussion here, most of the activities concerning the bottleneck products are not part of the process for each purchase. A lot of work has to be done outside the process. Hence, the purchasing process for bottleneck products is illustrated very similar to the one that the routine products have, see Figure A-1

Figure A-1 Suggested purchasing process for bottleneck products



Identify need: in this stage, the buying situation is identified by the Purchasing Supervisor. Even though it is regarded as straight rebuy, the modified rebuy should in most cases be considered since securing the supply is at crucial importance. The thoughts about the product in this first step affect which measures are taken later on.

Define specification: this should be done with respect to the suggested or stated standards, as it is said for the routine products, if the product is not totally new for the company.

Select supplier & negotiation: due to the supply risk is high, the supplier selection should emphasize on the importance of a continuous supply from the supplier, and this has to be done within the negotiations. Since the suppliers of the bottleneck products in Yikang's case are more interchangeable and hence the products (condiments) less critical than what is commonly stated in literature for the bottleneck products. The focus for Yikang should be also put in finding that any new supplier can meet their requirements.

Requisition, order and confirmation: when a requisition is being placed by the Production Manager, it has to be handled by the purchaser. Since they have a low financial impact as the routine products therefore should not be burdened with unnecessary administrative costs (in terms of time), the efficiency would be improved if the Production Manager could be able to place the order directly to the supplier. In this case, the pre-established contracting terms are required, therefore it is suggested that the bottleneck products can also be handled in the same way as the routine products, i.e. e-purchasing. The expediting process of the bottleneck products has the same discussion as the routine products.

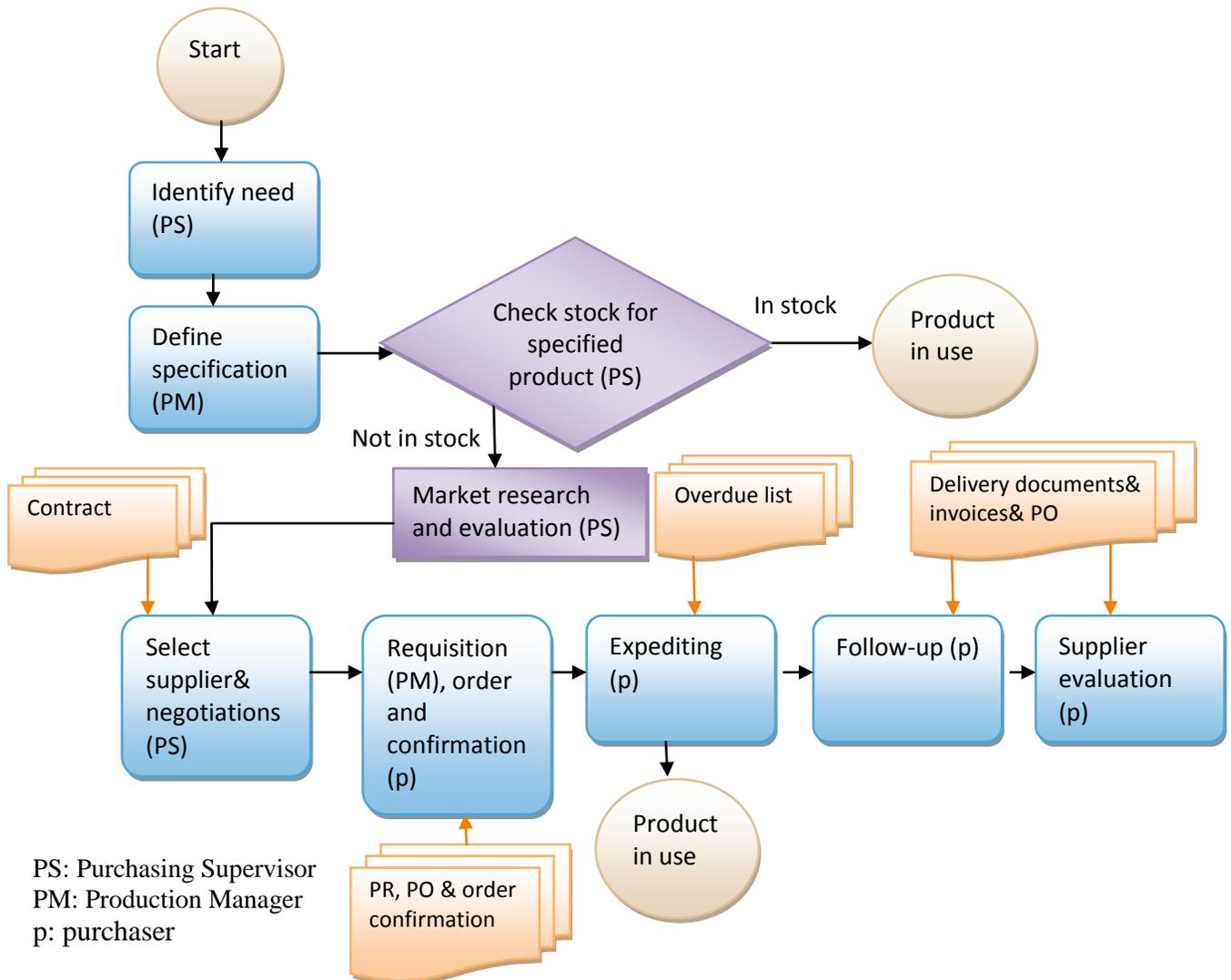
Follow-up: as discussed previously, there are a lot of work has to be done outside the process, but it is a matter of definition whether some of them should be seen as follow-up activities. The purchasing records can be the input for risk analysis.

Supplier evaluation: this is vital due to the supply risk is high. As stated in literature, the up-to-date record of suppliers' performance is important for future purchases, i.e. to form bidder's short list.

Appendix 5: Suggested purchasing process for Leverage products

Competitive bidding is the suggested strategy for the leverage products since they have large supply base and high financial impact. This strategy can help the company to take advantage of the competition among suppliers and get the best deal for a short term and the need to establish long-term relationship seems not necessary. However, relationships could be established if it would be better for purchasing very high volumes from some suppliers and thereby lowering the costs. The leverage products are also sensitive to price change. The market should be continuously evaluated, so the information can contribute to the supplier selection (see Figure A-2).

Figure A-2 Suggested purchasing process for leverage products



Identify need: the buying situation is identified in this step. The leverage products are one of the best categories to try new suppliers because the supply risk is lower than the strategic and bottleneck products. The company does not bound to the long contracts suggested for the bottleneck products, but for modified rebuy the company should also have records on the performance of the previous suppliers.

Define specification: the question on whether the product is on stock or not should be answered, but it is not usual or recommend to having stock for this kind of product category.

Market research and evaluation: this is to emphasize the Purchasing Supervisor's power (as a buyer) for the leverage products. As the supply base is large and financial impact is high, the Purchasing Supervisor has the chance to separate the cheaper suppliers from the expensive ones before they are contracted.

Select supplier & negotiations: RFQ is sent to the sufficient amount of chosen suppliers the best price can be obtained through competitive bidding. It is important to keep in mind, although the price is the factor which is focused most in this case, TCO is what is most interesting. The negotiations have to be well-prepared and negotiate harder to get the best deal by using the purchasing power at hand.

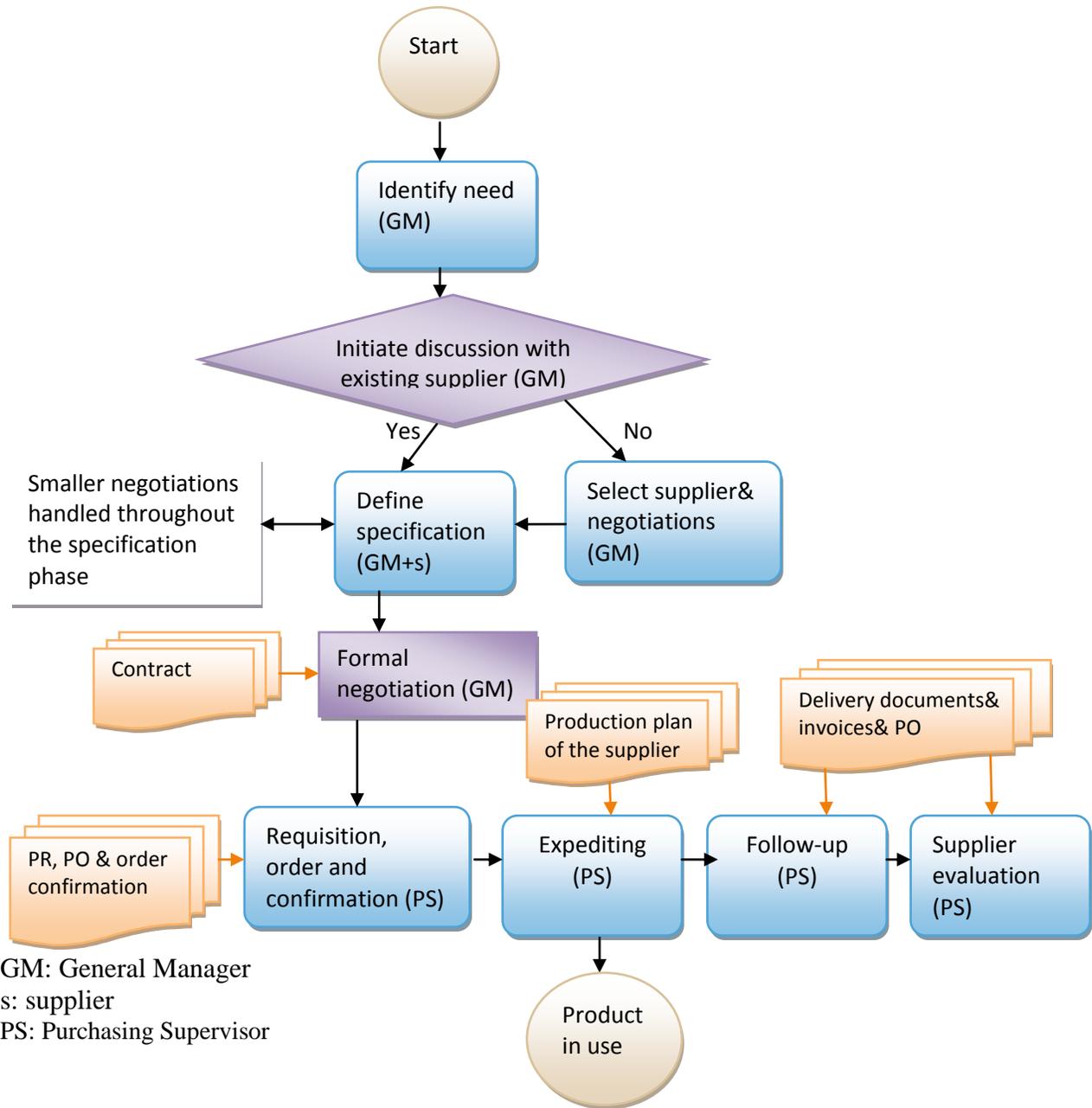
Requisition, order and confirmation: due to the high financial impact for the leverage products and the buying frequency is lower by comparing with previous two product categories therefore the supply department can transform several requisitions into one purchase order. Besides, the order confirmation should be checked very carefully since the high financial impact of the product and make sure the confirmation is received timely by the suppliers. The expediting process of the leverage products has the same discussion as the routine products.

Follow-up: since the supply risk is low, the modified rebuy is commonly seen for the purchasing of leverage products. In order to efficiently change supplier, it is necessary to gather required information continuously.

Supplier evaluation: large amount of money is spent on purchasing the leverage products which justifies more thorough investigations of the suppliers. Besides, keeping record of suppliers makes it easier for the Purchasing Supervisor to make decision on changing suppliers.

Appendix 6: Suggested purchasing process for strategic products

Figure A-3 Suggested purchasing process for strategic products



The most critical products in terms of both supply risk and financial impact are strategic products, and the strategy focuses more on establishing long and sustainable relationships with the suppliers (partnership). A way of ensuring that relationship is to involve the suppliers at an early stage, and this usually leads to better knowledge inputs for product development. The close relationship focuses on the overall process improvement, increased quality and improved product

development. Keeping such a relationship is dependent on consistent and frequent information sharing and exchange. Moreover, the management of Yikang should be aware of the suppliers' performance. Although the change of supplier is not seen as an alternative, measures have to be taken if they are evaluated as bad. Thence, supplier evaluation is also important for the strategic products. See Figure A-3 the purchasing process of strategic products which involves supplier in.

It has to be clarified that the purchasing process for strategic products can be changed according to the character of product purchased, the supplier used, the amount of money involved and the time span for the project. Figure 5.6 just here to show some characteristics of the purchasing process of strategic products.

Identify need: none of the strategic products bought by Yikang are stock-kept and therefore that question is not applicable in this process. In most cases, the buying situation for this product category is seen as a new task, which implies a large amount of information is required and many important decisions have to be made.

Initiate discussion with supplier: in this phase, the GM makes decision on which supplier to start cooperating with, this does not usually mean that this is the supplier that the company will finally buy product from them. Today, Yikang has established relationship with the suppliers that deliver the strategic products and therefore we can assume that the choice made here is the one that holds throughout the process.

Define specification and (select supplier and) negotiation: with regard to the previous description the supplier selection becomes irrelevant to this process. The specifications are developed together with the supplier and as an own process, due to the fact that 'partnership' is suggested by the literature to be the strategy for the strategic products. Some small negotiations are hold along the way of defining specification, but the formal negotiations about the terms of price, delivery and other legal aspects are hold separately after the specification phase. Due to the importance of the strategic products, the preparation of the negotiations is highly emphasized. The GM has to prepare issues like making sure what is wanted and negotiation limits on different terms and the prioritization, and deciding upon entry and exit point

Requisition, order and confirmation: the purchase requisition and order for strategic products are handled by the Purchasing Supervisor. The same as the leverage products, the confirmation should be sent and make sure the supplier receives it timely.

Expediting: The expediting of the strategic products is very important since they have tight quality tolerances. In this case, the advanced status check is suggested and it is better to request the supplier to provide a detailed production plan (this should be taken in contracting stage), so the Purchasing Supervisor can monitor the production progress by means of periodical checks against the production plan.

Follow-up and supplier evaluation: the follow-up activities for strategic products can be invoice administration, updating supplier files and evaluation of the relationship. The strategic products are the most important product category to have supplier evaluation due to the characteristics of the products. It should not be a problem to let the supplier to cooperate for evaluations, because both supplier and buyer should look for the mutual gain in this partnership. However, to what extent the supplier is willing to share information with the company can be a matter to be taken care of.