

AN ANALYSIS OF THE SELECTION AND EVALUATION OF SUPPLIERS IN LOW-COST COUNTRIES

Fan Zixi

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Abstract <p>The company Finn radiator in Suolahti has manufactured radiators for many worldwide automobile industries with a very long history. Over the years, this company has developed rapidly and expanded its business into many oversea markets. Nowadays, Finn radiator is aiming at manufacturing tailor-made radiators, coolers and heating systems with good a quality for their customers. Due to the large amount of material consuming, such as copper and aluminum, the company has to source raw materials from outside of Finland, especially from low-cost countries, so that maximize its profits through cutting down material costs. However, Finn radiator is presently worried about the unstable quality level of components from the low-cost countries.</p> <p>The purpose of this thesis was to develop supplier evaluation and selection criteria in low-cost countries. The aim was to provide feasible plans for Finn radiator for choosing suitable suppliers who can offer good quality products as well as minimizing risks while sourcing from low cost countries.</p> <p>In summary, a theoretical model was developed that provided possible solutions and advice for Finn radiator's low-cost country sourcing strategy.</p>		
Keywords Supplier evaluation, supplier selection criteria, sourcing		
Miscellaneous		

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1. INTRODUCTION

Problem Statement

In modern business, choosing a suitable supplier is a crucial business process in many companies. A good supplier usually denotes lower risks and a higher profit. However, there are always various kinds of challenges when a company selects a supplier. Financial status is one of the most considerable issues for supplier selection. Many companies prefer to pick big players due to sufficient funds they have. Is a smaller supplier really less competitiveness than a “rich” supplier? A small supplier might be much more flexible and easier to control and direct the capital flow to unlike a big supplier. The capital flow of big suppliers is usually fixed and stable, but the fund circulation is fragile when they encounter problems because of the inaccessible transfer of funds. In this case, it implies that an elastic fund circulation system is more significant than the total amount of capital, and the fund size is not the only index for picking a supplier. Besides, specific requirements of choosing suppliers vary between the different business fields. Many industries, especially chemical industry, always have rigorous environment and safety requirements to their supplier. Thus, exhaustive and accurate selection criteria are necessary when selecting a supplier.

Research Methods and Approach

The research method of this thesis mainly consists of theory construction, a trend analysis, and case study, survey-questionnaire and making comparisons. The theory part is an attempt to describe principles which have

a close connection with supplier selection. In the section of supplier select criteria, a selection standard is built in the theory part and predicting the utilization of this standard in a company. In the case study part, some companies' supplier selection process is introduced and analyzed. Moreover, a comparison between the theoretical and the company's case of supplier selection criteria is made and the differentiation of the types of selecting process will be analyzed. The case analysis is based on a questionnaire which illustrated the procedures of picking a supplier in the case company. According to the information given by the questionnaire, supplier selection processes of companies are studied in order to determine their similarities and differences.

Limitations

This thesis had two main limitations. Firstly, the scarcity of wide empirical data can be regarded as one of the limitations. The research methodology of this thesis is based on a questionnaire and making comparison between companies. It results in an inaccessible view on the deepen level of supplier evaluation.

Secondly, doubts can also arise on the applicability of the supplier selection criteria which are proposed in the thesis. As to this issue, limitations stem from two aspects, which are the business field of the company focused on and the patterns of picking suppliers of some companies. Generally, companies in different fields have subtle differences in their supplier selection criteria. The company in this thesis is an industrial company, thus, it is not certain that the selection criteria used by this company are applicable to some other non-industrial companies. As for the patterns of picking suppliers, it must be

remembered that some companies do not pick suppliers by the pattern of searching-evaluating-selecting, but they rely on good personal relationship.

With the growing proportion of the purchase budget in the revenue of a company, purchasing turns into a key factor that directs the success of business. Supplier selection is the first and most significant step in purchasing, thus an effective and efficient supplier selection system is indispensable for company. The issues of how to set up a stable and long-term strategic partnership, establish a dynamic supplier evaluation and choosing system, and hold a low rate risk of supplier relationship are becoming much more concerned by modern companies while in the processes of starting a business. This thesis concentrates on analyzing and figuring out the deep interaction between supplier selection and modern business, introducing some major supplier management concepts and systems that have been used by modern companies to evaluate and select suppliers as well. The reason for choosing this subject was that supplier selection is a vital section in the supply chain, whereas it is also easy to be neglected sometimes. Many companies always focus on big suppliers or do not have an integral and effective supplier evaluation system, and these potential problems might turn into fatal risks in a company. On the other hand, these risks belong to controllable risks if they are deeply analyzed, therefore, the analysis of supplier evaluation and selection is worthwhile and meaningful.

This thesis consists of four parts which are the theoretical basis, the processes of evaluation and choosing a supplier, case analysis and conclusion. The theoretical basis explores the definitions related to supplier selection and how to utilize these theories in a real life case. The second part concentrates on analyzing the common processes and approaches which have been used in supplier evaluation. General steps of choosing a supplier

will be introduced and the measurement of supplier performance and different standards for choosing a supplier are key points in this part. The third section is a case study aiming at an analysis of how some companies choose suppliers and a comparison of differences from the aspect of theory and a real life case. Some general problems emerging in supplier selection are analyzed and solutions are proposed. The last part provides solution and advices for company's presently problems.

2. THE IMPORTANCE OF EVALUATING AND CHOOSING SUPPLIER

Traditionally, the relationship between customer and supplier is not so inseparable and both sides take business risks independently. However, this phenomenon has been changed in recent decades. Unlike in the past, a company only staring at the quality of products of a supplier, today's companies are not only concerned about the quality of a product but also the supplier's internal process of operation and management. This change results from the transformation of the customer and supplier relationship. In today's business, suppliers would like to share risks with cooperating companies due to the high competitiveness from the tight customer-supplier alliances. Since a company's flexibilities and capability of undertaking risks become the main competitiveness factors of a modern business, companies are much more rigorous at supplier selection. Choosing a supplier is exactly like calculating business risk and a good supplier means business risks have been minimized, whereas a bad supplier implies a lower profit and higher risks.

The success of a company is a combination of decisions to be made and risks to be taken. By increasing flexibility, the management of a company expands its freedom of choice. A company increases its flexibility by optimizing the flexibility of its environment. As a company's dependency on suppliers increases, so does the importance of ensuring that those suppliers will meet the company's need (Ostring Pirkko 2003, 3).

Increasing flexibility can enhance the company's competitiveness, and optimizing the flexibility of the company's environment is one of approaches to achieve high flexibility in the company. As for the flexibility of the company's environment, choosing the right and suitable supplier is one of the most significant parts. Usually, the right and suitable supplier are beneficial to the company. Some advantages can result from choosing a good supplier:

- Saving cost and needless procedure
- Saving production time and labor force
- Resource and information sharing
- Improving operation efficiency and effectiveness.

2.1 Buying From the Right Supplier

A good and right supplier can help propel the business to success, while a wrong or bad supplier can make your business miserable. An overall image of how to buy from a right supplier should be clearly defined beforehand, namely that you have to understand what you need and what you should look for in order to classify your requirements systematically and searching a suitable supplier who is in line with each of your requirement. Sometimes, it is quite easy to be tempted by use cheap services that do not match your needs. Therefore, it is important to realize the difference to your business between a strategic supplier, who provides high value goods or services and a non-strategic

supplier, who provides low value goods or services that are not significant and essential to your business. However, high value services and low value services are both needed sometimes. In this case, much more time should be spent on the former group might much more profitable and valuable.

The meaning of the “right” supplier differs from a “good” supplier. A good supplier is definitely the right supplier, whereas the “right” supplier may not qualify to be called a “good” supplier. The right suppliers are a group of candidates who can fulfill your requirements and demands on the basic level. They can offer services and goods that you need and they are compliant to your company’s strategy. Thereby, searching for the right supplier is a compulsory step before choosing a good supplier. After right the suppliers have been found, you have to spend a lot of time on analyzing those right suppliers, making comparisons, and finally selecting few of best suppliers.

A good supplier does not signify who are able to provide lowest price of service or goods, shortest delivering time, or best technical support although these advantages are highly competitive when choosing good supplier. Comparing to these superiorities, company whether or not has a strong adaptability when encounters problems is much more significant and crucial to the success of business. Modern business mode ties up buyer and seller closely so as to improve efficiency of supply chain and competitiveness in the market. On the other hand, this kind of collaboration pattern requires rigorous performance and capability of seller while in business. Besides, the risks of the entire business are not only decided by buyers but also related to sellers since behavior and performance of sellers are crucial index for assessing risks in the business.

2.2 Buying At a Right Price

A company's development of financial condition can be directly influenced by the total costs spent on procurement. Thence, cutting down procurement cost is one of most considerable aspects for the purpose of improving the company's financial condition. How to cut down the cost of procurement in a safe and efficient way? In order to solve this problem, it is necessary to find out how prices are set and some features of price.

Price is the monetary value at which ownership of an item is exchanged, an amount acceptable to both the seller and the buyer. There will usually be a range of values that will meet the price definition. It is this range of possible prices acceptable to both parties that makes the give and take of negotiation possible and necessary. (Pooler Victor H 2004, 222).

Prices are normally based on original costs, the value of goods. The higher costs of design, production and transportation of goods, the higher price of the product is. The better value of goods, the more potential customers will be and price will be increased in a certain period in the future. However, some other complicated factors may also affect the price in the market. For instance, a product is sold to different companies or groups at different prices while the production cost and value of the product is totally the same. In this case, the price of the product is influenced a lot by a potential partnership. The seller trusts an old customer much more than a new customer due to lower risks, and it results in the different prices and ways of payment. As another example, the price in different countries varied so much even the cost of haul is computed. This circumstance indicates that political factors can also affect prices. In the free barrier economic unions, prices of goods are usually lower because of lower taxes and varying fees comparing to high barrier economic region. These points demonstrate that prices are not cast in concrete and we have to

understand that most prices are flexible and can be influenced by many factors. An astute buyer will seek for a suitable price which is beneficial to either the buyer or seller, while a bad buyer may only concentrate on price, which may ruin the potential partnership with the supplier. Thereby, it is important for both the seller and buyer to know price is not the only factor in the overall trading relationship.

3. SUPPLIER MANAGEMENT

Supplier plays a significant role in business especially in some fields such as delivering and quality of goods, whether or not to cooperate with a good supplier have become key elements to achieve business success. More and more companies pay great attention to the selection, evaluation, and management of supplier so as to ensure that the whole supply chain activities are running and directed in an efficient and efficient way, achieving the win-win situation for both the buyer and supplier.

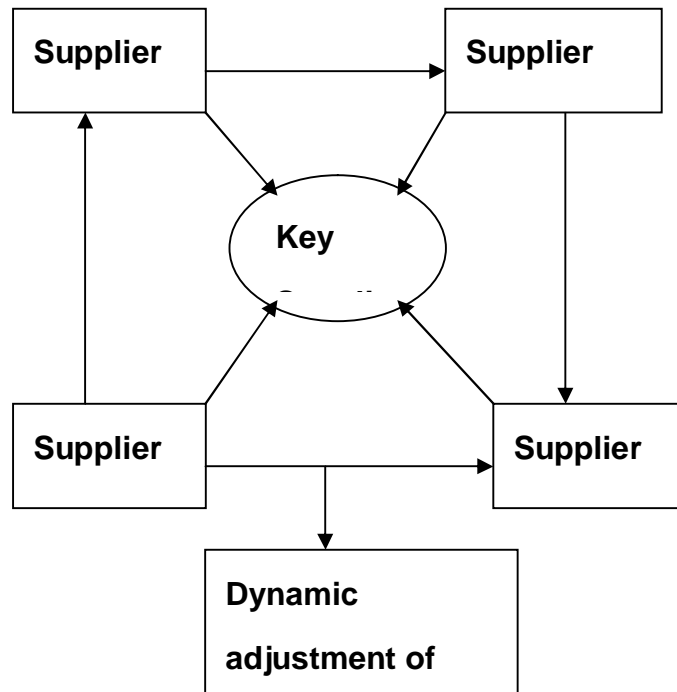


FIGURE1. Model of supplier management

Supplier management mainly is comprised by four aspects which are supplier entry, evaluation, collaboration and exit. During the process starting from supplier entry to supplier exit, it contains the dynamic adjustment of the policy and standards of supplier management. The dynamic management of suppliers happens throughout the whole process of supplier management and it is an approach to fulfill continuing development of a company. What is dynamic management of supplier? Specifically, it refers to company making plan for supplier management according to the company's own strategy of development, purchasing policy, the features of the needed material and condition of supplier, and collaborating with the supplier according to this plan in order to improve competitiveness of company. And why dynamic management of supplier is needed? Some reasons are showed bellowed:

- As a result of change of scale, strategy adjustment of company, the relationship between company and supplier is in need of dynamic revision
- Due to the environment change of original material's market, it affects the company to orientate the relationship with the supplier as well as direction of supplier management
- Dynamic supplier management is an essential part of enhancing competitiveness of procurement of raw material in the market.

As for the interaction between supplier and buyer, it normally comprises of supplier searching, supplier assessment, supplier communication and service, supplier inquiry and analyzing. Among these processes, supplier evaluation and communication are extremity significant due to the direct effect on costs of purchasing. The mission of supplier appraisal usually needs collaboration of many different departments inside of a company such as departments of financial, technology, quality management, and marketing department. In the process of supplier appraisal, the approaches of analyzing should be scientific and rational. The most common and basic principle "Q, D, P, S", which refers to qualities of goods, delivering time, prices and after sales service, has regularly been used in many big companies. Quality is the major and key factor in this principle. First of all, whether or not a supplier has a stable and efficient quality management should be verified. And equipment and technology which is required by special production of supplier should be checked afterwards. Secondly, costs and prices should be focused by using the win-win strategy for the purpose of achieving costs saving. As for the ability of delivering of the supplier, buyer needs to figure out if supplier has enough manufacturing capability, human resources, and potential ability of extending production. Last

but not the least, the buyer have to check the record of the before sales service and after-sales service of the supplier.

4. SUPPLIER RELATIONSHIP MANAGEMENT

As the key point of supplier management, supplier relationship management is more concentrated on continuously improving relationship with the supplier. Supplier Relationship Management (SRM) is aimed at streamlining the supply chain by improving the communication between an enterprise and its suppliers. In theory it streamlines the processes between an enterprise and its suppliers in the same way Customer Relationship Management (CRM) makes the processes between an enterprise and its customers more effective. (Procurementleaders, 2006)

Supplier relationship management is an approach that commits on implementing long-term and closed supplier relationship. It is an advanced management system integrating multi technology tools such as E-commerce, data collection, information management so as to expand business market through an integration of information and resources of both the enterprise and supplier.

By implementing supplier relationship management, companies can gain the following benefits:

- Under the precondition of ensuring good quality of products, profits can be increased by reducing supply chain and operation costs as well
- Suppliers may integrate to be part of the company' running processes via enlarging and strengthening relationship with key suppliers

- Enhancing the efficiency of business due to closed cooperation such as information and resources sharing
- By optimizing supplier relationship, an enterprise can make a detailed business strategy and management contrary to different supplier directly.

The importance and impact of different goods to an enterprise is varied. During the whole purchasing chain, a company needs to choose different supplier relationship modes according to different importance levels of goods. Thus, material should be classified at first and a suitable purchasing strategy should be made and a supplier relationship mode created for every kind of goods. The table below is a basic matrix mode of material classification according to its importance and impact to business:

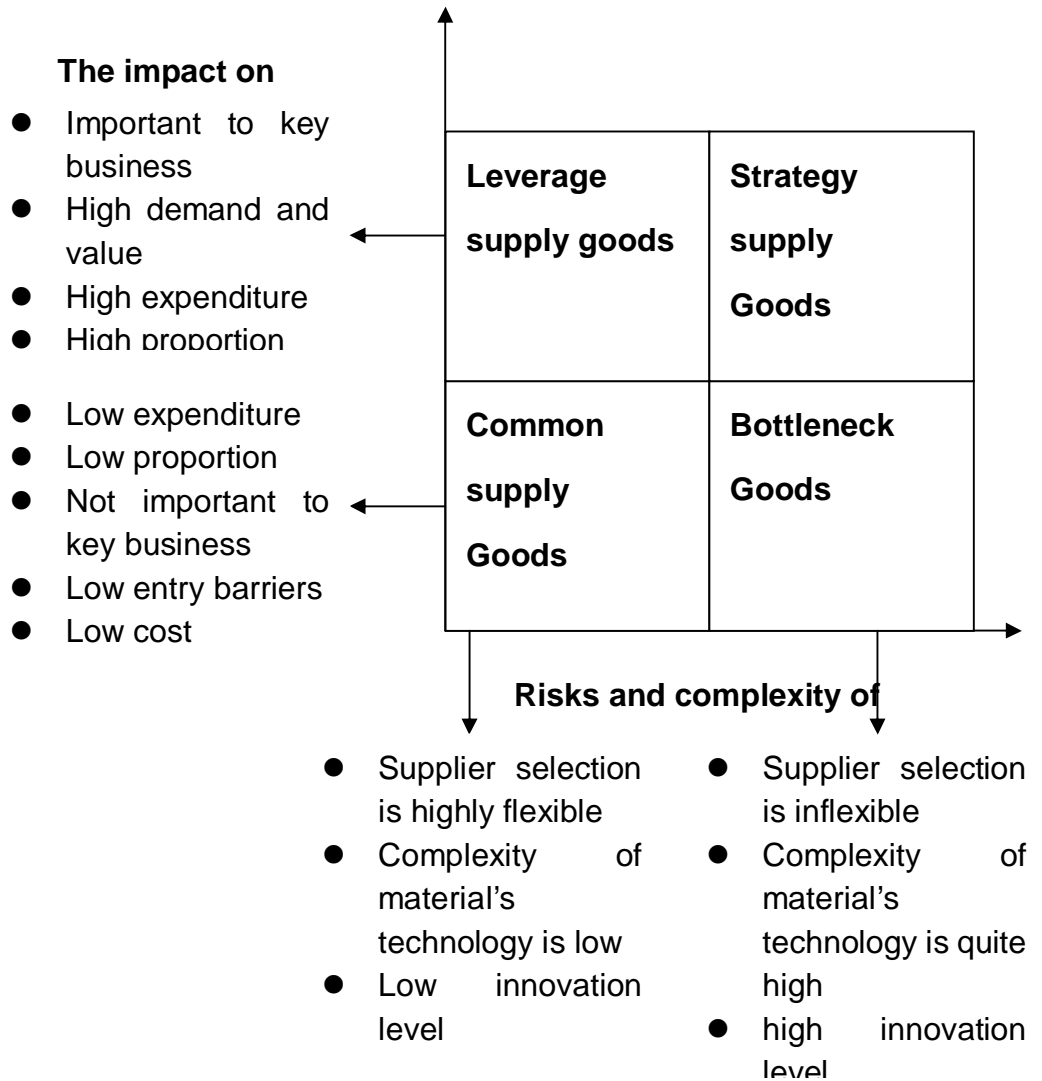


FIGURE 2: Matrix mode of material classification

The table above illustrates features of different levels of materials that result in a distinct impact on business. The leverage and strategy types of materials are the main areas that the buyer should focus on. For these types of goods, buyer has to establish a long-term and stable relationship with supplier, continuing improves information sharing and try to minimize costs and risks. As for the common supply and bottleneck goods, the total number of these groups of supplier should be kept at a low level, improving cooperation efficiency at the

same time. Purchaser must have an overall understanding of different levels of materials especial in the types of leverage and strategic material. Besides, it is essential to make a specific supplier development plan by way of analyzing supply risks of different types of material so that picking a good supplier is easier and safer.

5. FEATHERS OF A GOOD SUPPLIER

The ability to select reliable suppliers is a mark of successful purchasing. To paraphrase an old saying, “tell me who your suppliers are, and I’ll tell you what kind of a purchasing department you have.” It’s not always easy, however, to identify good suppliers. (Pooler Victor H, 2004, 87) It is always hard to define what a good supplier is because a good supplier only emerges when compared to many other suppliers. Therefore, there is no “best” supplier, only a more suitable and better supplier. However, it is still meaningful to recognize some features and behaviors of good supplier. Here are some features of a good supplier and differences comparing with “bad supplier”.

1. A good supplier is always asking “what can I do for you or what can I offer to you” while a bad supplier might ask “what should I do?” The difference results from a different business consciousness of different class of suppliers. A bad supplier never considers or concerned about what kind of services of goods you need, the only thing they are interested in is to show their ability to offer service or goods
2. A good supplier pays attention and is committed to the words they said, but a bad supplier may neglect the words they said

3. A good supplier often tries his best to offer accurate and reliable information to you while a bad supplier prefers to use words such as “maybe”, “possibly” or even “not sure”.
4. A good supplier likes to show their frankness in front of you while doing business and tell you what work they can do, and what work they might do not have the ability to do. However, a bad supplier may only keep an eye on the profit and tell you that they can handle the work, though they actually do not have ability to deal with it
5. A good supplier usually has extremely strict rules and management system whereas a bad supplier has lower a standard of management and is unceremonious on doing business
6. A good supplier will give some good advices, and tries to figure out the best solution with you when encountering some problems. But a bad supplier is reluctant and shirks responsibilities. Sometimes even worse, there may be some compensation dispute because of the supplier might say “it is your problem; it is nothing to do with me”.
7. When good suppliers receive some complaints or negative feedback, they will take out those failure products, re-check and improve their products and apologize to you. Conversely, a bad supplier tries to make excuse to show that it is not their problem, and they might also raise questions such as “ there must be some problems in the sample testing center”, “ are you use the products correctly”, “ your goods transportation system is bad”, or “ it is some other suppliers’ problem, our goods are perfect”
8. Good suppliers have a long-term business vision at any time. They are

focusing on long-term customer supplier relationships and long-term market value. Moreover, they are improving their performance continuously. As for bad suppliers, they are always short-sighted and struggle for profits.

To sum up, good suppliers nearly share the same features whereas bad suppliers vary from each other.

6. PRIOR RESEARCH OF POTENTIAL SUPPLIER

This section mainly concentrates on describing and researching the preparing work of picking a potential supplier. As we know a certain amount of suppliers have to be chosen before analyzing them. But which suppliers should we choose? There are still lots of work needed to be done before picking up certain suppliers to analyses.

At first, the channels and approaches used for searching suppliers should be defined. It does not make any sense to seek a supplier blindly and it would lead to increasing the business risks. A systematic and efficient way of searching supplier is significant to business success. After finding some potential suppliers, there follows the step of doing general research on these suppliers in order to figure out the degree of potential business. A general clue of the supplier's state should be known. For instance, the company's scale of supplier, what kind of equipment they are using, what are the main customers and partners of this supplier. These are something basic and essential facts concerning the supplier's background that need to be grasped at the beginning.

The reason for doing prior research before picking and analyzing supplier is that prior research is the insurance before supplier analyzing, and this can minimize

the risks of choosing a wrong supplier. The research and analysis process is much safer than one time analyzing approach. Besides, prior research can make the company concentrate on key supplier analyzing in the process of supplier analysis because of prior research already figures out who are the most potential key suppliers and wrong or bad suppliers are rejected. This is a huge benefit to the company and can save plenty of resources and time in the whole process of supplier selecting.

6.1 Where to Find Potential Supplier

With the development of network and environment of E-commerce, it is not a handicap to start business abroad any more. Presently, network is the main approach and channel in international E-commerce for most enterprises. Although network is major approach to find supplier in both local and international business, there are still a bit differences in these two types of business in the area of channels of searching suppliers. And here are some channels of network that buyer choosing supplier through in international business:

1. B2B commerce platform

The b2b commerce platform is one the earliest applied mode in international E-commerce and it has highly accepted by international buyer already. The features of b2b platform are transparency of information is high, supplier centralized, comparable and reliable. Thus, this b2b platform is one of the most accepted channels among international buyers.

2. Search Engine

Engine searching is the most convenient and popular approach to find supplier nowadays. The international buyers generally use major search engines such as Google, Yahoo, etc. By using engine searching, international buyer can easily find most suitable supplier around the world. Moreover, it is also possible to get sufficient supplier's information with the help of search engine.

As for the buyer who are focus on local business, unlike international buyer, although b2b commerce platform and search engine are the main approach to find supplier, there are still some more approaches to find suppliers. And here is shortlist through which you might find suppliers for your local business.

1. Magazine and Newspaper Advertise

Magazine and Newspaper Advertise ads are good sources of information to get local suppliers. Usually, business magazine and Newspaper will introduce some contact information along with company background of related business so that can stimulate local consumption. Thus, magazine and newspaper ads are one of the most direct ways to search supplier information.

2. Exhibitions and Trade Fairs

Probably this is the best place to get the supplier you needed. Exhibition can offer a lot of opportunities to communicate with a number of potential suppliers in the same place at the same time. You can get adequate and sufficient business that you are interested in by face to face consultation.

3. Trade Associations

The local association is another good source to find suitable supplier especially for those companies whose needs are specific to a particular trade or industry. And related trade associations' information can be found on the website of Trade association's form

4. From the surrounding environment

Ask the people you know, friends, family, colleagues or classmates if they have relational information on how to get suitable suppliers first. Besides, you can check the suppliers of your competitors or companies who are doing same business as you do.

6.2 Different Standards of Choosing Supplier

The criterion and key points of choosing supplier varied from both supplier diversity and many other factors. Normally, a company will pick up those suppliers who are in the same level of company scale and business field. However, many potential risks and uncertain factors might impel enterprises to change their criterion and direction of choosing supplier in a certain period. For instance, a big company will definitely has a distinct strategy and direction of choosing supplier in compare to the time when the business is in the initial stage. Every company has to change and improve their strategy of picking supplier in compliant with the diversification of business environment. For instance, there is no need to focus on those big suppliers when you start your business. Every company is developing itself from doing small business to expanding business area step by step. Therefore, following with interest on smaller and flexible

supplier is more significant for new companies. On the other hand, from the aspect of value of enterprise, the emphasis of criteria on choosing supplier can be varied as well. For example, a supply chain based supplier selection criteria refers that a company is concentrate on the whole supply chain activities in logistics while a value chain based supplier selection means that value added service and R&D are much more concerned. These two different supplier selection models will generate company to choose completely different suppliers.

6.21 In Different Stages of Company Development

Every company is growing from a small company and devoting on enlarge their business all the time. However, it is crucial for the company to recognize the disparity of choosing supplier in different stages of company development. Company size usually reflects the company's financial power and complexity of production. In general, the relationships between company size and supplier and seller are inseparable. The bigger of the company size is, and the greater complexity of its production will be.

In the primary stage of company development, the business is usually centralized and with very few partners. Due to these limited factors, to choose small supplier is the only choice for small companies. Besides, small companies are more sensitive to costs and orders are not so interested by big suppliers because of the low amount of orders. Thence, it is better to choose supplier whose status and the size of company is in the same horizontal line with buyer. Small companies and supplier can have better mutual understanding while big supplier will not consider your predicament. Additionally, if you know what you

are most needed, you will be able to achieve your aim by any means, for example, you need the lowest price. Only to meet all the requirements of suppliers so that can achieve your goals. And big suppliers obviously have more rigorous requirements in compare with small suppliers.

On the other hand, there is another solution which is outsourcing can be adopted by small companies sometimes. The funding of small and medium enterprises is normally small scale, and production capability is highly variable. Small company is unable to own a lot of money for the construction of logistics facilities in a short time, and they have to be confronted with risk of reengineering of internal logistics flow. Therefore, outsourcing of logistics capabilities can be used to break through the resources "bottleneck", so that the development of enterprises achieve higher growth rate.

As for big companies, their strategy used for choosing supplier is definitely different from small companies. Large enterprises generally do not utilize the outsourcing mode. Outsourcing always requires internal production and operations structure to conduct a wide range of adjustment and the adjustment costs are often very high, and it will affects both the company's supply network and marketing network stability. On the other hand, large companies are rich of logistics resources such as transportation capability and warehouse facilities. If the enterprises itself can manage and exploit their resources in an efficient and effective way, they can achieve their goals and satisfy customers by quite a low cost. In this case, the total cost could be lower than outsourcing while achieving the same level of service. In addition, you can also use the surplus resources to expand the logistics network resources, external business, so that can gradually accumulate experience in logistics services, technology and funds needed for the long-term development of professional logistics of enterprises.

To sum up, enterprise should recognize their own status and have a clearly blueprint on what kind of supplier is most suitable before searching for suppliers. Large companies have to focus on long term and key supplier relationship. These key suppliers should have highly innovation level and great impact on your business. Small companies need to exert it own advantages and ovoid disadvantages. Therefore, to choose small- scale and flexible supplier is more meaningful to small companies. The process of choosing and collaborate with supplier is a long term process which requires continuously improved. During the whole process, all accomplished activities have to be assessed perpetually to ensure that every step can achieve expected aims. To believe that even if there be a conflict, but solutions can be also found and it will not happen again.

6.22 In Different Business Modes

In this section, differentiation of supplier selection in different business modes will be introduced. And two types of business mode will be concentrate on which is supply chain based business and value chain based business. First of all, a general understand of the differences between supply chain and value chain is necessary.

As a basic tool to create and maintain competitive strength of a company, value chain has becoming one of the most important indexes to determine whether a company is competitiveness. Value chain is an analyzing tool that divides the overall activities into several independent parts from the economy's point of view. In many business areas, profits are usually in a certain part of a value chain. For example, advertising industry is concentrating in the field of media and the computer company embodies in the microprocessor. Thus, value chain becomes the core of key competitiveness

of a company and controlling the value chain means predominating profits in your business.

Unlike value chain, supply chain is around with major logistics activities. From material sourcing to the final product, supply chain is controlling and directing the whole logistics activities, information flow and capital flow. Finally, the product delivered by the sales network of suppliers to manufacturers, distributors, retailers until the end user and all the involved participants becomes an integrated functional network. The benefits by implementing supply chain managements is that delivering time can be shorten a lot and inventory stock can be reduced directly. And these benefits can enhance the action time of company to the market as well as improve relationships with both customers and suppliers.

Supply Chain Based Supplier Selection

With the increasing demand for personalized and diversified of modern company, enterprises are facing the pressures of shorten lead times, improve product quality, and reduce costs. And it is a tough work for any enterprise to confront this highly variable and dynamic market. Supply chain emphasis that strategic partnership between key departments and other outstanding enterprises and consign some work to these enterprises, so that the company itself can centralize other resources and benefits to other participants who are in this supply chain.

Supplier is the start point of an integral supply chain. Thus, the selection and appraisal of supplier plays a vital role in to the whole supply chain. The objectives of supplier management are creating a win-win strategic alliance

which can share information and resources between supplier and enterprise. Besides, the supplier management also involved in the process of manufacture with the aim of cutting down manufacture costs, reducing manufacturing cycle time. From the overall point of view, supply chain based supplier selection is a strategic supplier selection for key departments of a company.

After we have a general idea of what supply chain based supplier selection is, some features and hinges of supplier selection under this mode should be grasped. The main content of supply chain based supplier selection is to provide a systematic and overall supplier selection and evaluation method in order to guarantee the successful collaboration between key departments of company and most suitable suppliers. Here are the main features of supplier evaluation in the mode of supply chain based.

- High Efficiency

With the help of supply chain based supply selection system, the database of general information of suppliers can be created. When company needs a certain type of production from supplier, the best supplier can be discovered from supplier database.

- Time superiority

Supply chain based supplier selection is relying on information and resources sharing, comparison. Thus, the accuracy and timely can be ensured while information is used or delivered.

- Continuous optimization

Every time after transaction with suppliers, company is able to score and rank

for suppliers according to service, quality of product, delivering time and costs. In other words, this kind of supplier appraisal can be continuously optimized so that the company can make sure that every trade with supplier is reliable and beneficial.

As we know, by implementing supply chain management, the overall costs in logistics flow can be reduced a lot. Besides, under the environment of supply chain management, every enterprise may exert their ascendancy of resources to provide services. Therefore, industry-wide supply chain management is the trend in modern international economic development. With the aim of meets market demand, current enterprise have to focus on cultivating business core competencies, outsourcing strategies through using of external resources, reducing costs, improving efficiency, enhance the resilience of the environment, therefore, the core business depends on selecting the best vendor to become the concern of business. Supply chain based supplier selection will help enterprise to evaluate and select suppliers in an efficient way, so that the whole supply chain can achieve an optimal state.

Value Chain Based Supplier Selection

The value chain inside of a company refers that activities of company are compartmentalized by a few unaided value activities, and every single value activities is serve for creating value for customers through consuming resources and costs of company. From the buyer and seller's point of view, the value chain can also be understood as value interaction between supplier, buyer and vendor. The value chain of any company has an inseparable connection with external environment. The upper side of company value chain is supplier value chain and the underside is customer value chain. Besides,

the value chain of a company also will be affected by value chain of market as well as their competitors. The supplier value chain is a very important aspect for enterprise and win-win situation can be achieved by collaboration with suppliers. There is surgery showing that only a small part of value comes from internal of company, and this part of value result from cost control in each area. As for the rest value which is the main part comes from external of company. This external value is mainly through the reasonable decreasing production factors of cost, expanding a variety of supply channels to increase product sales. Their main tasks are to fulfill requirements of customer, continuously exploiting new products for market demand. All these efforts will greatly enhance the ability of the enterprise's value creation. Thus, rational use of the value chain outside of company in an efficient way is significant and worthy.

The main strong point of value chain based supplier selection is that companies are able to easily implementing costs control. And the reasons why this approach is useful for cost control are discussed below. The idea of value chain based strategy consider customer needs as the start point and analyzing what kind of benefits that customers wish to gain from products and services of enterprise. Afterwards, enterprise to consider works of making design, production, and finally determine core competence based on previous analysis. The value chain based cost control including both accounting and management methods. Moreover, strategically control and improvement are also involved. Therefore, cost control based on the value chain is actually a new business model of cost management.

When enterprise focus on the mode of value chain based supplier selection, unlike supply chain based supplier selection, some special features of supplier should be noticed and analyzed in this mode. And the most important feature is R&D capability of supplier. It is essential to involve both enterprise

and supplier in R&D activities. As we know, innovation is one of the most crucial factors which can guaranty the sustainable development of a company. However, innovation is often considered as "money-burning" activities. During the long process of definition, design, test and, small-scale production, and the final stage of commercial production and sales, the whole process requires large investment costs. Thus, cost control is also important for small and medium enterprises while in the innovation process. However, modern companies are still willing to put lot of effort on R&D because they realized that customers are always interested in new products which have better design and more functional.

As for the reason why supplier should also be involved in innovation activities of enterprise, there are basically two main factors:

1. By utilizing value chain network environments, it will push enterprise and suppliers to form an alliance of innovation. And this innovative alliance can improve the efficiency of the entire R&D process. In the product design stage, enterprises will communicate with supplier on the necessary components which used for making new products and this communication can contribute to a better assessment total cost of the final product. And through market sales forecasts, enterprise can discriminate whether there are needs for design improvement of product. If new products need to be improved, company can introduce suppliers to furnish alternative part program to make design more feasible. In the product development stage, suppliers can not only help enterprise to understand the market situation but also prospects of technology development at the moment. Additionally, supplier can provide multi test materials for production.

2. If the introduction cooperative supplier has a strong independent innovation

consciousness, R & D resources can be shared based on the alliance relationship. The respective strengths of innovation and ability of enterprise and supplier will generate greater benefits. Meanwhile, the supplier has not only played a simple supporting role in R & D, but also involved business activities with the main body of innovation.

With the affect of supplier on purchasing is growing, it is significant to ensure that supplier have a positive effect on innovation of enterprise as well as selecting the appropriate suppliers, in particular, selecting a certain capability of independent innovation suppliers is especially important.

6.3 Supplier Profile

Traditionally, building supplier profile and to find suppliers who are match with these profiles are most common methods for selecting supplier. A structured scheme is compulsory so as to trace the supplier selection process and reassure the company that all needs of company have been correctly understood, identified and taken into consideration. And an ideal structured scheme should mainly consist in three parts which are business criterion, accessing criterions, and supplier portfolio.

Firstly, an integrated business criterion should be built and indentified. This business criterion will help suppliers have a better understanding of business policies of your company so that accurate services can be offered by suppliers. In this business criterion, a few important aspects should be included:

- Company global policy

By understanding global policy of company, it is easier for suppliers to carry out corresponded policies on business schedule. The exhaustive understanding of each other especially from the overall business aspect

enables buyer and supplier have a better conformity. To know and familiarize each other company's strategy and policy is a necessary part of achieving all the business goals.

- Purchasing strategy

The main function of supplier is to provide material or components which are needed by companies. Thereby, issues such as purchasing category, time schedule, quality requirements and quantities should be clearly defined and presented to suppliers.

Secondly, defining a supplier selection criterion according to your company's situation and business area, and measuring the criterion. Every company has its own types of selection criterion due to the diversity of different companies and business fields. Important issues of selection criterion need to be noticed and highlighted.

Thirdly, evaluating the performance of supplier against selection criterion in order to figure out whether this supplier will be approved. This is the most important step in the whole process of supplier selection. Thus, a systematic and efficiency supplier accessing is the key for choosing good suppliers and should be extremely cared and followed.

Lastly, after finding the suppliers and measure them against the criterion, a list of possible supplier can be found. And the last step is building a portfolio that including all related information and evaluation of these possible suppliers. By comparing the portfolio of different supplier, "preferred suppliers" or "approved suppliers" will be defined and final decision been made as well.

6.4 Supplier Status

Many organizations make a preferred or potential supplier list of recruitment companies to service their requirements based on status of suppliers. And there are many reasons for this. Usually to achieve preferred supplier status, recruitment companies have to meet a range of rigorous requirements on quality, price and service capability etc. The key Supplier status offers you detailed background of supplier and presenting essential information to users. In this section, some common but important issues of supplier status will be introduced and discussed.

1. Company geography

It seems that company geography of supplier is not considered too much by many companies. However, company geography is one of the most significant supplier statuses. For instance, a good location of warehouse can always cut down transportation fee and delivering time. And the amount and location of offices of supplier can reflect the capability of doing business to some extent especially in the environment of international business mode. Big companies have to consider great factors such transportation condition, capability of potential market, and rent for office when they are decided to establish office or sub-company abroad.

2. Employees

As one of the index to indicate the status of supplier, the information of employees is the most simple and useful way to find out what kind supplier it is. Normally, the bigger supplier it is, the more employees it has. Large company requires a relevant amount of employees so that can compliant with its

business mode. A good company usually has strict requirement of professional background from the prospective of both academic and experience. The quality of staff and attitude on their work can represent the level of their company. Besides, things like salary and welfare can also denote the economic conditions of supplier's company. In general, there are certain of key areas when identify status of supplier from the employees' point of view and key areas are showed as below:

- Amount of all the employees
- Professional background of employees
- Salary and welfare
- Working attitude of employees

3. Reputation and Credibility

With the rapidly increasing number of companies and types of procurement of goods, a credit management and appraisal system of supplier is needed in order to standardize supplier management, in line with the purpose of optimizing supplier structure and maintain the overall interests of the company. However, the increasingly market competitive fight for customer orders force suppliers to provided extremely favorable conditions to buyer and it causes the profits that supplier can get becomes thinner and thinner. On the other hand, arrears sometimes happened in transaction. All of these phenomenon stem from the lack of proper credit risk management of business management. A good reputation and credibility of supplier usually means better services and rigorous attitude on doing business. Thence, the reputation and credibility of supplier can be a reasonable factor while picking suppliers. And there are some considering things in reputation and credibility of suppliers:

- Public seminars
- Main competitors and customers
- Publications of company
- Customer feedback

Sometimes, if there are some kinds of barriers to figure out the information of reputation of supplier, some other approach can be used such as seeking help from local or international consultants. Agency like business consultants can provide you clearly and reliable information of what you need. Comparing to analyze market reputation of supplier yourself, seeking help from consultant agency is more efficient and cost effective.

4. Relationships currently

The corporate relationship of a supplier with other companies is another crucial aspect that could response the status of supplier. And the relationships are mainly consisted of two aspects which are customer's relationship and partner relationship. For the purpose of identifying the existing relationship of supplier and approach can be done by doing questionnaire and raising a few questions like:

Partners:

- What is the range and quality of their formal partnerships?
- Are they satisfied with the partnerships presently?
- What are the adequate and inadequate parts of their partnership?
- What are the period and terms for their co-operation?

Clients:

- Who are the main clients of this supplier?

- What is the feedback of both new and old clients have?
- Why they choose this supplier?

5. strategy direction

For many companies, the question of is it appropriate or necessary to develop a long-term relationship with this supplier is the most considerable issue. And the strategy direction of supplier is first thing you have to know before to determine whether it is worthy to build long –term relationship with this supplier. Some strategy direction such as purchasing, delivering, and payment should be known clearly. Understanding each other’s background and habits is the basis to achieve win-win strategy. For instance, if your company has highly requirements on the innovation of product, then the question “does this supplier have the vision to innovate in the way you would like?” should emerge in your mind.

7. COMMON SUPPLIER SELECTION CRITERIA

The process of selecting a supplier is a quantitative and qualitative work. Selecting the supplier that provides the most suitable design and manufacturing expertise can make your product more cost effective and competitive. Every company has its own business strategy and key business areas, and this result in the selection criterion of supplier differs from every company. Supplier selection criterion for a particular service or product should defined by a “cross-functional” group of representatives who are from different departments of your organization. For instance, in a manufacturing company, members of the team typically would include representatives from purchasing,

human resource, quality, design and production. Team members should include personnel with technical and applications knowledge of the product or service to be purchased, as well as members of the department that uses the purchased product or service. The following section is generally introducing the common supplier selection criterion in some key areas that cared by many companies.

7.1 Quality System

The quality level of products and services of supplier is interested and valued by every company while in process of selecting supplier. The quality of products have directly impact on the position of your company in the market, namely that the amount of market share. Thus, to identify the level of quality system of supplier is an essential and indispensable work when selecting suppliers. And the accessing of quality system should be done in a systematic way and from several perspectives.

1. Management part

Quality management is a series of management activities in order to achieve quality of product and service to a certain level. The development of quality management mainly has gone through three stages which are quality test, statistical quality control, and overall quality management. In the primary stages, with the expansion of production scale and product complexity increased, quality inspection is separate from the manufacturing to make sure the quality of product in every process. In the statistical quality control, quality is inspected and ensure by huge amount of data automatically. As for the overall quality management, it is an integrated system which involving activities such as quality analyzing and quality improving. And this

management system provides services and products based on fulfill customers' requirements from the most economical level. To summarize, a few aspects need to be care from the management perspective:

- Responsibilities of management
- Internal quality verification
- Financial affairs in quality system
- Strategy management of quality

2. Production Processes and Final Products

Activities of quality direct and control usually including the development of quality policy and quality objectives and quality planning, quality control, quality assurance, and quality improvement. Quality assurance and quality control are the most important areas.

- **Quality assurance**

Quality assurance activities have various links to internal departments of company. Starting from product design to customer feedbacks of after sales service quality, a management approach is formed with the aims of ensuring product quality and it is called quality assurance system. The purpose of establishing such a system is to ensure the quality of the user requirements and interests of consumers and to guarantee the performance reliability, durability, maintainability and appearance of the product itself.

- **Quality control**

In order to ensure quality in the production process fulfill the expected quality level of final products, a series of technical operations, inspection and related

activities is necessary and they are the basis of quality assurance of final product. Quality control actually is a comparison between final tested quality results and the standard quality level and it is a process of adjust management after figuring out the quality differences.

This regulation management process consists of the following series of steps: Select the control object; select units of measurement; determining evaluation criteria; measurement; analysis of actual and standard quality deviations, and figure out reasons; and improving quality of products according to the measurement. And here is an accessing list for quality in production process and final products:

1. Quality control plan
2. Production process plan
3. Purchasing control
4. Product test and inspection
5. Failure products control
6. Transportation, packaging and warehousing
7. Quality record control
8. After-sale service
9. Customer feedback

Continuous improvement is the spirit of a quality management system. And quality management system is aiming at increasing the chances of quality improvement and meets the requirements of cycle activities. With the help of quality management system, company can improve the effectiveness and efficiency of products while in the production and delivering processes.

3. Quality Requirements for Supplier

Before to know what kind of quality requirements supplier should have, the quality management standards which been globally used will be introduced at first.

- *ISO 9000*

It is a family of standards for quality management systems. ISO 9000 is maintained by ISO, the International Organization for Standardization and is administered by accreditation and certification bodies. The rules are updated, as the requirements motivate changes over time. (wikipedia, ISO 9000)

Among the family of ISO 9000 standards, ISO 9001:2008 is the most common used quality management standards globally. It provides assurance and specifications about the quality requirements and to enhance customer satisfaction in supplier-customer relationships. In some particular industries, they have some different international quality management standards which are been applied only in the same industry area. For instance, in automotive industry, apart from ISO 9000, some international quality management standards such as QS9000 and VDA6.1 are also used widely. The reason for creating these types of quality management standards stems from the technical and production complexity in some special industries.

Quality standards and quality requirements of course are key approaches to keep a high quality level of supplier. However, in nowadays business environment, collaboration and win-win strategy is the primary business style and it is insufficient and inadequate only to set quality requirements for supplier. It is necessary for supplier involved in the quality managing activities along with buyer. And here are some recommend quality management

activities that supplier should participate:

- Necessary self-development capabilities of R&D
- Self-regulation of production
- Understand the market and customer's demand
- Quality and cost effective control of product

To summarize, as a most significant aspect that cared by both buyer and supplier, a series of key point are there. The buyer have to always remember make sure the quality of products and service meet the specification and all the production process are controlled and will to do constantly. To know the quality methods and processed control that are used by supplier and to check whether quality of products comply with their standards. Lastly, here are some basic method and mode that might useful in quality management:

Tools for Quality Management Are as Follow:

Check sheet, Control Charts, Flow Charts, Fishbone Chart, Cause and effect analyze,

7.2 Competitive Pricing

How to control and minimize the prices of supplier's product? This is a common and traditional theme in the area of procurement. Many people might think that there is nothing too much customers can do in price control, and negotiation is the only way to decrease the prices. The most direct way to keep the prices down is to control the supplier's product prices. However, talking about price is not merely giving a very subjective target price and asks suppliers to cut down price simply. There are many techniques and methods in the price negotiations.

Additionally, there are many other ways to control the prices beyond negotiation. Hereby, a few tips and strategy bellow should be pay attention while in purchasing.

1. Find out how many vendors have done business with this supplier, the current forecast of ongoing projects, new business opportunities and future needs, etc.
2. Who are the major competitors of this supplier? What are the current marketing strategy and pricing strategies of its competitors?
3. How the product priced, and is this price stable and reasonable?
4. What is the total cost of using this product after considering potential factors such quality, delivering time and transportation life cycle time of product?
5. Ask the supplier for analyzing the major cost elements.
6. Make a bottom line and keep the target price in your mind.
7. Developing and evaluating the components of major costs in a right way.
8. Try to make clear to your partner that you are working on a win-win solution.
9. Inspect the specification with engineering and quality personnel, to identify possible unnecessary requirements.
10. Visiting the supplier's workshop and to learn how products are processed and assembled.

11. Search information from other suppliers who can provide the same materials and components that used in the manufacturing process.

7.3 Technical and Information Support Capabilities

The technical level and information system of supplier always impact the quality of products and sometimes can determine the market position of the product directly. The technical and information capabilities of supplier can be viewed from two aspects which are infrastructure and development environment. The infrastructure of supplier nowadays are been required much more rigorous. For instance, some buyer will consider that whether the environment of product test of supplier compatible to buyer's. Besides, some issues like whether supplier have some necessary technical infrastructure to develop the application are interested by supplier, and more and more buyers have the consciousness of level up and maintain the products they bought. As for the development environment, some circumstances such as how productive the products are, whether the documentation of products are clear enough to hand over to other users.

7.4 safety and Environment

The environmental issue has become critical and cannot be ignored in commercial operation. With the strengthening of relevant international regulations on environment and the public's growing environmental responsibility, many environmental problems need to be resolved urgently. And this is also why some environment requirements even become part of the company's strategic plan. At the same time, the supply chain system in many companies has been integrated with the aim of achieving lower costs and provides better customer service as well. And environment management should be implemented in actual operation, such as product design, supplier selection and evaluation, and purchase of logistics.

In order to integrate with supplier from the aspect of environmental friendly, buyer must maintain close relations with suppliers. Usually, the supplier will show two kinds of attitude on environment requirements: voluntary and forced. If the purchaser find out the supplier is not willing to care about environment issues, then alternate plan and suppliers should be prepared. Furthermore, small suppliers generally are forced to make effort on environment input because of its limited resources. Therefore, the objective environmental standards in supplier selection system should account for a large proportion. Only by this way can impact supplier in an efficient way on environment issues. Of course, for large number of suppliers of the business enterprise, environmental friendly would be a very difficult task. The applicable environment standards in supplier selection must reflect the purchaser in an environmental pro-active strategic direction. Specifically, to meet the international or local environment regulations at first and then to focus on the process improvement, followed by positive selection criteria.

7.5 Customer References

The management of customer references refers to created as a tool to increase customer participation in business activities, such as marketing and sales. Although Customer Reference Management is a spin-off of Customer Relationship Management, it focuses more on existing customers to gain their opinions by allowing them to participate in customer reference activities such as mock phone calls with potential clients, case studies, and personal testimonies.

(toolbox, customer reference management)

By implementing customer references management, customers and supplier are both beneficial from it. Customers are able to ask questions that they are interested such as what are the technology and facilities used by supplier. Besides, customer reference is also a channel for helping customers to understand supplier. Customers raises the questions by make phone or online feedback and supplier to solve these problems. One of the reasons that why customer reference becomes one of the supplier selection criteria is customer reference can be an index to show the transparence of supplier's business. A good customer reference means supplier confident with their products, services, and technology and willing to introduce these issues to their clients. Furthermore, customer reference is actually functional as a tool of buffer. Sometimes, problems are encountered in customer-supplier relationship, and customer reference will provide a change for supplier and customer to solve problems together.

7.6 Financial Stability

Clients are always considering a lot while in evaluating and choosing supplier and they prefer to pick up suppliers with strong financial condition. However, it is quite complicated to figure out the real financial situation of the supplier in many cases due to the various types of assets that own by supplier. Normally, financial evaluation can be done from two perspectives which are current assets and non-current assets. The tables bellowed show the important areas which should be evaluated:

TABLE 1. Classification of current assets.

(Ostring Pirkko, 2003, 51)

Current Assets	Contents
● Cash and cash equivalents	● Cash on hand, short-term deposits in a bank and other highly liquid investments
● Short term investment	● Marketable securities
● Receivable	● Accounts receivable, notes receivable, and receivables from affiliated companies
● Inventories	● Finished goods, work in process, and raw materials
● Prepaid expenses	● Prepaid rents, prepaid insurances, etc.

TABLE 2 . Classification of noncurrent assets.

(Ostring, Pirkko 2003, 51)

Noncurrent Assets	Contents
● Long-term investment	● Investment for funds
● Property, plant, and equipment	● Land, building, plant, and equipment
● Intangible assets	● Goodwill, patents, licenses, trademarks
● Other assets	● Deferred taxes, bond issues costs, long-term prepaid expenses

8. CASE ANALYSIS

8.1 Company Background

The company Finnish Radiator Manufacturing Ltd was established in 1926 and headquartered in Suolahti in Central Finland. It manufactures radiators for many worldwide automobile industries with a very long history. Initially, this

company mainly produced radiators for automotive industry. With time passing by, this company has developed rapidly in many aspects such as technology and infrastructure. And this result in the company expands its business into many other markets. Nowadays, Finnradiator is not only producing radiators but also providing product design services for their customers. For instance, some products like air coolers (CASs), components of fabricated sheet-metal used by heavy-duty trucks and off -road vehicles are the major products and these products and services are primarily used in construction and agricultural applications. Products are mainly sold in the Scandinavian, Central European and Japanese markets.

Finnradiator is aiming at manufacturing tailor-made radiators, coolers and heating systems of good quality for their customers. According to Finnradiator's news that they are investing heavily in the future and preparing themselves for the challenges presented by the new EU emission directives. In consequence, they are investing in a new CuproBraze production line, which enables them to serve their customers' needs even more efficiently. The CuproBraze production line was introduced in March 30, 2006(Finnradiator, 2010, website,).

Finnradiator has put a lot of effort on the optimization of supply chain management and business network in order to improve the level of quality and logistics performance. By making these efforts and adding value to their operations, their products and services are able to match the customer's expectations at the maximum level.

8.2 Company's Strategy and Logistics Activities

New Technology

In recent years, Finnradiator has invested a lot on new technology and equipment in order to prepare for the coming challenges presented by new EU emission directives. In 2004, Finnradiator started to adopt the CuproBraze copper/brass brazing technology.

CuproBraze is a breakthrough technology for producing corrosion resistant and durable heat exchangers. CuproBraze heat exchangers are today used in heavy duty off-road vehicles, tractors, locomotives and stationary generators, as well as in heavy-duty highway trucks and some lighter vehicles, including hybrid car (CuproBraze, 2010, website,)

The high durability of CuproBraze heat exchangers attracts Finnradiator and pushes the company to adopt this technology. Besides, comparing to other alternatives, CuproBraze heat exchangers especially have superiorities of smaller size and greater heat rejection, and this factor also is part of the reason why Finnradiator choose CuproBraze. In the year of 2006, a new CuproBraze production line was introduced to Finnradiator with the aim of serve their customers with high quality level's product and more efficiently as well.

According to Hannu Vetikko, managing director of the Finnish Radiator Mfg Co Ltd, he point out that compared to the copper-brass soft soldering process, which they still have parallel to CuproBraze line, the CuproBraze has much higher level from a technical point of view. Both product and production performance have been improved a lot than two years ago when they started to introduce CuproBraze project. During the autumn of 2007, 95 % of radiator

cores were manufactured in this new line.

(Automotive Industry, 2007)

Collaboration and Supplier Strategy

Finnradiator has explicit and systematic strategies towards supplier picking and selection. In general, Finnradirator classifies their suppliers into two main groups, which are material suppliers and service suppliers. Besides, some production technology and machinery company also have close business relationships with Finnradiator. In this section, we will have an insight view of how Finnradiator cooperate with different types of supplier. The particular suppliers of Finnradiator are showed below:

Material suppliers:

Umicore AG & Co. KG, Business Line BrazeTec, Wieland-Werke Ltd, Luvata Ltd, and Boliden Ltd.

Service Suppliers:

FARO Technologies Inc, Dassault Systemes Inc. /CATIA Det Norske Veritas (Finnradiator website, 2010)

Due to quite a few suppliers that Finnradiator has, I am very interested in the supplier selection criterion of Finnradiator. Thus, I conducted a simple questionnaire on supplier selection and Juho Partanen who is the export director of Finnradiator gave me some valuable information. Like many other companies, Finnradiator has its own supplier selection criteria and methods for classifying different suppliers. Finnradiator evaluating their supplier mainly according to supplier self-audit which consist of the overall information of

supplier, such as technological, financial, quality, infrastructure, reference customers, location and price level. All of these are important attributes. After supplier self-audit is a t hand, the process of evaluating suppliers has started. In Finn radiator, supplier accessing is been done from four main aspects which are:

- Delivery accuracy,
- Quality
- Price level
- Service flexibility

At the same time, Finn radiator classifies their suppliers according to the volume of annual turnover, countries, and product groups. According to the annual turnover of the main suppliers of Finn radiator, we can see that Finn radiator prefers a supplier who has large annual turnover. Besides, the company outsourcing many materials such as metals, component, as well as services and their supplier are distinguished by the types of material which purchased from different supplier. Sometimes, Finn radiator outsources some materials from some low-cost countries but problems are always encountered, and the analysis of these problems will be discussed later.

Finn radiator has sorted the suppliers into two groups: material suppliers and service suppliers. Therefore, the selection criteria for each type of supplier are definitely different. When a company is choosing material supplier, the quality, price, delivering time and technology are the most significant issues. As for service supplier, issues like service quality, schedule compliance and service content are more concentrated on.

Luvata who is the material supplier of Finn radiator can be taken as an

example. Luvata has been Finn radiator's raw material supplier for many years. Before the CuproBraze project started, Finn radiator tries to evaluate their supplier and make decisions. And finally, Luvata have become their supplier and given them major support in knowledge of brazing process and CuproBraze material properties. The cooperation went to deeper and deeper through the discussion and collaboration on CuproBraze after Finn radiator build the CuproBraze production line. In this case, the reason for Finn radiator to choose Luvata to be their material supplier is due to the good technology and product service they have. Besides, Finn radiator's operations are based on ISO-9001: 2000 and ISO 14001: 2004 standards and Luvata is in line with Finn radiator on environmental friendliness. Their quality policy is based on product characteristics and first-class delivery reliability. Additionally, the targets of Finn radiator are to build reputation as a high-quality, flexible and speedy service oriented company, and the high quality level is another factor which attracts Finn radiator. (Automotive Industry, 2007)

8.3 Company Challenge

"It is quite hard to be able to achieve a high enough quality level when sourcing from low-cost countries" says by Juho Partanen, the export director of Finn radiator. Due to the large amount of material, such as metal, that Finn radiator have to source from outside of Finland, Finn radiator has put their eyes on low- cost countries, so that can maximize the company's profits through cutting down material costs. However, the unstable quality level of material from a low- cost country will cause failure in the final products and can make original profits become thinner and thinner. Sometimes, the product's low quality level can lead to a complete business failure because of the impression of low quality products will be formed among customers and the company will lose most of their customers finally. Therefore, this problem

should be valued while in the process of outsourcing from low cost countries.

From the author's point of view, the problem of "how to guarantee the quality level while sourcing from low cost countries" can be recognized and analyzed from a few aspects:

How to choose suitable supplier in low cost country?

The condition and business environment of different countries leads to original supplier selection standards dose not suitable for low costs countries.

Normally, there are quite many types of supplier with varied quality level in low cost countries. Thus, the handicap for choosing a good supplier with suitable price and good product's quality level has increased comparing to choosing supplier in high cost countries. Besides, risks always exist if searching supplier from low cost countries. The difference of culture and custom, market environment and degree of market competition is the instability while sourcing from low cost countries.

How to identify the quality level of products before transaction?

In many real business cases, many buyers always find out that the quality of products does not fulfill their requirements after revived orders but not beforehand. And this phenomenon usually causes huge unnecessary costs and loss. Some buyers realized that it is a bad supplier only after they received poor quality products and then evaluating their suppliers, and there are also some buyers even do not have the supplier evaluation process. Both of these purchasing styles are failed and should be avoid. An efficient and scientific appraisal of supplier is compulsory especially sourcing from low cost countries and the evaluation criterion has to correspond with the culture and

market situation of countries which you are sourcing from..

How to minimize risks while sourcing from low cost countries?

As we know that more and more international large enterprises outsource manufacturing capabilities from many Asian countries and Eastern European countries, or import raw material and Semi-manufactured goods from these countries and re-processing these products and sale back to the market. This prevalent business mode has both great benefits and risks to companies. Therefore, to figure out the solution how to reduce the risks in this business model is worthy and required.

However, the implementation of the low cost countries sourcing strategy is not an easy task, which requires excellent knowledge of global supply chain. And in fact, low cost countries sourcing have many potential risks including:

- **Low quality**

Many suppliers of low cost countries cannot meet the international quality standardize.

- **Long leading time**

Almost in all the low-cost countries, the lack of experience of supplier and infrastructure that should be further improved usually lead to a quite long leading time.

- **Easy breakable of supply chain**

Suppliers of low-cost country are not as good as supplier of developed countries. Poor logistics infrastructure will always cause problems, and inaccurate or wrong communication and wasting of time will be happened

normally.

Currently, many business models are undergoing an easy changeable situation. And large international enterprises are changing their global supply chain strategies correspondingly, for example, goods and services procurement from the low-cost countries. And this business phenomenon is driven by many factors:

- Pricing

The pricing rules of many years ago no longer can be applied. During a long period, the rising cost is simply transferred through the supply chain from top to bottom, and users to undertake costs finally. However, end-users now are expecting to decrease the price all the time even if materials costs and other infrastructure costs are increased. Thus, companies must cut down material and production costs. Otherwise, the profits of company can not be assured.

- Globalization

With time passing by, business competition of an enterprise is increasingly become globalized. The developments of technological progress, less and less trade barriers, as well as the elimination of political barriers have contributed to enterprise into a more dynamic global market. Those companies who are not searching for new markets will lose both of their market share and profits finally.

- Supply chain competition

Whether have a strong supply chain capabilities will have a direct impact on the enterprise's survival and future development. There is research shows that sourcing from low-cost countries can save at least one third or even more of the original cost. During the last decade, more and more low cost have continuously improved their technology so that can provide products with good features and quality for international enterprises. However, the strategy of sourcing from low-cost countries is has actually brought many tough challenges to the enterprise. Nevertheless, more and more enterprises are still implementing the policy of sourcing from low-cost countries, and the reason for it is quite obvious - to keep the competitiveness in the global market.

9. PROVIDED SOLUTIONS

International purchasing office

Many companies now are relying on consultants and third-party service providers to help design and implement their low-cost countries sourcing strategy, and establishing an "international procurement office (IPO)" is a typical way to optimize a low-cost countries sourcing strategy. The strategy of low cost countries sourcing includes a number of steps, such as understanding the technology and production capacity of suppliers, and understanding the local market conditions. Many enterprises, especially small and medium-size enterprises have to improve their sourcing strategy from this aspect.

Some large companies think that establishing a local representative office and business relationship is essential, and it is mainly done through the following ways:

- Establishing an IPO in the local market directly

For the first approach, it always costs a lot of money to establish and maintain an IPO. For example, in China, for setting up a small IPO with fewer than 10 employees and the estimated cost will reach 1-2 million dollars in big cities. In addition, the recruitment of staff and establishment of related facilities and equipment usually take half a year or even a longer time. Because of the strategy of low cost countries sourcing is more and more interesting to many enterprises and difficulty in recruiting professional employees is also growing. And sometimes it even takes one or two years to see the efforts and some positives affects in the company after establishing an IPO. Nowadays, China has the largest number of IPO is due to its market potential capabilities and low material costs.

- Using a local agent and broker

The second approach is using local agents and brokers. They actually act in the roles of both the buyer and distributor, and charging for each transaction service fee at a certain percentage of the acquisitions. Research shows that in low-cost countries, some intermediaries and agents can bring tremendous value to customers. But before implementing this approach, a company must to carefully doing some analyze such as: analyzing agents, contracts and laws. To some extent, implanting the strategy of using intermediaries and agents may be contrary to the basic value proposition of low cost countries sourcing – cutting down costs. Furthermore, after using this approach, it often impedes the visibility of the supply market to buyer, and buyers will lose the power of affecting some key factors in purchasing such as pricing and quality. In many cases, local agents in the provision of goods and product quality cannot

guarantee 100% quality standards and punctual delivery time. And sometimes it is almost impossible to provide supplier management services.

- Outsourcing the function of an IPO from a third Party

The third approach is outsourcing an IPO from qualified and experienced service provider. This approach can save operation costs and create relationships with suppliers rapidly, and obtain the benefits of low cost countries sourcing as well. Usually, the third-party understands the abilities of supplier very clearly. The third party is able to minimize the total logistics cost through the integration of logistics transportation and supplier management. IPO services consist of consulting firms, outsourcing services companies, third party logistics providers, as well as third-party that have a rich knowledge and experience of low-cost countries sourcing. Many companies already have established their offices in low-cost countries and regions, and understand the local suppliers, language, culture and business practices quite well. Using the third approach can accelerate the processes of implementing the strategy of low cost countries sourcing, and reduce total costs dramatically. Most third-party service providers are not serving for one company, and the total costs are shared by many buyers from this point of view. Using the third party service allows companies "to test" the situation of low-cost countries sourcing, and then to establish its own IPO based on this step. Relying on third parties, the structure of supply chain of the company can be optimized and total costs reduced as well when market condition of low cost countries is in a changing situation. On the other hand, any low cost countries sourcing strategy should include "exit strategy", because low-cost countries sourcing are full of risks.

In fact, there are both advantages and disadvantages in using each method. Large companies usually take the first approach and they already have

established a supply base in many low-cost countries. These three methods are in need of an active support from senior managers. If the company cannot get the full and active senior management support, then it is better not attempt to implement a low-cost countries sourcing strategy.

Quality Risks Management

In the process of low cost countries source, assuring the quality level is the major task for Finnradiator. Due to the high risks of sourcing from low cost countries, it is worthy and necessary to implement quality risks management. Quality risk management is actually a process of systematization. It can recognize measure, control and evaluate the risks in the whole processes of a product's life-cycle time. And the product life cycle includes the whole processes from the initial research of product, production and marketing to the final product entering the market. Risk is a possibility that has the likelihood to generate diverse loss profits and harmful consequences. The quality of the product affects the enterprise's life and there are many factors that can affect the quality of products.

In Finnradiator, the approach of supplier self-audit is used. This approach may save time and costs in the process of supplier selection and evaluation while purchasing in high-cost countries. However, in most low cost countries, a lot of potential risks exist, such as low quality and long lead time. Particularly, the truth and the accurate level of information that acquired through supplier self-audit are in doubt while sourcing from low-cost countries. Thus, it is better to establish a systematical and efficient supplier selection criteria and risks management approach for Finnradiator.

Sourcing materials and components from low-cost counties is one of the

major trends in modern business. The reason causes the trend due to the sharp market competition that pushes enterprises to cut down costs in any possible way. Most enterprises have to put a half or even more of their annual revenue into raw material. Thence, sourcing from low-cost countries can decrease costs easily. However, it is not so easy to source from low-cost countries successfully. Although saving costs is the major objective for any companies, the quality of the product and the reliability of the supply chain are also crucial factors. There is no doubt that more and more international enterprises will source from low cost countries due to the development and competition of the market.

10. CONCLUSION

Low-cost countries can be divided into two categories: in some countries, although close to the target market, the wage level is not so low. This type of low cost countries is competitive on the market that mainly dominates by products with complicated logistics and human resource factors. Another type of low-cost countries is very far from the target market, but they can offer lower and more competitive cost. In low-cost countries sourcing, buyers are mostly concerned with the quality of suppliers and procurement costs. Buyer's background may be varied, but their procurement needs are the same: to develop the cooperation with a low-cost, high quality supplier. Therefore, high-quality suppliers are no doubt becoming the focus of the new world procurement trend. Who are the high-quality suppliers from the buyers' point of view? The so-called high-quality suppliers must be able to create a high return rate of investment for the buyer. So the ability of the supplier to control the total costs and products' life cycle time are key issues.

First of all, buyers are usually concerned about the total cost of procurement. A low price does not mean low total costs of procurement. For instance, for a component of a computer, the product purchase price represents only 40% of the total cost, but there are some hidden costs such as the high disuse rates caused by the low quality level of raw materials, tariff and freight logistics costs are higher than expected, lack of understanding of the local market situation can also cause some additional costs. Thus, in spite of the low price of material provided by the suppliers, the total costs of purchases may be very high.

Although many costs control approaches are hard to be implemented in low-cost countries, there are still many feasibility plans in order to cut down the costs and assure the quality of products when sourcing from low-cost countries.

- Awareness of cost reduction

For any buyers, only having good approaches of cost measuring and controlling, it is impossible to achieve the aims without the awareness of cost reduction for all the staff. Only setting up an integrated low-cost management system can present the functions of low-cost countries sourcing

- Company's value chain analysis helps to lower costs

Analyzing and developing the company's own value chain has positive effects on costs control. For instance, implementing a strategy of combination of direct ordering and distribution, and increasing the technology and concentration level in the processes of merchandise management, these approaches will increase the inventory turnover rate and efficiency of capital

using. Therefore, if an enterprise wishes to require a cost advantage against to their competitors, the value chain analysis and restructuring that is based on their own condition is a efficient way.

Overseas purchasing is the procurement direction at Finnradiator currently. But how to keep risks in a low level while sourcing from low-cost countries should also be considered. For companies who are beginners at sourcing from low- cost countries, it is better to choose a supplier who has a related international qualified certification at first. In addition, buyers can find more reputable suppliers through channels like international trade platform and search engines. In fact, all the business requirements are not only for suppliers but also for creating an integrity and win-win basis relationship between the buyer and supplier. And in today's trade environment, the needs of buyers are moving along with the demands of consumers. Quality, innovation and value-added services are the current themes from the supplier's point of view, but for the buyer, these issues are not only challenges but also answers towards business success.

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