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# **INFORMATION FLOW OPTIMIZATION OF PURCHASING FROM CHINA**

Case: Suomen Glasluckan Oy



Bachelor's thesis

Supply Chain Management

Forssa autumn 2012

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Forssa  
Supply Chain Management

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**Year** 2012

**Subject of Bachelor's thesis**  
from China

Information flow optimization of purchasing

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**ABSTRACT**

Due to the rapid development of globalization and modern logistics, a significant growth of Finnish SMEs has been established sourcing partnership with Chinese suppliers in recent years. However, on account of the differences of language, standards, rules, cultural concepts as well as frequent changes, most SMEs that sourcing from China has experiences complexities and problems especially in the information flow phase. Since information flow is the basement of communication and interaction; information flow also influences material flow and money flow in return. Suomen Glasluckan Oy is a typical Finnish SME company that purchasing raw materials from China. According to this company, even though it has been established good partnership with trustable Chinese suppliers, the complexities and problems still occur in the information flow quite often. To optimize a clear information flow is strongly desired by both purchasers and suppliers and an optimized information flow can helps both buyers and suppliers linkage their communication, strengthen their partnership, increase the efficiency, reduce the cost as well as improve the quality controlling. This thesis starts with analyzing the information flow of Suomen Glasluckan Oy in the whole purchasing process and followed by two interviews, one is with Suomen Glasluckan Oy sourcing personnel; another is with exporting personnel from one of Suomen Glasluckan Oy's Chinese suppliers. By interviewing two people, the reasons and expectations from both purchaser and suppliers' point of view will be compared and analysed. Lastly, the recommendations to improve the information flow complexities and problems will be found out based on former interviews and analysis. In addition, a third interview with a China specialist will help to sort out more practical suggestions and recommendations tend to complexities. The objective of this thesis is to improve the information flow complexities for Suomen Glasluckan Oy's sourcing case and give an example to all other Finnish SMEs that also sourcing from China.

**Keywords** Information flow, complexities, sourcing from China, Supply Chain Management.

**Pages** 44 p. + appendices 1 p.

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Appendix 1 List of terminology

## 1 INTRODUCTION

### 1.1 Background

With the rapid increasing of past decades' global economy, the business cooperation in international supply chain becomes closer, the increasing economy and reforming markets of China have gradually attracted the attention of Western companies and China constitutes an important country for sourcing and a key area for international purchasing. (Salmi 2006). So far, China has become the third largest exporter in the world with plenty of serious and high quality suppliers. (Kettunen et al. 2008) Finnish companies started to do business in China already in 1950's. Large companies started invest and establish their global supply chain from 1980's. Since most big companies are now sourcing from China, smaller companies typically wonder whether they should do the same, but are often put off by the complexities of purchasing process. (Maaria Pennanen, et al. 2011)

Suomen Glasluckan Oy is a typical Finnish small size industrial company established from 1988. It has its own manufacturing in Finland and sells its own products domestically. This company made a strategy and started sourcing raw material from China several years ago and till now it already has established relative stable supply partnership with suppliers in China. However, since there is no Chinese employer in the company as coordinator, this company more or less has experienced complexities and problems in purchasing from China. Essentially the complexities and problems are occurred in the information flow of their purchasing process with the reason of weakness in communication and differences between two countries. For example, the language, concept, culture, standards, exchange rate and so on. As a Chinese student with knowledge and experience in sourcing management, to assist Suomen Glasluckan Oy solves the problems and complexities in its procurement is the starting point of this thesis. And in this thesis, the information flow of purchasing stage in this company is the key factor be analysed and researched.

### 1.2 Objectives

This thesis aims to analyse and clarify the information flow in process of purchasing from Chinese suppliers for Suomen Glasluckan Oy in order to find suitable solution for the problems and complexities existed. The study is focus on three main research questions, what the information flow map goes process to process in the purchasing? What complexities exists and what problems have in each process? How to reduce the potential problems such as long lead times, information uncertainty, delivery risk, cultural differences as well as purchasing professionals' skills and capabilities. Since global purchasing is important for this company's competitive position and its profit as a means to access raw materials, improve quality, lower cost, or access technology, and accurate information flow is the premise for the good flow of material and money, the questions mentioned

above are essential elements when sourcing from China and also the focus parts of this study.

### 1.3 Research methods

The research methods used in this study are mainly qualitative methods, participant observation and in-depth interviews were two behaviours that been done to collect data and do the analysis. Participant observation was done in the Suomen Glasluckan Oy with the help of Markus Koljander who is responsible for sales and marketing of the company. During the observation period, Markus illustrated most information about the company and basic information flow map in the global purchasing which include all activities and processes. Besides, he also showed how the information flow goes process to process and real examples of which. In addition, the translation and personnel contact work were also with the assistance of Markus.

Interviews were done first with Hannu Peltonen, who is responsible for sourcing from China. During this interview, Hannu indicated most evidence and data that support this thesis, for instance, a holistic understanding of information flow map for sourcing from China, the complexities and problems happened in the company, the possible reasons for that and the expectations from company's point of view. Furthermore, a secondary interview was done with an export manager in one of Suomen Glasluckan Oy's Chinese suppliers and he showed the reasons, experiences and expectations for exporting in his point of view. After that, a comparison was in the thesis with deep analysis and evaluation, which listed the main reasons and differences that caused to information flow complexities. In the end, a third interview was done with Johanna Heikkinen, who is a China specialist and fully experienced on how to source from China optimistically, hence, this interview was for the recommendations and advice would support the solutions for information flow improvement of Suomen Glasluckan Oy.

## 2 THERETICAL BACKGROUND

### 2.1 Information

Firstly, information is processed data for a particular reason, and it usually presented within a context in order to increase understanding and decrease ambiguity (Business Dictionary, 2012). In the information hierarchy, information lists in the level above data, which is the raw material of information and in the level under knowledge, which is absorbed information by people.



Figure 1 Information hierarchy

As the figure shows above, the hierarchy is listed from data to wisdom as from bottom to top. For example, in purchasing, the items such as glass, wood, iron, etc can be seen as data; a purchase order of one container of glass sent to Helsinki can be seen as information; when the suppliers receive the order and get the order processed, then it can be seen as knowledge; And if the order gets repeated every certain time, the purchasing process goes frequently and each partner in the supply chain cooperate and evaluate together, it is wisdom. However, in this thesis, information is the main factor for estimating.

## 2.2 Information flow

The definition of information flow is movement of communication in the network for people to exchange the information or data. (MBA lib, 2012). The purpose of information flow is to connect, to control and to make decision of the information in order that the partners in the information movement can understand, receive and use the information. The basic activities inside information flow includes: information collection, transmission, process, storage, and analysis. For example, instructions, plans, contracts, data, reports, certificates, advertisements and market conditions these can be realized as the information flow elements, usually, in each business activity, business partners have to understand, share and use these elements in order to adjust the business process and material flows. So in other word, information flow is the precondition of material flow and business process. It is essential for a company to specialize the information flow carefully otherwise there will be many potential risks in the material flow and business process.

### 2.3 The characteristics of valuable Information flow

Normally, quality, speed and coverage are the three most important characteristics that impact the value of information flow. For instance, in the business communication, each partner shares and transmits the information in an oral way or verbal way; if one wants to make an order of wines then perhaps he will call the supplier or write an request by email. But the call may get an instant answer and the email might be delayed whenever the supplier checks the email. If the buyer expects a faster reply then he should call to the supplier instead of sending the email. In this case, the speed plays an important role in the business. Another example, in the same case, if one wants to make an order of wines, the purchaser may write in the order: 16 bottles of wines. Likewise, he can write in the order: 16 kg wines. Although the number is the same, the small difference in unit can make a big difference in the whole business. A mind map can illustrate the main characteristics of a valuable information flow below.

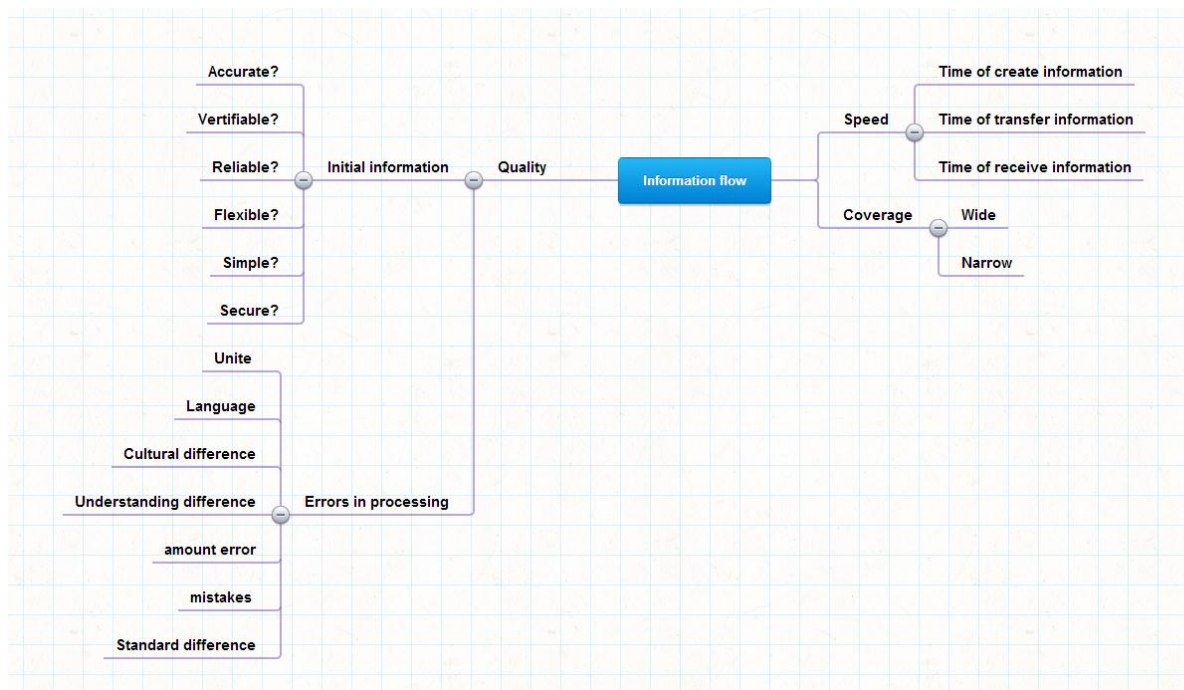


Figure 2 characteristics of valuable Information flow

As the map shows, there are many characteristics that decide whether the information flow is valuable or not. Each characteriser has certain impact on the business process success. Depends on different receiver has different expectation on the information requirement; the information creator must adjust the specific requirement to improve the information communication. If the receiver wants simple, flexible information with fast

transmission, it is not good for the sender to compile a miscellaneous, lengthy message and send it using a slow method. In international business, one characteristic missing or mistake usually cause big postpone of the whole process. Especially in two multicultural partners who both speak English as a second language, considering the cultural difference and country standard difference, one part always feel headache in processing the information flow without enough coordination beforehand.

### 2.4 Information flow in Supply Chain Management

Supply chain generally means a group of more than three parties connected by the material flow, information flow and monetary flow. The parties in the supply chain are, for instance: manufactures suppliers, distributors, retailers and customers. Supply chain management is the evolution of logistics management that composes of materials management and physical distribution, supply chain management is developed with the application of information technology and strategically planning, each of them is based on the valuable information (Tapani Honkanen 2009). Besides, the aim of supply chain management is to achieve the biggest value with lowest cost of supply and demand management by controlling the material flow, the information flow and the monetary flow efficiently. Hence Ketchen et al. (2008) introduced the conception of the best value supply chains, which means the supply chain focus on the whole added value to the end customer and mainly performs four aspects: speed, cost, quality, and flexibility. Specifically the information flow means if the supply chain is achieved with less cycle time and faster speed of the information transformation, less cost of expenses, higher quality of the information content and more flexible information in responsiveness to customers, this so called best value supply chain is able to offer the highest total added value in terms of fulfilling customer satisfaction and create most competitive advantages.



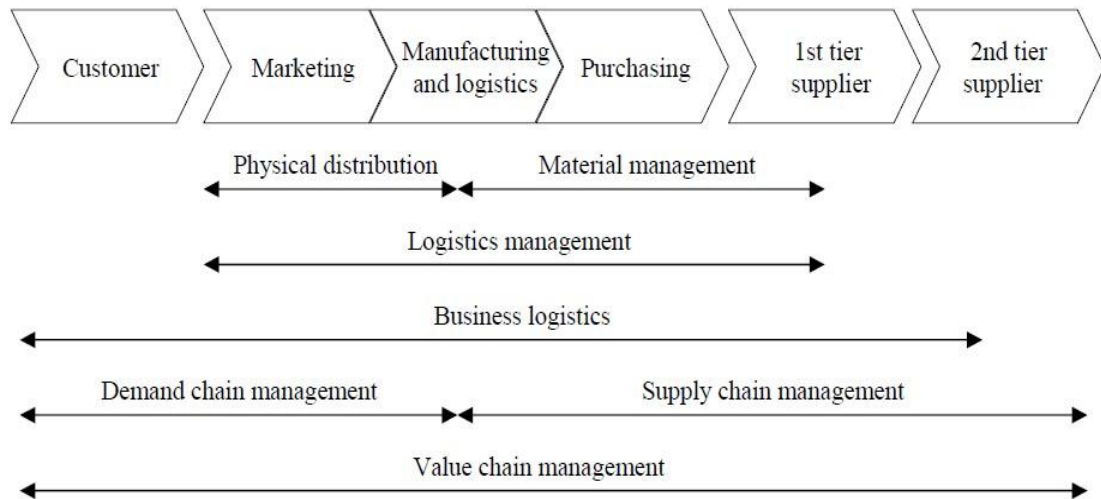


Figure 3 The business chain. (Van Weele 2010)

SCM is an effective coordinative and integrated tool connected with moving goods from raw materials storage over to the end users, the purpose of supply chain management is to integrate the three flows optimistically and to establish coordinated and systematic partnerships with other parties in the supply chain. More and more companies recognise that competition between companies is not as normal about the competition between companies themselves and their brands names. But now the competition is about supply chain controlling and partnership management between each company. Supply chain management is close to the company's competitive vision for sustainable competitive advantage. However, operating an integrated supply chain needs constant information flows, which in turn assist creating the best product flows. Customers always remains the primarily attention on the process. To accomplish a good customer-oriented value chain requires processing information not only in an accurate scale but also in a timely manner such as the rapid response that can reply steady fluctuations in customer demand. Controlling uncertain information flows in customer demand, manufacturing procedures, and supplier performance are essential to effective SCM. Some key processes in supply chain that are influenced by information flow are shown in the following figure.

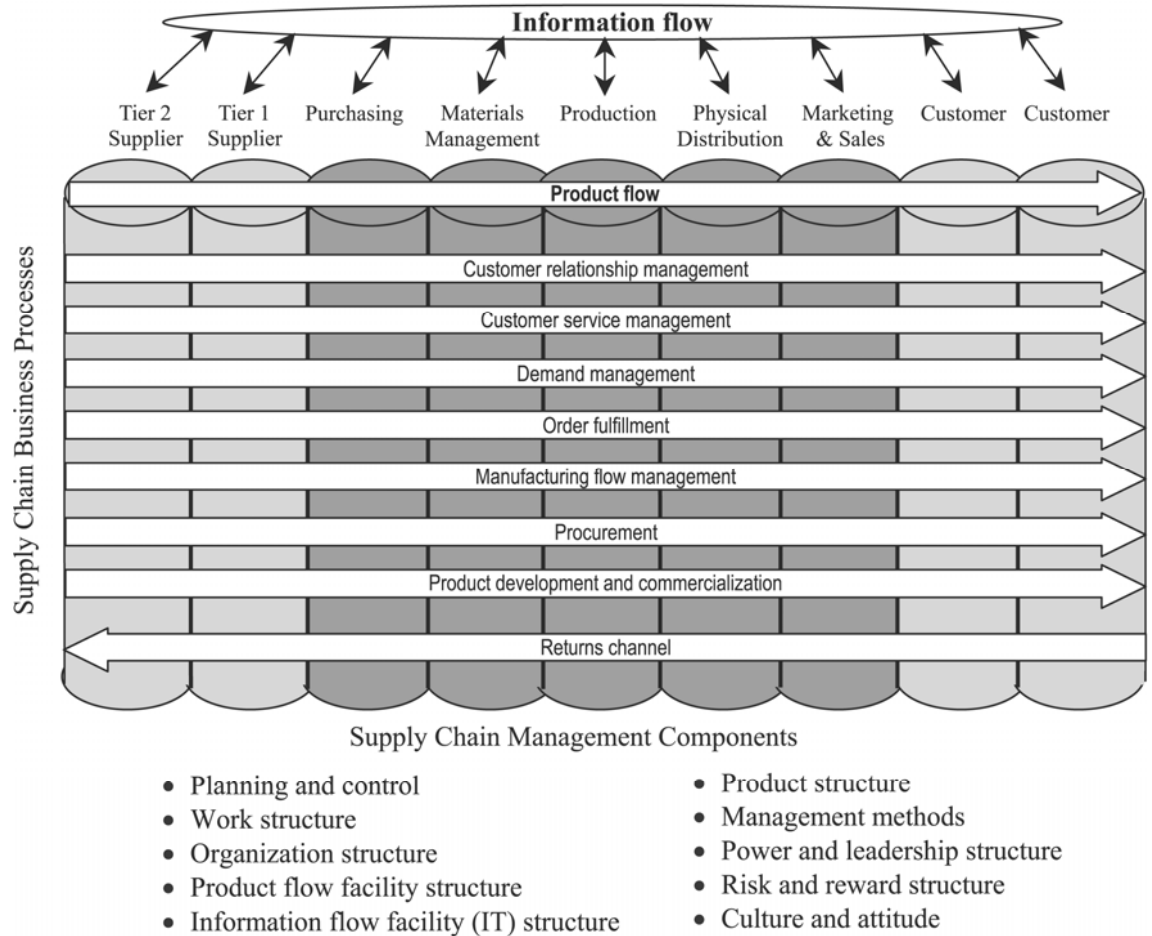


Figure 4 Framework of supply chain management. (Lambert & Cooper 2000)

The first level processes in this integrated SCM are aimed at customers, since the single source of customer information is provided via customer service such as the real-time information on promised shipping dates and product accessibility of company's production and distribution operations. The second level demand management process requires to balance the supplier's capabilities with customer's requirements. Good demand management can reduce ambiguity and provide effective information flows throughout the supply chain. Point-of-sale (POS) and "key" customer data control are example tools that help efficient demand management. Next, the order fulfilment process is more important procedure because orders link procurement, manufacturing, distribution, delivery and transportation plans through the entire supply chain and orders essentially are reflection of information. The flow of orders is the flow of information transformation. Manufacturing management processes need also efficient information from the market in order to create strategic plans and new products to perform fast flexible response to accommodate changeable customization. Besides, customers and suppliers must be combined into the product development process for the sake of reduce the product life cycle, which requires procurement be critical and efficient, sourcing should be on a

global foundation if company develops supply chain worldwide. Lastly, return management enables productivity improvement opportunities because returns involve the feedback information from end customer and which just show the weakness and improve opportunities of company. (Lambert & Cooper 2000)

To manage the information flow effectively is one of the key sectors in the supply chain management especially for the sake of developing the best value global supply chain, since an international supply chain involves many more parties and more complicate networks, each party might own several substitute supply chains as well. Only in the way that information flows are accurate can the material flow and monetary flow be stable. However, under the circumstance of globalization of the world economy, over the past several decades, an increasing number of domestic industries are choosing to develop internationally and more and more local companies are trying to establish partnership with foreign companies with the purpose of gaining more profit. In addition, decreasing tax, improving transportation, changes in information technology and global competition accelerate the development of global supply chain. Most of the global leading industrial companies such as Samsung, TOyota, have very broad supply chain that they have thousands of suppliers, distributors, and trailers in quite many different countries. To manage such a huge supply chain, they must ensure highly standardised, consistent flows of material, information and financial. One more unexpected product in storage might cause unnecessary cost. As a result, JIT, lean management, In-time inventory philosophies and advanced information technologies are applied increasingly in the global supply chain management. For example, a developed global supply chain must involve all partners from suppliers, manufactures, distributors, retailers to final customers and in the network there are orderly material flow, information flow and monetary flow. Regularly the material flow comprises two aspects: One is tangible product flow such as the raw material, semi-finished product and final product from supplier to the final customer, the other is the reverse material flow formed via returned products, maintenance, product recycling and processing. The information flow primarily reflects the orders' status: customer order, inventory order, delivery order and sales order. The monetary flow includes credit, payment, and invoice. The efficient conformity and coordination of these three flows is the key to manage the globe supply chain.

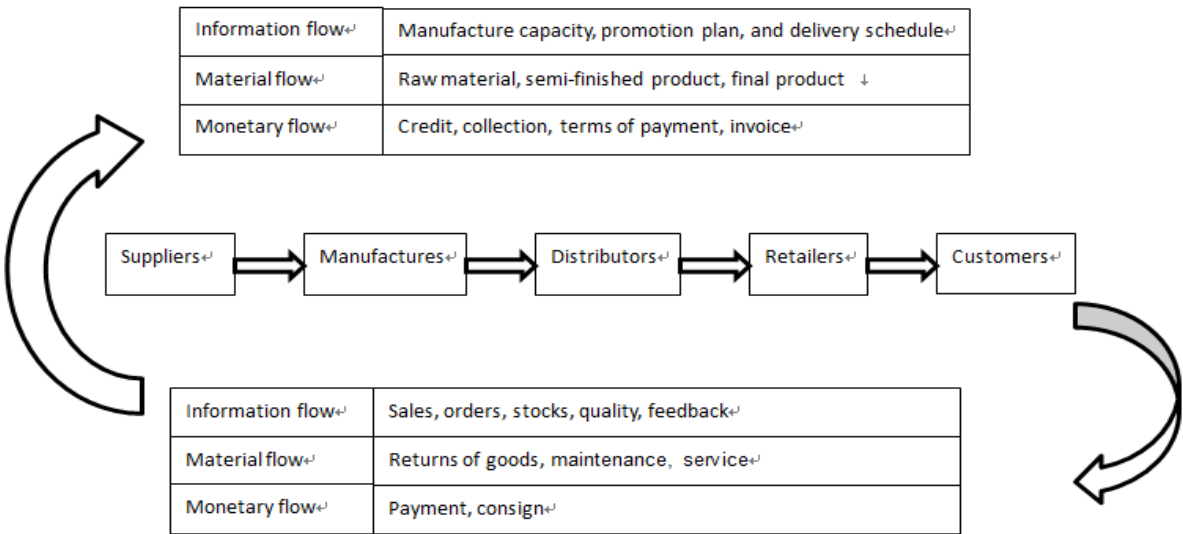


Figure 5 Example of Supply Chain System.

Nonetheless, how to integrate supply chain with optimistic way, it firstly shows the answer of information flow integration, information flow is the premise of the other two flows. If the information flow integrates in the internal level, it can help each department share the information with a faster and more visible way, hence the communication and decision can be improve to cooperate different tasks and the process of one project can be more standard, simple and efficient. At the external level, it can help the company communicate better with customers and consolidate more stable relationship with partners. For instance, the order process and feedback receiving from customer can be faster; the market demand, manufacture capacity, production scheduling, promotion planning, inventory status and demand forecasting can be shared with suppliers, distributors and other parties. Therefore, the shared information is the best method to solve the “bullwhip effect”, which is a phenomenon that describes the information distortion in the supply chain: When company manufacture new product or make strategy only rely on the demand information from adjacent subordinate companies, the demand information occurs little different with the real demand information and the unreal information will go upstream along the supply chain and become larger and progressively until the unreal demand information reach to the most original supplies, in the time that demand information has been already occurred a huge deviation with the real information that customer real need in the market. (MBA lib 2013)

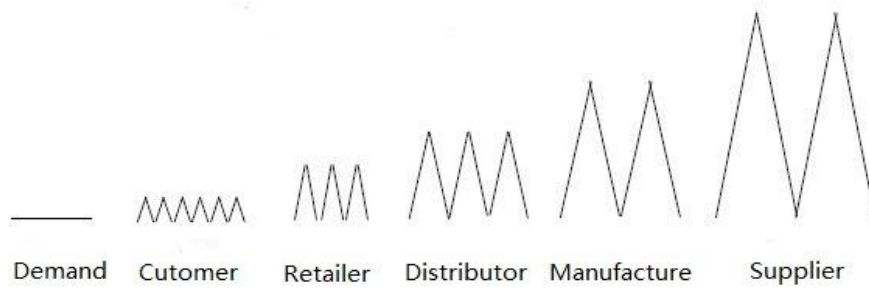


Figure 6 bullwhip effect in supply chain.

Consequently, the larger the scope of information sharing, the less risk and loss causes from bullwhip effect is. In an idealized supply chain, information is shared through the whole supply chain; all the parties communicate with the same information in the same or different time, and each party can see the information variation from one to another. Nowadays, with the development of information technology, internet and telecommunication, information sharing in the supply chain improves more integrated and more visible. EDI, ERP, business intelligence, database warehouse and RFID technology are more and more widespread to the companies on account of supply chain management and international logistics. People are also entering into an information society step by step that human beings will use ICT tools in most aspects of life (Åberg 1997, p. 40). Hence the information flow plays a significant role in SCM.

### 2.5 Global purchasing information in the supply chain context

Under the global supply chain, competition requires highly flexibility of industrial firms. As a consequence, companies are integrating domestic and international sourcing to achieve sustainable competitive advantage. However, to meet the requirement of global competition environment, companies are also under the pressure of reducing costs and improving quality and responsiveness. Some firms put focus on the supply side to increase their competitive advantage since they spend a great ratio of revenue on the supply part and material procurement whose costs occupy a high percentage of total costs, so that managing the purchasing in the supply chain has significant meaning for many companies (Gelderman & Semmeijn 2006).

Purchasing is a key part of the supply chain and global purchasing has become a critical strategic decision for firms competing on a global environment. Global sourcing and management of supply base have become

essential competences. Managing suppliers from a wide range of countries implies that the whole supply chain essentially connects to the customer relationships and suppliers are always in a good position in the supply chain. Purchasing management is focus on supplier resource activities and supply chain management encompasses all logistics activities, the saving in supplier level or raw material level can influence the costs reduction of all supply chain. Hence currently an increasing number of companies attempt to streamline their suppliers and save the cost from supply phase. (Van Weele, 2010, Edition V)

The following figure illustrates the purchasing process with main activities within the purchasing function.

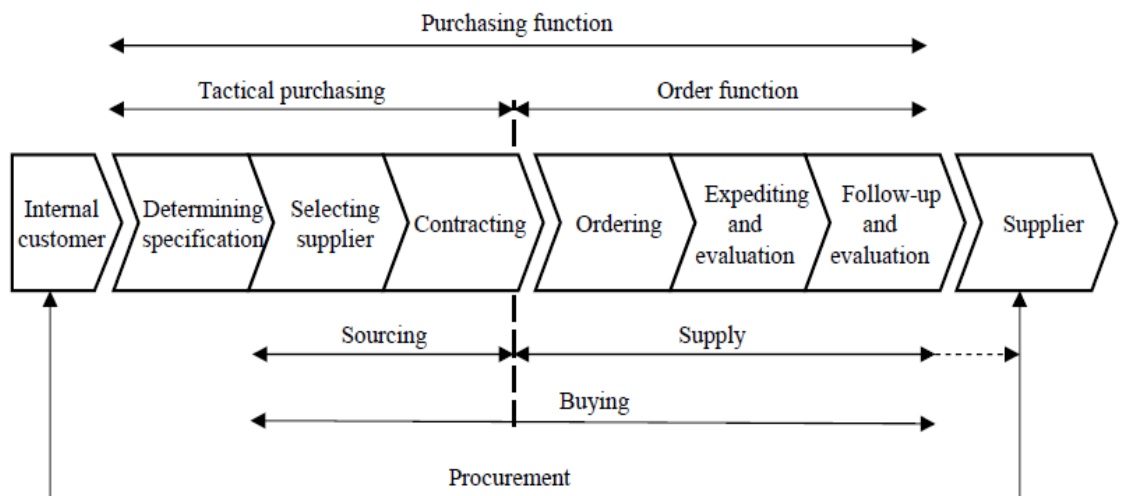


Figure 7 Purchasing process model. (Van Weele 2010)

In the last decade, many companies have altered their emphasis from short term transactional purchasing conception to supply chain management method where they focused on developing long-term relations with suppliers together with establishing partnerships that resulted in improved integration of supplier networks (Karpak et al.2001). Supplier relationships link the company's internal configuration of supply to the external resources of its suppliers. Therefore, communication in relationships and information transferring play a critical role in ensuring efficient supply.

In global purchasing, it takes time to establish buyer-supplier relationships. In this duration, purchasing firms must manage the supplier network effectively, for example: good identification of supplier selection standards, strategic supplier selection decisions, and enough monitoring of supplier performance. Supplier selection decisions control the amount and quality of suppliers that should be selected as supply sources and how order numbers should be assigned between the selected suppliers. Supplier selection is essentially a complex decision. The decision procedure involves more than one standard, products have many characteristics such as price, quali-

ty, service, and more, and members of purchasing committees bring diverse criteria to purchasing decisions that are driven by their departmental interests such as cost, reliability, and delivery. These factors are affecting the selection complexity. (Karpak et al. 2001.)

### 2.6 Information flow complexities in globe purchasing

Although global sourcing is recognized as an important strategy in the global supply chain, not many companies have ability to achieve developed global sourcing capability since there are several complexities limit, especially when purchasing from less developed countries, many complicate elements in the information flow exist that will obstacle two countries' purchasing process. The following factors are listed as main complexities.

- The uncertainty and long cycle times of information flow.
- Purchasing professionals' lack of skills and capabilities.
- Unpredictable inflation rates and exchange rates.
- Government intervention.
- Differences in culture, language, practices and time zones.
- Lack of well-defined specifications.
- Lack of standardization.
- Frequent changes in materials planning.
- Unreliable planning information.

To create stable and cost efficient supply chains, it is important to match the right product with the right supplier at the right location. Low cost country implies certain characteristics of the supplier and its location and sourcing from these countries requires that companies are aware of these characteristics. (Fredriksson & Jonsson 2009.) So that pursuing a global purchasing strategy successfully requires that a company possess a supply chain orientation and suitable investments in the skills, capabilities and information technologies to deal with the complexities and uncertainties of the global environment. (Mentzer 2001.)

### 3 CASE SUOMEN GLASLUCKAN OY

#### 3.1 Company introduction

Suomen Glasluckan Oy is a Finnish company which specializes in designing, manufacturing and installing aluminium allOy profiles, architectural curtain wall projects and glass door and window projects in Valkeakoski, Finland. It offers customized products such as glass terraces, balcony glass, railing, glass curtain walls and aluminium windows and doors. The size, model of each product can be modified as what customer need. The company was founded in 1988, and was awarded AAA credit rating for five consecutive years, so the strength of this company is the long-time experience and professional knowledge in this field.

#### 3.2 Products and Services

Main products are glazed terrace, balcony glass, architectural profiles, railings, glazed and aluminium doors, sliding doors, wind boxes, glass facades and glass windows. Suomen Glasluckan Oy offers customized products and solutions, customers can choose the size, model, colour, number of doors, gaps of units, type of glass, and type of lock as they expect. Customers can make a fast online order or discuss with specific solution with company's engineers for their own order. The glass productions are safety, stable, durable and convenience for users. And the company offers fast installation and five years warranty to customers.

An example of the product, named as glassluckan-sliding glazing framed model, showing the details as the figure below. The explanations are: Firstly, the rail is designed for four different glass elements, top and bottom profiles are similar; Profiles are equipped with brush strips system to reduce noise and pull force and there is rubber seal between glass and profile in order to increase the tightness. Besides, the wheel equipped with bearing has been installed on a rustproof axis that is pressed on the profile to ensure smooth movement. In addition, gap between rails is 25 mm; rails are equipped with or without lip, depending on the structure. Then, the explanation about the profiles is indicated as the second picture in the figure, while glassing is closed, frame goes vertical and profiles are equipped with brush strips system to reduce noise and pull; when it close, the profiles are connected with hooks each other to improve tightness and stability. The features of this model are:

- Each glass moves on its own rail.
- Sturdy nylon wheels have been equipped with bearings to ease sliding.
- Glasses have wind locks.



- Aluminum rails have water extraction holes.
- Profiles have double sealing.
- To reduce noise and dust, the profiles are equipped with brush strips.
- Glass elements can easily be raised from their spots during washing.
- No mechanical, wearing parts (parts that wear out eventually).
- 5 year technical warranty/guarantee.

## Glasluckan-liukulasitus, puitteellinen malli

Kisko on suunniteltu neljälle lasielementille. Ylä- ja alaprofiilit ovat samanlaisia.

Profiilit on varustettu harjallistalla melun ja vedon vähentämiseksi. Kumittimiste lasin ja profiilin välissä lisää tiiviyttä.

Lasivalintoehdot kohteesta riippuen, myös eristyslasit.

Laakeroitu pyörä on asennettu ruostumattomalle akselille, joka puristetaan kiinni profiiliin ja näin takaa pehmeän liikkuvuuden.

Pystypuitteet, lasituksen ollessa suljettuna

Profiilit on varustettu harjallistalla melun ja vedon vähentämiseksi. Suljettuna profiilit ovat koukulla kiinni toisissaan – lisää tiiviyttä ja paikallaan pysyvyyttä.

Kiskojen väli k/k 25 mm. Kiskot joko huulioksella tai ilman riippuen rakenteesta.

- Jokainen lasi kulkee omalla kiskolla
- Kestävät nailonpyörät on laakeroitu liu'un helpottamiseksi
- Laseissa tuuliukot
- Alumiinikiskoissa on vedenpoistoreiät
- Profileissa kaksoistivistys
- Melun ja pölyn vähentämiseksi profiilit on varustettu harjallistoin
- Lasielementit voidaan helposti nostaa pois paikoltaan pesun ajaksi
- Ei mekaanisia kuluvia osia
- 5 vuoden tekninen takuu

Figure 8 Glassluckan-sliding glazing framed model.( [www.suomenglasluckan.fi](http://www.suomenglasluckan.fi))



Figure 9 Suomen Glasluckan Oy product display 1.([www.suomenglasluckan.fi](http://www.suomenglasluckan.fi))



Figure 10 Suomen Glasluckan Oy product display 2 .([www.suomenglasluckan.fi](http://www.suomenglasluckan.fi))

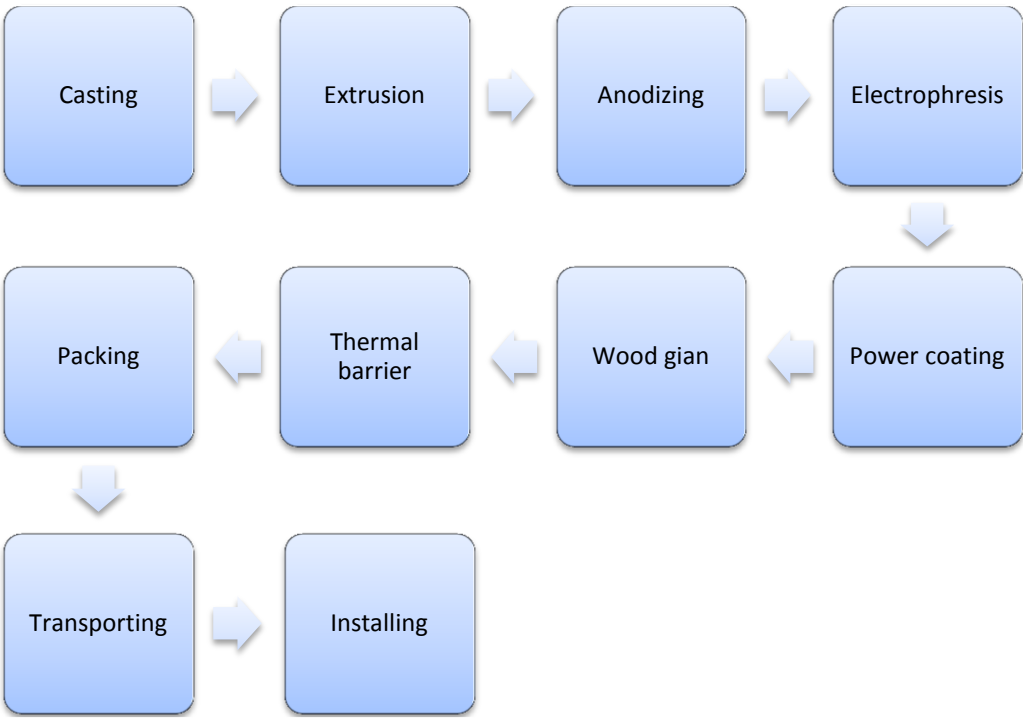


Figure 11 Manufacturing process map.

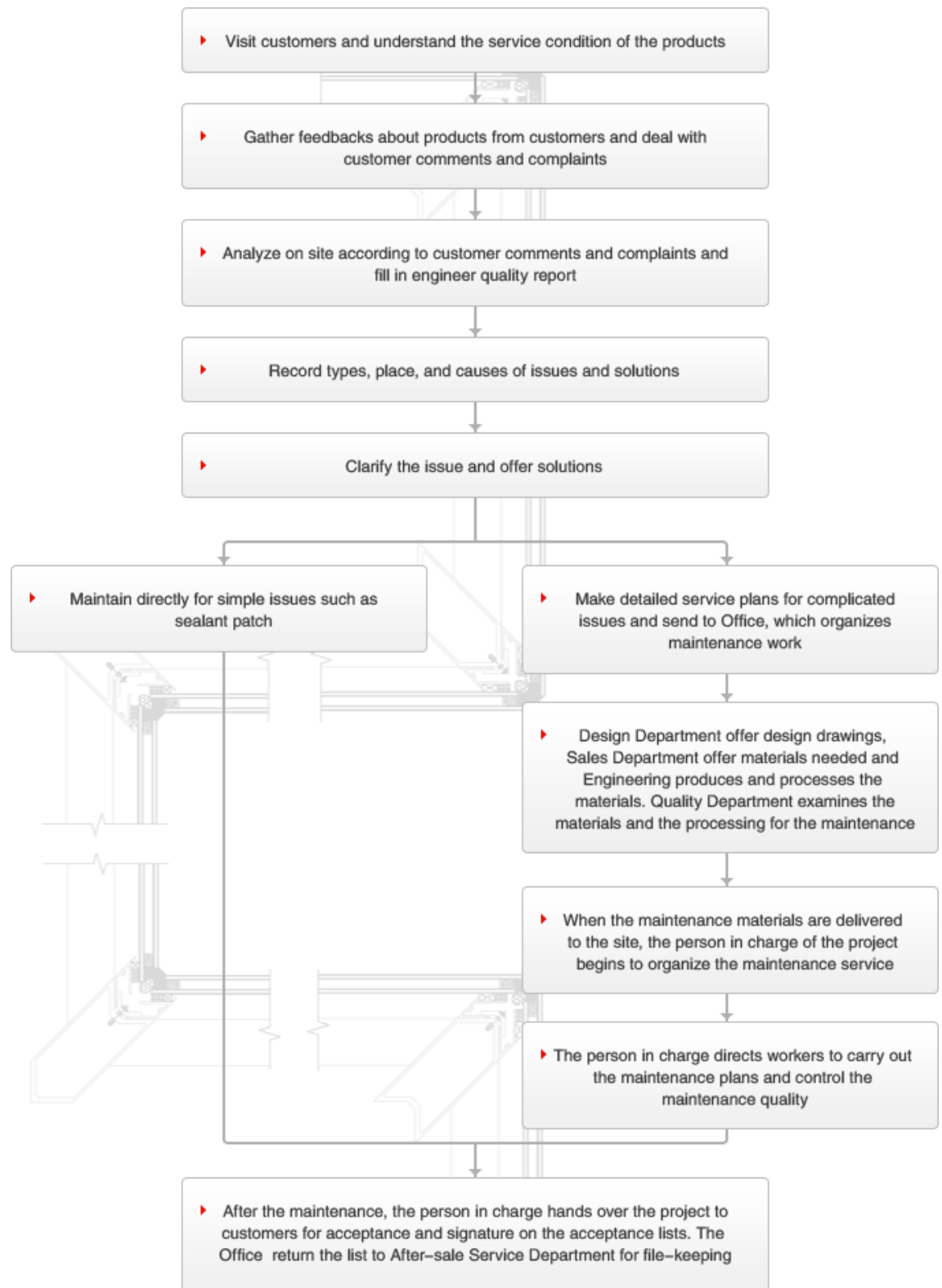


Figure 12 Customer service process map. ([www.suomenglasluckan.fi](http://www.suomenglasluckan.fi))

### 3.3 Establishment of partnership with Chinese suppliers

The company initially purchased raw material from domestic market but with the highly standard and expensive cost, Suomen Glasluckan Oy could not gain good profit so it had to think other options and they considered to change the supplier. At that time, Estonia was a good option since its nearby location and low effort, but when Estonia became a member of the EU in 2004, the cost scale began to grow very fast and it affected negatively to resource and material export. At the same time, China quickly opening its market and its economics was growing very fast. Many large Finnish companies already gained some achievements and an increasing number of Finnish SMEs were starting going to China. Because of the cheap price of raw material and attractive policy for international trade at the time, Suomen Glasluckan Oy made its decision that why not catching the time and going adventuring in China?

However, in the Chinese culture, it is not easy for a fresh foreign company to find the suitable supplier at one time. As relationships (Guanxi) are highly respected between people to people and it plays a vital role in dealing with business partnerships in Chinese society. If there is one important person who is known by local people and that person knows someone who might be important person in finding a decent supplier. Local people may have really strong ties with centrally located actors in that specific industry. Nevertheless, with the cooperation with Hannu Peltonen who was CEO at his own company that also source from China, Suomen Glasluckan Oy has stepped into the track and established a relevant long-term relationship with Chinese suppliers. Hannu had experience in China and he personally knew some Chinese friends who had connections to Chinese suppliers. This helped a lot for Suomen Glasluckan Oy changing its suppliers from Finland to China rapidly.

### 3.4 Current purchasing situation

Nowadays, Suomen Glasluckan Oy has relevant stable purchasing network in China with several suppliers, mainly purchasing raw materials such as glass, aluminium, sealing strip, profiles, nylon, wheels and other components. Every certain month, there are containers with its purchased materials shipping from Guanzhou port or Shanghai port. The peak time it had ordered ten full containers of materials from different place of China such as Beijing, Shanghai, Kunshan, and Dongguan. Hannu has factory network located mainly in the Southern – East China area, especially in Yangtze River Delta and little in northern China around Shanghai and Beijing. At the moment, Suomen Glasluckan Oy and Hannu is business partner, so Hannu can be seen as their outsourced sourcing manager and he is responsible for sourcing. According to Hannu, it is really important to analyze and evaluate the information flow before make contract with suppli-

ers. Many times errors happened in the information flow that in turns causes problems in material flow and money flow. For example, even correct materials that ordered arrive several times it might have mistaken ones next repeat order. Therefore, it confuses Hannu to deal with Chinese suppliers to lean the uncertain information flow since Hannu does not have time to go to China and talk with suppliers face to face which seems to be the best way to improve this situation. Additionally, the cultural concept, standard difference, exchange rate and other elements influence the complexities of information flow in Suomen Glasluckan Oy's purchasing process. If there will be solutions that can coordinate and improve the information flow, the entire supply chain efficiency can be better.

## 4 INFORMATION FLOW RESEARCH AND ANALYSIS OF THE COMPANY

### 4.1 Current information flow in purchasing

The information flow research and analysis were realized by observing Suomen Glasluckan Oy and interviewing Markus and Hannu. The data was mostly gathered by Hannu's description and indication. The following figure shows the information flow process map from beginning sector to end sector. Each process includes what information needs, what documents handled and by which methods they manage the information.

## Information flow optimization of purchasing from China

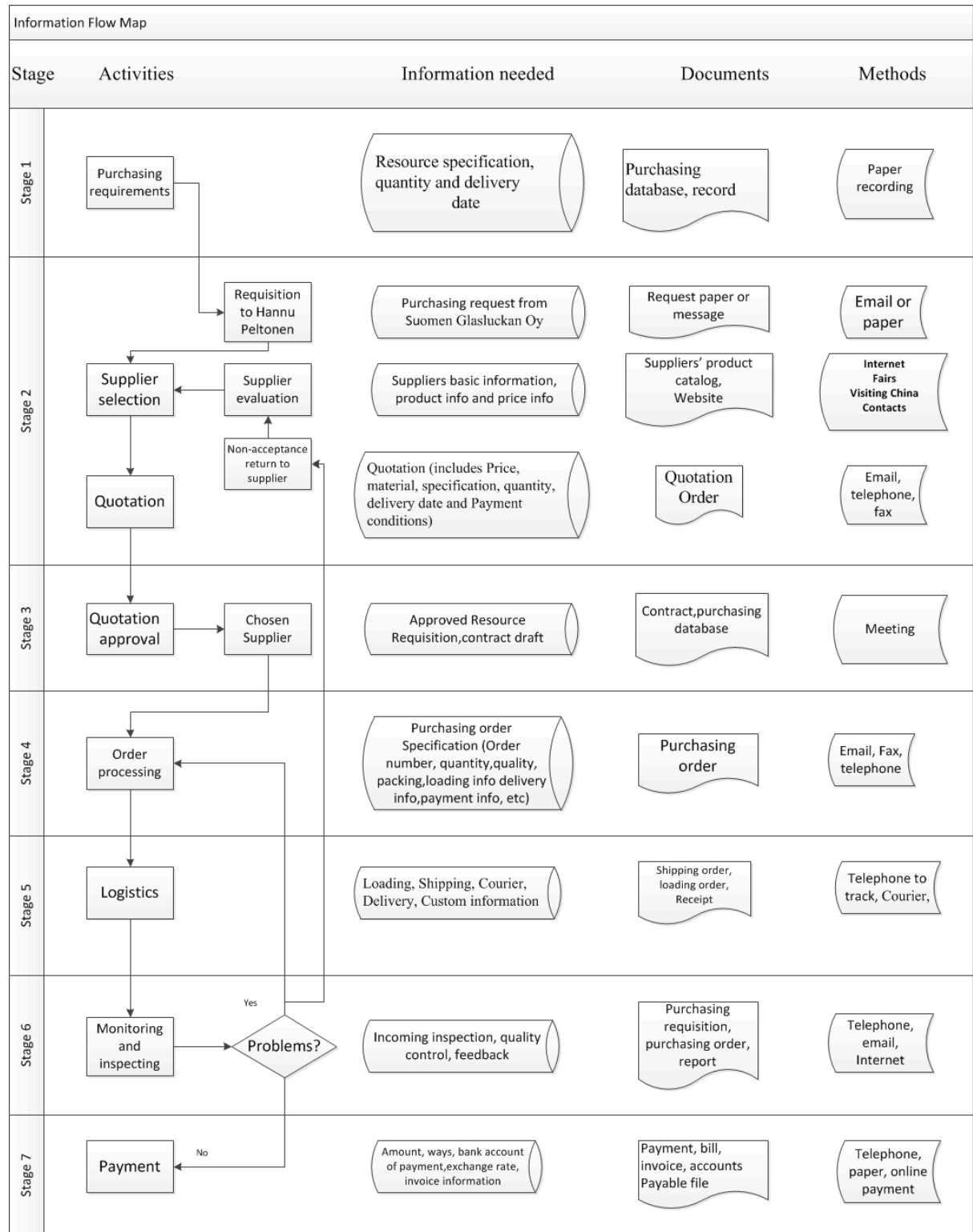


Figure 13 Information flow map

Figure 13 shows the main information flow process map and most important elements in each process. These are described as seven stages.

- Stage 1: Purchasing requirement. By means of purchasing requirement, Suomen Glasluckan Oy shows their purchasing requisitions regarding materials to be purchased. The requisition is generated manually by Suomen Glasluckan Oy factory manager and CEO together. Usually, the requisition lists the general information of the materials they required such as general description, quantities, desired delivery date, amount of budget, range of price can be satisfied and account number, etc. After that, they record the requisition not only manually in a notebook but also on computer system. The system is not specialized for purchasing, but just an excel document especially for recording the requisition history.
- Stage 2: Supplier selection. When Suomen Glasluckan Oy confirms purchasing requisition, they send it to Hannu Peltonen by email or paper version directly. Hannu collects the requisition and starts looking for suitable suppliers. Since Hannu has almost 15 years' experience living and working in China so he has his own database for Chinese suppliers. He firstly check the requisition and determine each item the company needed, if he is confident that he has a reliable supplier for certain items, he will directly mark the supplier names from his own database. But for the uncertain items, he might contact his trustable suppliers to ask where find the item supplying or he might try to search suitable supplier information himself on internet.  
When time allows, he goes to visit China on purpose where he can visit some special fairs to collect more suppliers' information or he can visit and check the supplier's company personally. Nevertheless, this stage takes longer time than every party expected and exits many ambiguity elements. Because in this phase, there are so much information needs to gather and too much communication with Chinese. For example, Hannu has to control all the suppliers' information such as supplier name, contact, location, products, credits, etc. and all quotation information including price, purchasing specification, payment conditions, amount of material valid, benefits offered, etc. After that, perhaps he has to do little negotiation with suppliers to bargain the price, benefits and payment things. In addition, when purchasing has done, Hannu will evaluate suppliers in his own way in order to improve his supplier database. Hence, this stage is really important one through all the processes.
- Stage 3: Quotation approval. Typically, it takes several months' time to find a best supplier, however, when the supplier selection phase get done, everything goes easier. In this stage, Hannu has to meet with supplier and sign the contract with specific supplier representative. After each one get signed on the contract, cooperation officially starts. And the purchasing partnership succeeds establishing. Fax and Email are also tools for this but not often work well so they are not available nowadays.



- Stage 4: Order processing. After chosen the suitable suppliers. Hannu send the phasing order to them by Email, fax or telephone. The purchasing order is closely depending on Suomen Glasluckan Oy's purchasing requisition and supplier's quotation order. This purchasing order is a core factor through all the purchasing processes since this can be more or less the only evidence that can be followed and monitored through the whole purchasing period and it connects suppliers and purchasers strongly. Usually when the supplier receives the purchase order, it is required to send back a confirmation for each purchase order together with delivery documents and invoices. These documents are also the basis of Hannu's suppliers' database. Purchasing order lists more specific information such as the exact quantity, price, delivery date, payment, etc.
- Stage 5: Logistics and delivery. Normally, the supplier will deliver the materials ordered at the right time and right amount. And suppliers should contact freight forwarding agency or find shipping company. At the time freight forwarding agency will drive the towing truck to take the goods then put it into warehouse waiting for custom inspection, when the inspection get done, the goods will be packed, loaded and shipped then be delivered. When shipment approved, a copy of the delivery document will sent to supplier and in turns send to Hannu, at the same time goods are released and shipped to warehouse or the user. When the shipment by the supplier does not meet the original order, Hannu will fill a complaint form. Complaints can include the quality, quantity or packaging. These data are put into the system again in order to help improve supplier database. However, the realistic situation is troublesome, Chinese suppliers sometimes do not process as normally, so logistics sometimes are founded also by Hannu. They helps suppliers do the delivery process and give shipping feedback to Hannu as the third party logistics. But as Hannu describes, most of his reliable long-term partner suppliers that knows how to find shipment by themselves.
- Stage 6: Order follow-up and inspection. Subsequently, the order must be monitored and incoming goods must be inspected. To ensure effective monitoring, Hannu has right to track the delivery and check delivery history with the code or shipping order number from suppliers. If the overdue delivery occurs, it is suppliers' responsibility and they have to create an overdue delivery list which lists the purchase orders that should be delivered by a certain date but which have not been delivered on time. This list can be reported to Suomen Glasluckan Oy as evidence and the same with incoming inspection report, which lists the purchase orders, which at delivery have been rejected by quality control. The quality control is an important checking process that personnel should check the delivered goods against the order copy. In the quality control phase, both quantity and quality are inspected, the materials that do not match the criteria will return back suppliers and the ones that pass the inspection will goes to the payment stage. No matter the goods pass the inspection or fail the inspection, inspection re-

ports or quality control report are both sent to Suomen Glasluckan Oy and supplier via email or fax and in the meanwhile, both parties are required to reply to confirm and restate that what need to improve for the non-acceptance materials. All the non-acceptance orders directly influence the suppliers' evaluation work in Hannu's suppliers' database.

- Stage 7: Invoice handling and payment. When the delivered material approves and no mistakes occur, it will come to the last phase of purchasing process – the invoicing and payment stage. In this stage, Hannu will collect and check all the documents in the previous stages, if there is no problems, he will give the delivery documents and inspection report to Suomen Glasluckan Oy with the original order. Suomen Glasluckan Oy will check the documents sent by Hannu and compare the report with purchasing requisition; sometimes the inspector from the company also goes to check the goods before inspection report created. When matching is possible, the invoice will be paid to supplier according to the agreed payment terms. When matching is not possible, the company can refuse the payment and explain the problems, Hannu will then investigate what the reasons for the not-matching orders and go to clear the differences till Suomen Glasluckan Oy accept the materials. However, in most cases, Suomen Glasluckan Oy accepts the invoice since the inspection is strict enough, only some time it happens the non-acceptance.

### 4.2 Problems in the information flow

As mentioned before, many complexities and problems exist in this information flow of Suomen Glasluckan Oy's purchasing network. In this section, all complexities and problems will be listed depending on the information flow map (figure 13). The complexities data was gathered by interviewing Hannu. The following figure indicates the problems in the information flow map stage by stage.



As the figure shows above, problems happen in each process in the information flow.

- Problem 1: Resource complexities, inaccurate forecasting, uncertain messages and requisition delay. From Suomen Glasluckan Oy to Hannu, requisition is created by the company but received by Hannu, according to Hannu, sometimes the resource complexities occur, which are caused by factory's misunderstanding of utilization of raw materials and inaccurate forecasting of the amount or quality of raw materials. For example, to manufacture the next quarter's demand, company has to forecast the number of orders and which kinds of products will be most popular ones then make the purchasing requisition, but for such a small company, there is no stable element for forecasting the demand and such kind of industry is not influenced by things such as weather, holiday etc too much. So no one can estimate exact number of customer orders. Hence, to get clear resource requirement, for Suomen Glasluckan Oy itself, there are complexities for them to forecast the resource specification. Besides, usually, Suomen Glasluckan Oy send email with requisition to Hannu and call him to confirm after sending that, but sometime Hannu might be careless that misunderstanding the requisition and make the wrong number or date to suppliers. If he is in China, there is delay happened to receive the requisition, so in the initial process, everything has to be done carefully.
- Problem 2: Information transaction uncertainty, supplier information complexities, supplier's credit and reputation analysis, cultural difference troubles, communication problems and other behaviour differences. It goes without saying that the process that from Hannu to supplier is the most essential one since over 70 percentages of problems happens during this section. However, only through the interview with Hannu cannot summarize all the problems occur in this process and only by recording cannot make people imagine how difficult the reality is. Hence, two cases from Hannu are quoted to help explain. But first of all, let's have a look at those problems one by one: Firstly, when Hannu gathers all the requisitions he has to understand clearly what purchaser expect and what specification they need, therefore, Hannu must transfer a certain message to supplier, what he want to buy, how much for the quantity, how much for the budget and which date the stuff expect to deliver. If Hannu remember wrong information or give the wrong information to suppliers, unhappy will happy to all the parties. However, it rarely happens manually mistakes about information transaction with Hannu, most of the problems occurs in the communication interval, for instance, Hannu sends a message with ordering a yellow – orange colour frame with full 17 feet size glass product. But when supplier receive the order, they understand wrong information and send the product of full yellow colour frame with 18' size glass. And when Hannu check the product and does not

accept the products, he will call the supplier and negotiate with supplier, but some supplier they will claim that it is Hannu's mistake and the original order message has been removed. For such kind of suppliers, Hannu has met a lot. Secondly, when requisition information confirms, it is the process to choose right suppliers, during this phase, a huge database is needed as mentioned before, so to handle the database with thousands of suppliers' information, Hannu has to compare and make choice carefully, because everyone wants a trustable, long-term relationship which will avoid lots of troubles in the future. Generally, under the supplier database, it is a challenging job for Hannu because he has to record of each supplier's basic information such as their address, contact information, manufacture capacity, export range, product information and price information. Besides, he has to evaluate each supplier's behaviour with his own standard, which including cooperation history, non-acceptance return times, delivery time, and international background etc. As a result, to handle such a huge database, it always happen careless mistakes and evaluation mistakes. In addition, in the process from Hannu to supplier, it takes very long time to access a stable partnership, but a stable partnership is thousand times better than unstable partnership. So Hannu would like to be careful enough and take long time to observe and evaluate the suppliers in order to find the correct people. Another example is, once Hannu even goes to observe the manufacture and check the quality of materials, he makes order and the supplier promise to send the same quality products, but after the shipment, the arrival products are still in low-quality but he already pays the money beforehand. This trade makes him loss some money but gain a big experience: never trust a supplier's promise till you check the arrival products.

- Problem 3: Quotation complexities, currency differences, exchange rate difference, communication problems, initial contract complexities. Normally, Chinese suppliers only provide the price quotation in the currency of Chinese dollar, CNY. So it is Hannu's responsibility to calculate the currency difference and exchange rate to get the lowest or base price of buying part. If there are mistakes in calculating for the currency, it will cause extra money which can be seen as unnecessary cost. For example, when the exchange rate between CNY and Euro is lowest time during the history, it is the good time to purchase bigger amount of materials even make extra ones into storage. So if purchase a huge amount of materials in the highest rate time, it means extra payment and failure plan. Besides, to calculate the price quotation, usually should add the shipment, tax, over time cost into consideration, therefore a matured international supplier always give a price quotation list with all considered price, a domestic size supplier only offers their product price, they do not know how to find a courier and shipment, so it goes very messed to compare the total quotation prices since for the domestic size suppliers, they have lower price but with unknown

quality and Hannu has to find the courier themselves; But for the international size suppliers they have higher price but with better quality and can be much easier to handle. Then, to communicate with suppliers for the price, there are too much complications with two parties, Hannu uses Email and fax as the most common tools to communicate, because he uses English to communicate with suppliers and English is the second language for both Hannu and suppliers so he thinks that email is the best way in most cases since Chinese suppliers are weak at oral communication and most time they cannot get the idea with normal speaking, but an email plays a better role during the communication since most Chinese suppliers can get the idea in the email. However, the email has also handling time problems. When Hannu is selecting suppliers, he asks many suppliers to send a price list into his email as competitive bidding. Some suppliers will send immediately, some will send many days later and some suppliers need Hannu to call them to ask for the quotation list again then they will. And when Hannu reply them, it takes many other days for suppliers to open their mailbox. Hence the email cycling time is a biggest problem in the communication. At the last, in this section, an initial contract needs to draft, so Hannu has to consider how to make a good contract as well. More detail problems about contract will be indicated next.

- Problem 4: Contract dispute, negotiation disagreement, lack of good contractual arrangements. Since the final supplier has chosen, a certification is required to drawn as a proof of their partnership. Contract content should cover specific additional terms and conditions based on different material to be purchased. To draw a contract, people should always think as specifically as possible; otherwise one tip of information missing can cause a whole purchasing loss. Contract content information varies a lot per contract; disputes are always caused by purchasing policy, material quality, product characteristics, countries own standards, culture, language, time difference and partner's real situation. Expect these contents, Hannu has to be really careful when consider terms of payment in the contract depending on each purchasing project. Generally, choosing the terms of payment is depending on supplier's performance. For instance, for long-term relationship partners, paying 20% of the total payment before materials go shipment and the last payment can be paid after the quality inspection. For the strange suppliers, even they want total payment before shipment; Hannu has to be careful enough to negotiate for the terms of payment in order to reduce his risks. However, sometimes to ensure the quality of products and the guarantee of suppliers, a term of penalty clauses and warranty conditions plays important role in the contract, which helps Hannu to receive the good quality materials as intended purpose and to evaluate suppliers' performances. For example, Hannu can write "The suppliers needs to guarantee that the materials will be entirely new and free of flaws otherwise supplier has to take all the responsibility." Then add the penalty clauses within

the legal system. It is still complicated to define the right terms of penalty clauses and warranty conditions since the country legal system and regulation differences, how to make an effective penalty clause and reduce risks, it is Hannu's work. For the suppliers who do not offer shipment, Hannu has to think the third party's responsibilities into contract and more disputable elements in the contract. However, problems are mainly about whether the contract is complete, holistic and with clear description of product or supplier need. Whether the contract pass legal scrutiny and whether the contract is written with supplier's own legal terms and conditions. Whether the risk is transferred from his part to supplier's part. Additionally, contract is not as simple like several pages as what you see. To draft a contract, Hannu has to handle the same amount of data is as in suppliers' selection process and do much negotiation with suppliers.

- Problem 5: Ordering information complexities, as last sector mentioned, after the contract have been agreed and recorded by each party, the order starts to be placed. In some cases, the order can be seen as contract, but in other cases, contract and ordering is separate thing. However, when ordering from suppliers, it is essential to understand the order information and instructions as specific as possible. In this phase, information complexities are including: order number, clear description of material to be purchased, amount of materials to be purchased, unit price, desired delivery date, delivery destination and term of payment, invoicing address and such relevant things. The purchase order can comprise several order lines with different product to be purchased and all of this information requires to be sent together with delivery documents and invoice. If the information has been executed adequately, there will be less work for Hannu to handle the ordering process. But in the reality, things always go different and difficult than people expected. So be careful and concentrate on each detail information is the great experience for such complexities.
- Problem 6: Delivery problems. At the stage of delivery, many problems occurs: over time deliveries, incomplete deliveries, damaged products, not-matching quality requirement products, unsound packaging, shipment delay, inadequate documents and information labels cannot be read by RFID or barcoding systems. These problems can be temporary or long term, it depends on how clear information flowing and how good a supplier selected. Delivery problems usually make payment tough and complicated. Hence nice delivery performance has become an importance factor to choose supplier.
- Problem 7: Order follow-up problems, poor processing monitoring and reporting, unexpected risks and extra work and fewer solutions for risks. In this order follow-up process, all the related documents should be collected and monitored carefully. It is important to keep track of the information flow of order process since it not only provides evidence of how the purchasing process going but also helps to adjust the suppliers evaluation sys-

tem. So there is no denying that complete data of order monitoring and frequent reporting this kind of information are the golden managerial tools in supervising order flow. However, it is not easy to handle them, to ensure less problems and high – quality order monitoring, it is essential to have a thorough and up – to – date record of each activity and report all this kind of information, which gives chance for all the parties in the supply chain to practice their trust to each other and cooperation. In this process, many risks may happen without planning, or so-called unexpected risks, for instance, delivery troubles, not matched products and over time processing. To solve these problems, the fast response and effective solution are far less enough for the risks, a mature monitoring should report the risks immediately and send to each party in the supply chain then analyse the reasons and solutions for such kind of risks in order to avoid it next time. Therefore, in reality, to follow the purchasing order is more difficult than create an order.

- Problem 8: Payment problems. Payment terms not matching, wrong bank accounts, unsafe money transferring, unsuccessful money transferring, bank differences and exchange rate changes. In the case, only long-term relationship partners give credit terms. For other suppliers, a letter of credit (LC) can guarantee payment to a supplier in a best way. However, in China, few suppliers have such kind of system. And even through it is a safe way for payment; essentially no one uses it since it is over complex and time-costly thing. Hannu would like to take long time to develop a trustable relationship with supplier and pay directly to their bank. But if Hannu pay by himself, there are many troubles with money transferring as mentioned above, many times Hannu pay the money to certain supplier's bank account, but for some reason, the money cannot reach the account and returns back. Hannu tries many times and still cannot make it. The suppliers are urgent to receive money and get angry to him and think he's not trustable at all. Hannu has to explain again and again and shows evidence to supplier how it is. Besides, since Hannu uses international bank account and some suppliers use Chinese domestic bank account, there is no way for money transferring and even some suppliers use Chinese bank's international credit card, bank has limit to international money transferring also. Sometimes the careless can make different amount of payment which differs the terms of payment and sometimes the exchange rate changes suddenly may make a little lost for buyer.
- Problem 9: Problem products, repeating order problem, non-acceptance products and supplier evaluation complexities. When products arrives, the quality inspection must be serious and keep on high standard, so Hannu should check carefully the products comparing the specifications such as quality, quantity, time, documents and if there is damage occurs in the delivery. If there is any flaw in products, they will be marked as “non-acceptance” then sends back to suppliers. This means failure purchasing and



Hannu has to find out what reasons make this, is this supplier competent enough? When return the product, Hannu has the responsibility of the shipment. So if suppliers admit their fault and receive the products, they will adjust the new requirement or refund the money. But if in the quality control Hannu does not find any problems and afterwards he finds, then he will take all the responsibility for the lost. So again a careful inspection is essential. Besides, repeating order process also occurs problems quite often, if the suppliers make slight difference in products in repeating order, although the difference is little, but for customers, slight difference is difference. Therefore, in the quality control should refuse slight flaw or little difference. Every repeating order should be exactly the same with previous order. At last, to evaluate suppliers, Hannu has to update his supplier database frequently and mark supplier's mistakes as much as possible.

### 4.3 Reasons and expectation from the company's point of view

In this sector, all the data collected are based on the interview with Markus and Hannu, since Hannu has over six years purchasing experience in China and he can speak some Chinese, so through the interview with Hannu can provide a solid opinion which is representative enough especially for Finnish SMEs purchasing from China. Through recording the useful comments, the following results are the summarized list of reasons that makes the complexities and problems in Suomen Glasluckan Oy party's point of view.

1. Information itself. Essentially, information is a form of communication. It has the properties of uncertainty, invisible and variable. To manage an information flow, every single tip of information itself is difficult thing. If the transferring information or communication is unclear, slow and limited, no one can ensure a successful information flow. So the quality and speed of information is the first reason of complexities. In reality, firstly Hannu has to be very clear that what to do and what he need and be careful enough for the items especially numbers, units, time and location. Then quick response and fast transferring time is important. Same thing he expect from suppliers.
2. Language difference. As Hannu said, the second reason for the information flow complexities is the language difference. Although English has become the most common used business language, in China, to communicate with suppliers in English can be a big problem. If a supplier marked "Can speak English" then it might be only 50% - 60% of the communication can be done successfully in English. If a supplier be marked as "good English" then it might be 80% of the communication can be done in English. Moreover, to have good communication with suppliers in China, English will never be the first language to use. However, it is buyer's responsibility to find suppliers, to talk, to negotiate, to make agreement with suppliers. If you can speak Chinese, or even you do not speak Chinese but you can follow other Chinese's conversation can even help a lot and everything can be done hundreds

times easier. Or if you can find a second-tier communicators who can coordinate each part communicate, things can also improve a lot.

3. Culture difference. To communicate with Chinese or to find Chinese suppliers, people must know some concepts such as guanxi (connections, relationships), face, harmony, bargaining behaviour and authoritarian leadership. Besides, Chinese culture often depends on individualism and confrontation, Finnish culture is similar but with big difference. Without understanding the culture concept, there will be much trouble for people to understand, and to communicate with the suppliers. As Hannu said, Chinese people are really willing to do business with foreign companies, but the culture difference is a big barrier. As a result, before doing business, to understand a little bit knowledge of Chinese culture is essential.
4. Social Network: this item can be listed as culture difference but somehow social network is much more important than other cultural thing. As Hannu said, communication and social network are the most important two things for doing business in China, so it is essential to have a trust person who speak Mandarin, Cantonese or English, this person will give you more help than what you expect. And if you know the seller personally, you have been doing business with them together or you have trustable friend who know the sellers, it is much easier for your business going since in China, a good guanxi can be more useful than other business rules. The key idea of doing business in China is that it is the people who make you doing business successful not the process that make you doing business successful. And Hannu also said that it is the reason that the long-time experience in China makes him know a lot of trusty people who play key roles in Hannu's business in China. As a result, it is better for you to have trust person in China, otherwise, there will be no chance for you to complain that doing business in China is so hard.
5. Technology differences such as specification, quality controlling, certification, standards and so on. In China, many suppliers say they do good quality, but the real quality level differs significantly depending on different suppliers especially in small suppliers, since Finland is between the highest standards countries, same with Germany, Scandinavian countries, but China is between the middle standards countries. The regulation, business laws, tariffs, market limits differ greatly between Finland and China. So if someone thinks that good quality in China is the same standard with it in Finland, then he will be totally in trouble. In addition, to do business with smaller suppliers, usually there is no agreement, hence it is big risk and you have to be careful enough.
6. Lack of professional personnel and skilful experience. As mentioned before, the levels of suppliers differ a lot between each supplier especially smaller ones. Some suppliers supply domestically, some suppliers supply with international experience. Many suppliers have great manufactures and abundant capacity. However unexpectedly they do not know how to find containers and how to do export business. You have to show them step by step or you have to find courier by yourself. Since they have good performance in domestic market, the domestic demand can satisfy their supply to some extent, they never think to be

international, when foreign companies come for sourcing, they have no experience of how to do business internationally even though they want to sell their products.

7. Repeating order problems, it is hard to make repeating order exactly the same with previous orders when purchasing from China, as example shows, Hannu has purchased a container of glass with yellow frame, but the suppliers give him orange frame on repeating orders, this confused Hannu a lot since a little difference for customers is difference, though it is not hard for Hannu to negotiate with them and change the products, for customers it causes big negative comment on your company. So be careful enough to make sure that every certain size, colour, quality, quantity of material is exactly the same with sample and previous orders.
8. Invisible process. When you make order and contract with one supplier ordering certain kind of materials, they give you the sample and you accept the quality, but during the real product delivery, they might purchase the same kind of product from second-tier suppliers in order to save the cost. However, the products provided from second-tier suppliers are in poorer quality. But for the buyer, you cannot see how deep manufactory your received products are come from and what kind of quality it differs from the sample. Suppliers often use from other supplier's products; this process is invisible for your buyers.

Based on this list, Hannu expects more skilful person who can play as a bridge role for him and Chinese suppliers in China. Besides, he wants an employer who can work as a supervisor and coordinator in China. This person will help communicate with Hannu and go to visit suppliers face to face, to inspect the processing of Chinese suppliers and to go to negotiate with suppliers easily when trouble happens. However, he cannot find such a suitable person right now so he expect Chinese suppliers themselves improve their international horizon and improve their quality controlling and keep every delivered order same with buyer's specification. Besides, Chinese government can strengthen the relevant regulation and legislation to monitor Chinese supplier's processing and to help international buyers to protect their benefits.

#### 4.4 Reasons and expectation from the supplier's point of view

This sector is done based on the interview with one export manager in one of Suomen Glasluckan Oy's supplier company in China; this company is a glass manufacture factory and locates in Kunshan city. This company has established for over 15 years and started exporting business from year 2004. According to Hannu's supplier database, this company is on the good performance list and have more than 5 year's exporting experience. So it is a good example to do interview with. In addition, the interviewee Mr Cui is an export manager with more than 20 years working experience in international trade field. His opinion can be symbol of most China SME suppliers' situation. So the reasons from supplier's point of view are:

1. Information itself. Quite same with Hannu's point of view. Mr Cui also told that information itself is a big complexity element in each situation. If purchasers communicate with suppliers in English, there are

- too much potential information complexities in the follow processes. Firstly, English sentences are comprised with words and phrases, which can cause too much ambiguity. Each person has different way to understand and use a word and a phrase especially when English is as the second or third language to communicate. Secondly, there is no centralized law or terms in the contract showing that who will take the responsibility when the problems are caused by misunderstanding of English. Thirdly, for most of the SME suppliers, they use very traditional way to record and transfer the information flow; they trust their personnel rather than system. However, they receive hundreds of emails and calls every day, the human being's brain is not like a bar-coding system, which can make zero mistakes in identifying the information. Hence, man-made mistakes are hard to avoid in processing the information flow.
2. Huge competition. Currently, most SME suppliers export clothes, machinery products, electronic components, metals and other resource. However, there are so many small manufactories of those products in every part of China. In one small town, there might be over two hundred similar small factories. And there might be over three hundred illegal operating ones which mean that those factories are operating without legal certification. They produce same or lower quality products and sell lower price. Their factories are hid in some isolated places where normal people cannot find them easily. It is quite common in China that there are illegal small factories in isolated places. They do illegal producing activities till was founded by police. These illegal manufactures offer lower quality products with cheaper price. Some big suppliers also choose them as subsidiary suppliers when they cannot meet the demand in the market. For normal SME suppliers, their labour cost and fix cost are increasing year by year, if they raise price for some extent, they might lose a group of customers right away. However, the competition is not only from domestic market but from international market. Nowadays, the labour cost is increasing while the Asian developing countries such as India, Vietnam, Thailand, and South Korea are exporting same kind of products. In the recently years, Chinese exporting rate goes slower than before. As a result, to keep stable in the global market, Chinese suppliers especially SME suppliers must find the way to keep competitive strength for customers and try to reduce the cost in the same time. Hence, some suppliers aim at international market with domestic capacity. They first find a customer then try to get solutions. Under this circumstance, most suppliers make the strategy that the lowest cost is the fundament of supplying. Therefore, it is not a surprise to see that the quality of products purchased from SME suppliers varies with a very unstable scale.
  3. SME suppliers cannot make full use of their trade right. According to Chinese government's regulation, to apply for an export right, a company just need 50,000 CNY as register capital. But to apply for a right for legal tax-paying, there are only two ways. One is to reach 18,000,000 CNY for total sales; another ways is to own a company which is with 5,000,000 CNY as register capital and more than 50 emplOyers or to own a brand new retailer company. Without reaching such two methods, one company could not get the benefit of tax re-

bate policy. For this reason, most SME suppliers choose bigger company or export forwarding agency to help exporting. Though by this way most SME suppliers can get tax rebate quickly and accelerate the capital flowing. However, the cost and complexities make the value of product reduce rapidly. Therefore, most SME suppliers' motivation and enthusiasm get limited so that many manufactures only focus on manufacturing but not exporting their products.

4. Chinese suppliers themselves have relatively poor condition. As Mr. Cui said, currently, most Chinese SMEs are still in the growing stage of operating their company no matter in manufacturing, pricing, marketing or managing the company. Most SMEs only aim at short-term benefits not the long-term development. Besides, most SMEs start international business independently without cooperation and their global business are still in initial phase. In such short developing time, the professional knowledge and specialists are in extreme shortage. For example, they manufacture a product, but they have no idea how to do payment internationally, how to choose term of payment, how to use the exchange rate and how to make the price. Hence, it happens lots of business lost due to cheated by foreign companies. Nevertheless, most Chinese SME suppliers' quality of products is in very unstable level and the undeveloped transportation method in China make the damage occurs quite often. Most companies do not have their own design and research patent, they only produce depending on incoming sample and most methods they use for marketing is pricing. The blind pricing can make the market unbalance easily and government may make an anti-dumping limit which might make the company lose all its international market in one night. In distribution channels, most suppliers sign a contract which is unchanged for years with distributors and purchasers. In this way most SME suppliers are very easy to be put into bad situation. In addition, Chinese suppliers are also in low-level customer service. Hence the whole information flow is in undeveloped condition not like Western countries which have holistic information integration system that combines manufacture, material supplying, distribution, wholesalers, information feedback and customer service in a complete network. In one word, development makes the information flow successful or not.
5. Difficult to get finance bailout for SMEs. Although SMEs are playing important roles and more and more policies are making to assist SMEs. However, so far it is very difficult for SMEs to get financing bailout from relevant organizations. Most SMEs hard to get long-term loans and money support. To develop the company, it needs a lot of money. But to get the loan, it takes time and barriers to reach and the companies who get loans are in low-level of satisfaction. Hence most SMEs are in tight capital flow and slow step to develop the companies.
6. Chinese cultural concept. In suppliers' part, Chinese guanxi concept influence business to a biggest level. For example, almost all suppliers want to be close to customers without unexpected parties as barriers. A small manufacture needs export forwarding company to pick up their products, put it into storage, go to custom inspection and contact shipment. However, a normal export forwarding company usually is controlled by government. Hence if the delay, damage, risk are caused

by export forwarding company, they always push the responsibility to others and as a small manufacture, it seems to be ask for trouble if it try to deny a government controlled company. So that most small companies need to establish very good guanxi with customs, export forwarding companies, shipping companies and so on in order to get less trouble in their business. Besides, not as other countries such as Japan, Thailand, India etc. They offer their best quality products to foreign countries and international market. The domestic market has lower quality ones. China does not have such rules that you can find better quality products in the exporting market. As Mr. Cui said, the best quality products are always in the domestic market, which is really hard for foreigners to find. One really needs to keep track step by step then he can find the best suppliers. Otherwise, he has to have good guanxi with local people who know the owner or employers in factories which produce good quality products.

In Mr. Cui's point of view, most Chinese SME suppliers are really willing to do business with foreign companies, they are motivated to learn knowledge of international business and they spend lots of time and money to do research and development. However, Chinese SME suppliers are still in underdeveloped situation, they have too long way to go. China start opening its market on 1987 but that was the time for government to be opened. Most SME companies and private companies start their global market during 1998 – 2005. With only ten years' experience and such little assistance from government, the way to be developed is tough. But Chinese suppliers show to the world that they can do a better trend in the future. Hence, Chinese SME suppliers they are essentially modest and honest to do business. If foreign companies think they are not good, they will do better at what they want. They do not have special expectations for their customers but hope their customers will be patient to cooperate with them and give more advice, which will be very important for their improvement. Besides, they also hope Chinese government can make better beneficial strategies for SMEs such as better tax system, less limitations and more detail regulations. To keep Chinese suppliers' competence strength, government will play a more important role than purchasers.

### 4.5 Comparison and evaluation of two partners

As been showed above, there are similar reasons and different reasons for the complexities and problems. Both Hannu and Mr. Cui list the information itself is the biggest problem and they both consider the information is the basis of communication, which is the key and direction for doing business in two different countries. Especially when each part uses English which is the second-language for both parts, there will be language complexities exit with information complexities. Hannu would like to use written form English since Chinese suppliers can understand better when use written English. And most Chinese suppliers are in below-average level English skills, so that to handle the language barrier is the first lesson to do before information communication. Except that, in essence, infor-

mation is an invisible thing that no one can touch it and change it manually. To solve the information flow problems, be carefully and be clear should be kept in mind all the time whenever you handle the information especially confirming the specifications when there are too much items need to handle. Nevertheless, every party in the supply chain expect the information flow is clear and fast. Hence the quality and speed of the information must be qualified before sending the information. For example, in each message, tell others what exactly you want as specific as possible, how much you need, by which date you expect to get, what way of payment you prefer. Whoever is sending the message, keep in mind that the content is clear that everyone knows what you want. Besides, send messages as fast as possible. Since every partner desires a fast transition of information in order to remain effective. So keep information qualified and on time is also the key of information communication. Besides, the culture difference is another big problem for Chinese suppliers and Finnish purchasers, Finnish business cultural and Chinese business cultural is totally different, China has long history and culture. Chinese people started to do business thousand years ago from Qin dynasty, till now Chinese business are influenced by old business concept. As Hannu and Mr. Cui said, guanxi is the most important cultural concept in China. So to have relationship with Chinese people is a useful starting point. Chinese society is complex and diverse, and most Chinese are traditional, others may be very ultra-competitive and open. Knowing about guanxi and face is certainly useful, but this knowledge is not applicable to all the Chinese people that they encounter. Multinationals should also be thoughtful about the differences between the economic concerns and social behaviour of Chinese people, for the reason that the social behaviour of Chinese is likely to be driven by traditional customs and values, and their economic behaviours are likely to be influenced by current social philosophy and recognised characteristics. In social communications, being sensitive about Chinese norms and values can help to avoid misunderstanding and unnecessary annoyance. In economic decisions, however, considerations depending on cost-benefit examine and economic rationality will help people a lot to do business in Chinese society. Thirdly, an important reason concerns to the problems is the professional skill and knowledge. This is also the reason makes Chinese suppliers in poor condition and makes foreign purchasers feel uncomfortable. However, knowledge is the basic factor to drive a company to develop. Mr. Cui said that most Chinese SME suppliers are in poor condition since the slow development. The essential reason for the slow development is the lack of knowledge and experience. For example, if every company owns one skilful worker who is professional in international trading and has good English skills then all the problems can be analysed and solved in a satisfied way. Otherwise, if a foreign company has one professional employer who can speak fluent Chinese, things will be much easier then. However, in currently situation, none of SME suppliers would like to pay high salary to skilful workers who are also in shortage in employment market. As one of Chinese Premier Master said, skilful people is the drive power of productivity, but very few companies would like to train a student to be skilful so that most students who have knowledge cannot get job in China. Hence the unbalance of employment is a social problem in China, which is also a reason for the slow development of

SME suppliers. As what Mr. Cui said before, there is huge competition in China internally and externally. In domestic market there are many illegal small manufactures working without registration. But Chinese government inspect them with blind eye. If they want to keep rules and kill those illegal manufactures, they can do it quickly while government knows that one small illegal manufacture can solve over 50 people's employment problem. So the unbalances of the competition exist in Chinese domestic market which concerns to a problem for SME suppliers to develop also. Lastly, the reason for the complexities is the technical difference in Hannu's words. What are the technical differences? For example, the difference of currency, exchange rate, time zone, product unit, standards, regulation, legislation, distribution channels, government control and quality criteria. These things exist originally and cannot be changed initiatively. No matter what country people purchase from, there is technical difference. China is step by step improving its technical standards near European standard. However, Hannu said that Finland is in the highest standard level same with Germany, Sweden, Norway and Denmark. If people go to Italy, the standards are already in big difference to some extent. China's standard is among the middle level countries but in some aspects China has higher standard. Nonetheless, if one buyer wants to purchase from other countries, he must adapt the technical differences in order to make successful information flow otherwise there will be too much complexities. To conclude, if two partners desire a good information flow, the language is the first barrier for communication, followed by information quality and cultural concepts. After these elements, the differences of companies' conditions, the difference of technical issues are essential factors and reasons for the problems. Besides, all the reasons can be divided into three aspects: Communication problems, unreliable suppliers and differences problems. Based on these analyses, solutions and recommendations will be created on next chapter.

## 5 RECOMMENDATIONS AND CONCLUSION

### 5.1 Recommendations from former analysis

According to the information flow map drawn and problems listed with analysis, three main reasons for the complexities and problems were concluded on last chapter, communication problems, unreliable suppliers and the differences. In this section, three solutions and recommendation will be listed depending on each reason for the problem.

1. Solution for communication. Actually there are many methods to improve the information flow complexities caused by communication. But here only the best way will be indicated. For communication problems, a permanent representative in China is the optimum solution. This representative should have no problem communicating with both Hannu and Chinese suppliers so that the language skill is the first criteria for hiring such person. The English, Finnish and Chinese speaking or at least can listen Chinese or Finnish is the minimum skill for him. Besides, he can be



employed or cooperated with Hannu. The responsibilities of this person are mainly to communicate and coordinate with Hannu and suppliers, to visit the Chinese suppliers and to monitor the supplier's processing. Of course an experienced person with good social network is highly required. The desired condition is that Hannu gathers information of purchasing specification from Suomen Glasluckan Oy and that feedback information from delivery and arrival products then transfer all the information to this second-tier person who will be permanent working in China to contact, select, visit, and inspect the suppliers with the guidance of Hannu. This person must be competent and professional in international sourcing in order can help those manufactures without knowing how to do export business. The advantages of this solution are that a second-tier person between purchaser and supplier can play an important role of coordination and communication and be much closer to suppliers. The language problem can be solved also to a big extent which will be essential for the information flow complexities. Besides, this person between the buyer and suppliers exist can make Hannu free from going China to visit, negotiate, make contract, monitor and solve problems with suppliers.

When Hannu give purchasing specification to this person, he will do all the jobs instead of Hannu, he will help suppliers find shipment and before delivering products, he will go to the Chinese factories to inspect the products and monitor suppliers' processing in such way can improve the quality controlling work from China's side and make double security for the quality. Lastly, this person can also help Hannu gather suppliers' information, samples and manufacturing information in order to help evaluating suppliers. However, the disadvantages of this solution are that this second-tier coordinator is close to suppliers but is far to customers and who in the middle between purchaser and suppliers make the process longer and more complicate. For instance, if Hannu is careless and make mistakes in the purchasing order, this person receive the wrong order and contact suppliers as Hannu's wrong order, when Hannu finds there is a mistake, it will take longer time and more trouble to correct the wrong information. Moreover, the huge amount of information from Hannu to this person will be an excess process of information handling and will make another person like Hannu to see and check such a huge amount of information. If he makes mistakes because of careless then Hannu's careful work will be in vain.

In addition, to find such a person who is not only professional in language but also in international purchasing knowledge is very difficult. He must be trustable for Hannu and without any communication problems. To find such a people may take long time and to establish trustable partnership will take more time. However, if Hannu would like to be patient then he will harvest more than his cultivate.

2. Solutions for unreliable suppliers. There are many recommendations can help improving finding trustable suppliers and establishing long-term partnerships. But the best way is difficult to define since only to put them into practice can know which way is the most suitable one. As Hannu said that the main behaviours of unreliable suppliers are: not-matching quality arrival, changeable repeating order, unstable pricing, not obeying the contract, not dare to take their own responsibilities and fake information for their companies and products. Therefore the first recommendation for how to find a trustable supplier is that go to the manufacture spot. Many suppliers send their samples to Hannu but that's not a good way. Only to visit the manufacture spot can one know how the producing condition is. The poor condition ones will not give you stable quality products in a general level. Check their manufacturing capacity also if possible. If there are huge amount of products in storage then it might means safe signal. If there are few products in the storage then it can be risk signal since the manufactures with low capacity always do the work that deliver you low-quality products from other suppliers.

Besides, in China, location is a significant sign for purchasers, if one apple tree suppliers invite you to visit their plant, then in most case that the whole village is abundant of apple trees hence there will be more than that suppliers in the same village so that after visiting the one who invite you, stay in the same place and try to observe the clue for other suppliers. For example, you want to buy apple trees, if you find an apple store then go to ask the owner where he supply the apples from. Get contact from there and it will be easy to find other suppliers. In this way, compare at least three different suppliers in the same place then you will handle more detailed information of apple supply in that place, which kind of apple tree is good, which is bad. Where offers cheap ones and where can buy high-quality ones. After that, the last job is to choose the best supplier which you like best. To conclude, the method of how to find a good supplier is that if you want to buy one product, go to the suppliers place and stay there for a certain time. Visit more suppliers, talk with them then compare with each other. The final chose supplier can be more trustable one than the initially contact one. Second recommendation for finding a trustable supplier is to visit the special sourcing internet such as alibaba which is a B2B internet concentrating on sourcing in China. You can find clearly each supplier's reputation and supplying behaviour on its own page just like B2C e-business internet such as Amazone. Read the comment on supplier's page then make decision.

Some people might recommend that contact the special intermediary agencies that can help you find good suppliers. For example there are a lot such kind of companies in Hong Kong that offer you such kind of selecting supplier service. This suggestion is not recommended here since you pay them money but they do

not do job. They use the strategy that suppliers bidding for their recommendation. Suppliers who pay them higher money will get used to their recommendation list to customers. So never trust those Hong Kong intermediary agencies. The recommendation for how to establish long-term partnership is to create stable and updated vendor evaluation system. Gather each business activity as detail as possible, not only bad activities but also good ones. When there is negotiation process, show the recorded business histories to suppliers can help to some extent. However, this system must be updated frequently, in this way can help you to pick up better suppliers and establish long-term partnership.

3. Solution for difference problems. The differences are fixed elements. Cultural concepts, countries' standards, regulations and legislations, quality controlling criteria, currency and exchange rate. These things may change somehow but not change as what you plan. To solve the differences problems, it is impossible but it is possible to improve the differences complexities. The recommendation for such problems same with the information flow problems is to use the information technology systems. Many information technology systems are now used by big companies and those technologies essentially play a useful role. ERP, EDI, LBS and RFID, ERP software can help purchasers and suppliers to improve the differences in planning phase. It can make information consistent and stable from Suomenglaslukan Oy to Hannu and from Hannu to suppliers. The best way tend to the solution is that all suppliers and Hannu use the same ERP system in order to unify the specifications such as the number, unit, date, quality and delivery, term of payment. The system ensures the information flowing more accurate and specific. And information system makes immediate information transferring. If two partners established same ERP system, one can input order specification into system with highly accurate standard. When order specification confirms, system will save and send order to suppliers immediately. On normal office time, supplier can receive the order with consistent form of order. So the same information from purchaser will be sent to suppliers with same reference. However, it rarely come that purchaser and suppliers use the same ERP software.

Usually, a big company has around 15 – 50 suppliers and even more than that. It can be that over 50 suppliers use more than 100 different kinds of ERP software hence each has their own form or interface to access. It is hard to do interaction with different interfaces. With this problem, EDI can do the document transferring with different standards, which in turns will help any kind of B2B interoperability. Through EDI, all the document information will be transferred with original content with one button. Even with different ERP systems, it can go with different format. Besides, the currency difference and exchange rate can be calculated automatically during the payment period with such software also. Furthermore, LBS, GPS and RFID can make delivery pro-

cess more visible for both purchasers and suppliers. Buyers can track delivery with a different time, place and person. The most ideal situation is that Hannu can establish a huge data warehouse with different information technology systems supporting. All his suppliers use the same ERP system and can log in with different computer with their own user name and password. All the information from purchaser to end-customers should go through the data warehouse. In this way, all the information will be centralized. Every party can just send and communicate with other parties via computer system. For example, Suomen Glasluckan Oy writes a purchase order on the ERP system, it immediately goes into the central data warehouse. Hannu and his suppliers can see there is a new order from Suomen Glasluckan Oy and the order does not even need to be collected and resent by Hannu. All the suppliers can bid directly from internet. Suomen Glasluckan Oy can check each supplier's information directly from central system and choose the supplier. When the purchasing process start, all the information flow can be done in the centralized system and buyer can interact with supplier within the system. The delivery and quality control can be also seeing in the system. The non-acceptance product will go with just clicking the mouse. However, to create such big system needs huge investment and long time. The suppliers in the system must be trustable and long-term partner. Besides, to have such kind of system is not one company's job. It needs all parties' participant and cooperation. Since Finland has been to the advanced information country and most matured or SMEs have used advanced information system in business field. So let us hope this kind of idea will come true in a not so long time.

### 5.2 Recommendations from China specialist.

This part's recommendations are based on China specialist Johanna Heikinen who has been working in helping Finns doing business in China for quite many years and she owns a consultant company especially for providing the solution or recommendations for Finns who are doing business in China. She had been helping lots of Finnish SMEs doing sourcing in China so her recommendation will be worth listening.

In Johhanna's point of view, there are numerous reasons for sourcing in China such as cheaper material and manufacturing costs, faster access to new technologies or not available resources in the home country and some fields of industries such as electronics components, telecommunications equipment, textile products, shoes, and chemical products have currently developed productivities and the whole manufacture network is well structured and efficient. No matter what reasons might be, a careful analysis of the sourcing market is recommendable. Since though it is well known that the labor costs, material costs in China are much lower than in Finland, but the production efficiency is lower than in Finland also. The higher the quality supplies, the higher the manufacture costs. Johanna pointed out

that the location of the supplier is very important on the total costs. Regional principles can vary conspicuously, and the huge land makes the distances really far. If one decide to purchase from complex China he should consider many objects not only the low price since as Johanna said that Chinese manufacturers sometimes would like to raise the prices randomly and appeal to reason of “misunderstanding” during negotiations or ask for some extra costs suddenly appeared during the procurement process. Johanna also told that she has kept hearing that all the documents can be faked in China and she has seen some faked documents, but one of her friend had done that without any problems in a very clever way. To ensure that the factory providing accurate information on their products and capabilities as well as references of supplying abroad, her friend came up with an idea to ensure the reliability of the factory:

1. Check the electricity consumption.
2. Check the water consumption.
3. Check the customs duties paid.

Three simple things will help you get a lot of information on the factory operations. This is just one example of how to make a background inspection on the potential supplier. To be the China sourcing specialist, you should smoothen the pace and make your customers know on the side to be specialists themselves. There is another example that a Finnish company found a supplier in a trade fair and made an order without checking the company's background first. The company thought that the quality was same to the information as showed in the trade fair but when the company received the products, there was nothing similar to the sample given in the trade fair. Therefore an audit visiting to the manufacture is highly recommendable before making the order regardless of general information on the supplier is rather easy to gather.

About the technical differences, Johanna said that though China entered WTO there is still protectionism in some industries. China has developed its own technical standards which cause trade barriers for Finnish companies. But nowadays Chinese government is encouraging Chinese industries to use international open standards and an increasing tendency of Chinese suppliers started using international standards but in some industries they have not been adopted. Taxation policy in China is stressed. Sometimes the return of value added tax takes a long time causing a trade obstacle to the customer. However, this problem only exists among those companies that have official presence in China. The recommendation for these technical problems when dealing with government officials is good personal relationship which really helps solve these things. However, the lack of intellectual property rights is one of the biggest problems in China. Everything can be copied without legislation limit there. The relevant legislation in China has been developed slowly. Currently there is no good solutions for such problem but Johanna think that in the future, the competitive advantage will be created with other things than patents like new products and features are developing in a fast speed.

Furthermore, sourcing from China do need specialists of local market. However, the process of building reliable supply network is not that mys-

tical than in any other country. Language problem can be solved by using skilled interpreter. By sorting out the potential suppliers and by making a proper factory audit can find reliable suppliers and by paying a personal visit to the manufactory is also essential to check out suppliers and evaluate their capacities as well as by using the win-win strategy to establish stable relationship with the supplier. Negotiation process may take some time as the Chinese tend to change the terms during the negotiations. But good personal relationship with the supplier can be a great asset in negotiation table.

To conclude, China has improved its production capabilities and more emphasis has put on the quality during these years. The relevant regulations and standards have also been closer to international principles step by step. However, the information flow complexities and problems of sourcing in China are inevitable. But a careful consideration on each information item is required on each purchasing process. A good relationship with some key Chinese people will be helpful a lot and a skillful interpreter can help solve the communication problems and can even help visiting factories and monitoring suppliers' processing sometimes can directly negotiate with suppliers. Investment of information technology systems will solve problems essentially in a long run. When you have done these suggestions, the luck will stand by your side. And to succeed in solving the information flow problems sourcing from China, the company must follow and adapt best practices and customer expectations.

## 6 SUMMARY

With the purpose of determining the purchasing information flow for Suomen Glasluckan Oy and optimize these problems, this thesis initially analyzed the information flow of Suomen Glasluckan Oy in the method of interview its key personnel Hannu Peltonen. In this deep interview, a detailed information flow map was drawn process by process. And all the complexities and problems existed in each process was found out also. After defining information flow map and its complexities, the thesis was followed by another interview with export manager from one of Suomen Glasluckan Oy's Chinese suppliers. Through comparing two interviews, the reasons and expectations from each party's point of view were evaluated and analysed. The main reasons and expectations concerned to problems was listed and based on the three main reasons analysed from the interviews, three solutions to improve the information flow complexities and problems was sorted out. And lastly, a third interview with a China specialist helped find out more practical suggestions and recommendations tend to complexities. The recommendations from both former analysis and China specialist were significant for Suomen Glasluckan Oy to improve the information flow complexities and Suomen Glasluckan Oy's sourcing case is a representative case for similar Finnish SMEs that sourcing from China.

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LIST OF TERMINOLOGY

SMES	Small and medium enterprises
SCM	Supply Chain Management
POS	Point – of – sale
JIT	Just – in – time
EDI	Electronic Data Interchange
ERP	Enterprise Resource Planning
RFID	Radio Frequency Identification
ICT	Information communication technology
LC	Letter of credit
B2B	Business to business
B2C	Business to customers
LBS	Location Based Service
GPS	Global Positioning System



