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Supply Chain and Logistics in Chinese Eyeglasses Industry

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<p>Abstract</p> <p>The aim of this thesis was to learn how supply chain works within eyeglasses industry in China. Background research was done on supply chains. There are two questions we should be pay attention to. The one is the definition of supply chains and how they operate in eyeglasses industry and the other is how to manage the supply chain.</p> <p>The target of this thesis was to find as many problem cases as possible and to bring them out in the conclusion part of the thesis. The main purpose of this thesis was to study how the supply chain in Chinese eyeglasses industry functions and how to develop it in the future.</p> <p>This thesis views the development of Chinese eyeglasses industry, and it includes also a typical case from Chinese optical markets and shows the reasons for its success.</p>			
Keywords eyeglasses , import,export, development.			

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Appendix

1 Introduction

Eyeglasses industry has developed rapidly in the past decades in China. There are over 6,000 large-sized and medium-sized eyeglasses manufacturers and over 30,000 optometrists and optician shops with large capacity in the country. According to the latest official statistics, Chinese level and volume of eyeglasses consumption continues to grow rapidly. It is estimated that more than 400 million people need to wear eyeglasses. The demand for spectacles is over 100 million pieces a year on average, which makes China the biggest eyeglasses market in the world and it possesses a huge market potential. China is not only the world's largest potential eyeglasses market but also the leading eyeglasses producer. The total China's output value of eyeglasses industry reached \$30 billion in 2009 and \$34 billion in 2010. The output occupies 80 percent of total production of the world in middle-low eyeglasses market. The rapid development of eyeglasses trade is a result of the outstanding advantages of domestic market. (Chinese eyeglasses magazine, 12.2010)

The original purpose of this project was to dig information about Chinese eyeglasses industry and study if some Finnish eyeglasses enterprises would be interested in co-operation with Chinese eyeglasses enterprises. This study should also help to create and build new co-operation relationship between the import and export of eyeglasses industry within eyeglasses supply chain in overseas markets.

In addition, this thesis analyses the development of Chinese eyeglasses industry. At the same time it also describes the history of eyeglasses.

In the end of this report, there is a case of Dan Yang optical market which is the biggest eyeglasses market in China. The advantages and disadvantages and the reasons for success in Dan Yang optical market were analyzed in order to understand the Chinese eyeglasses industry and supply chain.

2 Eyeglasses Market and Industry in China

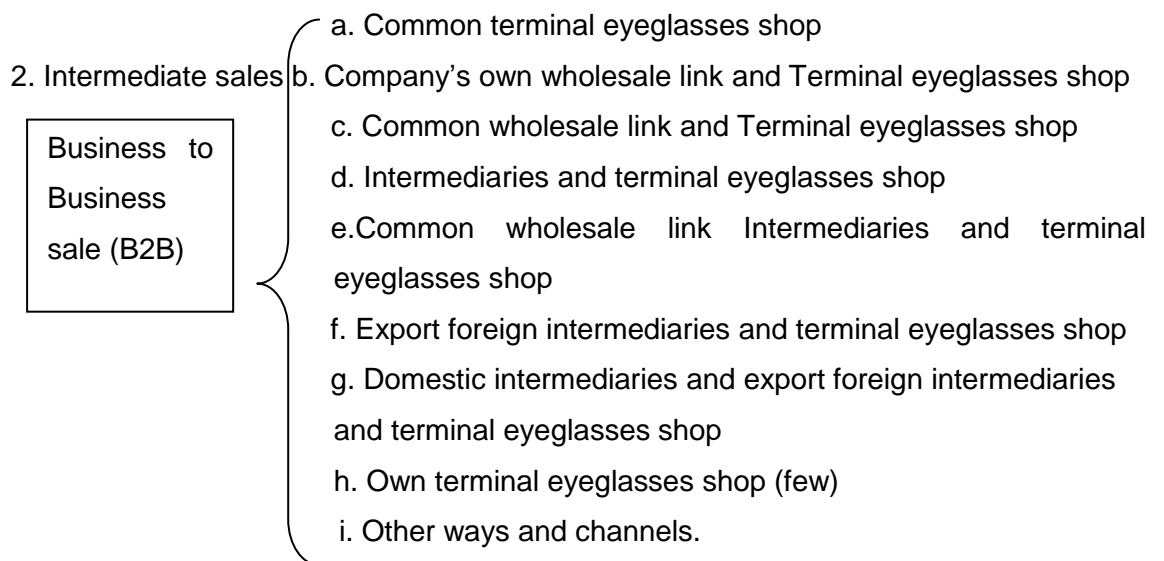
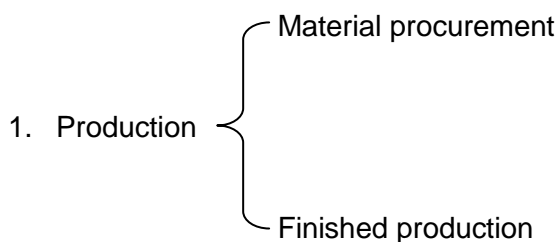
2.1 Classification of Eyeglasses

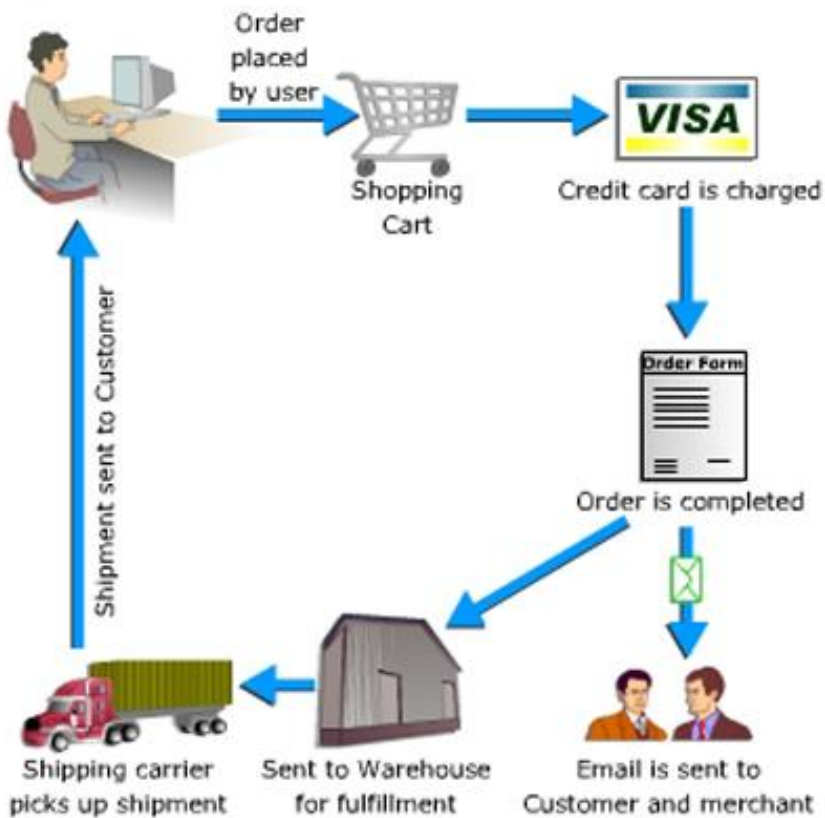
The different eyeglasses functions are: sunglasses, reading glasses, optical glasses, contact lenses, lenses 3D glasses, ski's glasses, children's glasses, sports glasses and other labour protection.

The product categories, parts of an intact eyeglass, can be divided into socks, frames, glasses accessories, spare parts, contact lens care products, contact lenses, glasses boxes, glasses care products box/bag and etc.

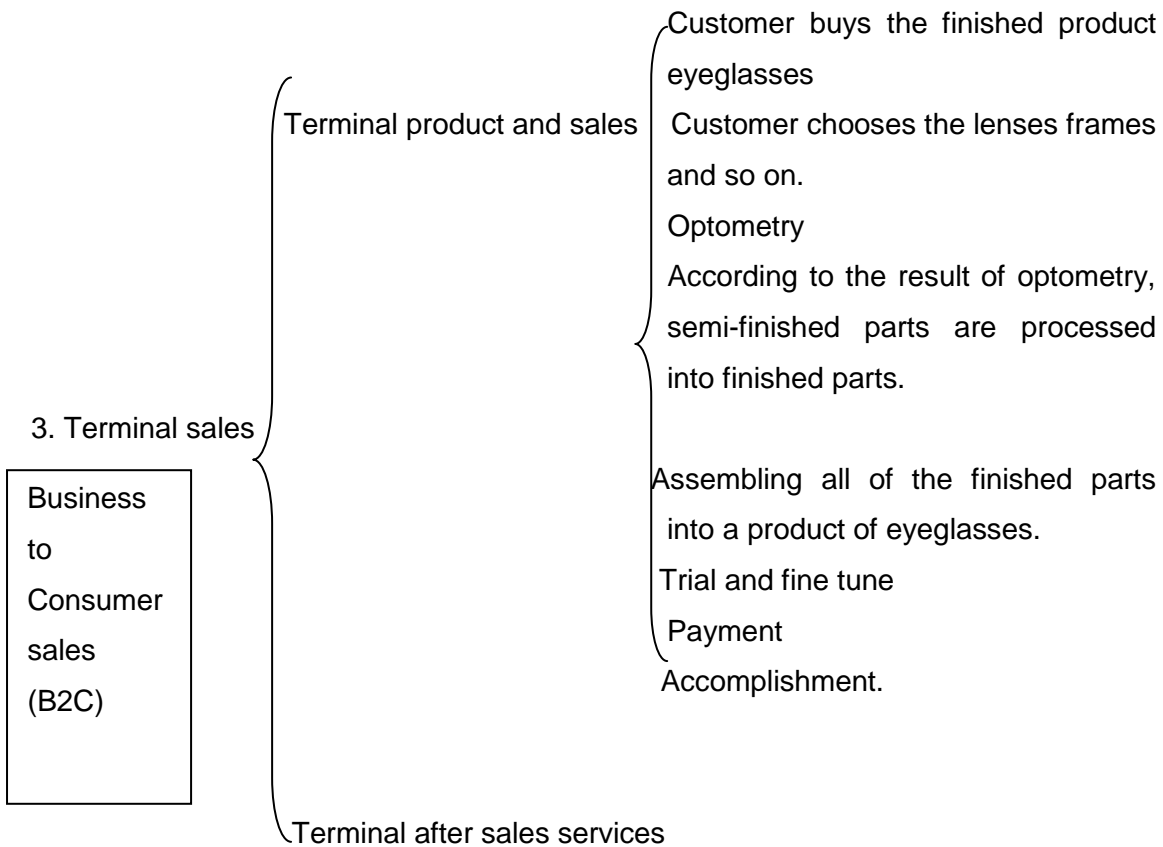
2.2 Eyeglasses Industry's Operation Flow

Process of the eyeglasses supply chain at manufacturing includes many phases such as production, intermediate sales and terminal sales.





Picture 1. Business to Business Sale. (Chinese eyeglasses magazine, 12.2011).





Picture 2. Automatic eyeglasses production line in manufacturing shop (Chinese eyeglasses magazine, 12.2011).

From the operation flow process described above, it is easy to find that the eyeglasses industry in China is a complicated trade. Chinese eyeglasses industry has some problems in both production and terminal shop.

Problems in Production of eyeglasses are:

1. Chinese Consumer Price Index (CPI) reached 2.8% after 4.2010. The Chinese economy inflation pressure turned higher than before. The price of materials and the labour costs increased. Price advantage of Chinese eyeglasses market was gradually lost.
2. Chinese eyeglasses enterprises are mainly small and medium-sized enterprises and lack of large international competitiveness.
3. It is hard to have a product brand for international marketing.

Problems in Terminal sale of eyeglasses are:

1. In a part of supply chain process, the costs have increased due to technical labour, equipment and sites.
2. In order to minimize the cost, the eyeglasses shops have only a few employees. Normally the employees have many roles. In addition, technical personnel's would not meet the requirements.
3. Sometimes the management are seriously insufficient, terminal store is processed are out of control and product quality can not guaranteed.

There are several photos below to show the optician instruments of fill the prescription.
(Pictures from Jing Chang eyeglasses shop, Wuhu, China)



Visual chart (Check the eyesight)



Pupilla Centrometer checks the pupilla's distance of eyes, ascertains the eye degree accurately



Focimeters (An ophthalmic machine that is used to take measurements of the prescription or power of eyeglasses)



Lenses centre position indicator

眼镜样板打孔机
CP-10C

CE



Sample punching machine



Abrasive disc machine



Hand mill machine

打孔锯槽一体机



CE

可调速
铝立管
带灯或扶手

好帮手眼镜设备专卖店
<http://yjdsb.taobao.com>

Drilling and grooving machine (Rimless frames)



Grooving machine (half frame)

2.3 Consumer Group of Chinese Eyeglasses Industry

China is the biggest eyeglasses consumer market and more than 300 million people wear eyeglasses products. As the renewal period is calculated to be three years, the annual demand will reach 100 million for pairs of eyeglasses and there are 10% increase rate of annual sales year by year.

It is calculated that 90% of middle aged and elderly aged Chinese get spectacles fitted, 80% of school students need eyeglasses. The potential demands for both optical eyeglasses and reading eyeglasses keep increasing. This high renewal rate of eyeglasses and rising fashion trend for sunglasses due to individual consumers possess more and more eyeglasses products. (Chinese Eyeglasses Magazine.12.2011)

Also the market for children is another interesting area. For example, since Chinese parents are willing to spend on eyeglasses products with high quality, children consumers group is one sector that gets more and more attention. The market research shows that enhancing optometry accuracy and improving product quality are two key points for children consumer group. (Chinese eyeglasses magazine, 12.2011)

In recent years, the consumption of contact lenses has growth rapidly due to the more important role of lenses in fashion. The age group of consumers who wear contact lenses has continually expense, from the original 18 to 35 year-old group expand into 15 to 49 year-old now. With the publishing of correction contact lenses and bifocal contact lenses, this age group will expand into 12 to 65 year-old group. (Chinese eyeglasses magazine, 12.2011)

2.4 The Type of Chinese Eyeglasses Store

In order to penetrate into the Eyeglasses market, eyeglasses companies normally engage in chain-store management pattern, which can classified into three categories:

- In house retail chain: The manufacturer sells through its own retail chain.
- Franchising chain: A franchising chain gathers retailers linked to suppliers (producers or wholesalers) by a contract providing that in return of a financial contribution, the retailer benefits from technical aid and the supply of goods. The franchisee cannot take part in the strategic decisions of the franchiser.

- Voluntary chain: Organization is normally made up of a leading company and some small and medium retailers that benefit from their cooperation on procurement, distribution and operation and get advantages on purchasing, information sharing and brand building.(Chinese eyeglasses magazine, 12.2011)

Normally Chinese eyeglasses sales industry can be divided into several kinds of stores like large-scale chain stores, hospital designated shop. Mom-and-pop shops, online shops, supermarkets and mall stores.

Large-scale chain store: There are many chain stores in every big or medium city in China.

Hospital designated shop: Hospital of eyes section has cooperated with some eyeglasses stores.

Mom-and-pop shop: The owner is mostly individual proprietor and couples work together in this shop.

Online shop: E-commerce.

Supermarket and mall store: Normally the supermarket and mall have their own brand. They have independent stores in their own buildings.

Currently, more than 20,000 optometry and spectacles stores are opened on a large scale. If the branches are included, the total number of stores is around 31,000 till now.

2.5 Importance of Eyeglasses to China

From 2009 to 2011, China's optical import has been continuously growing. The total value of imports was \$ 244.76 million in 2009, \$ 389.35 million in 2010 and \$ 501.15 million in 2011, with an increase of 28.7% from 2009 to 2011. Lenses and sunglasses are two main imported eyeglasses products. (Chinese eyeglasses magazine, 2.2012)

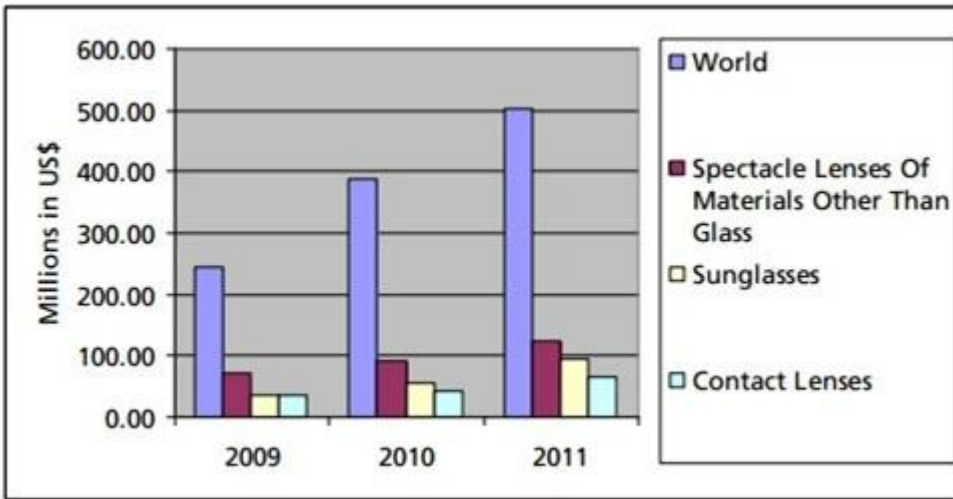


Chart 1: "Value of Chinese spectacle imports from world 2009-2011". (World Trade Atlas)

In recent years from 2009 to 2011, Italy, Japan and South Korea have always been the top three countries by import value. In 2011, the total import value from the mentioned three countries accounted for 38.6% of total value of the country, in which 23.3% Italy with an amount of \$ 116.52 million, 10.0% Japan with an amount of \$ 49.98 million and 5.3% South Korea with an amount of \$ 26.57 million. Compared with 2010, the import value of Italy had increased by 49.3% in 2011. (Chinese eyeglasses magazine, 2.2012)

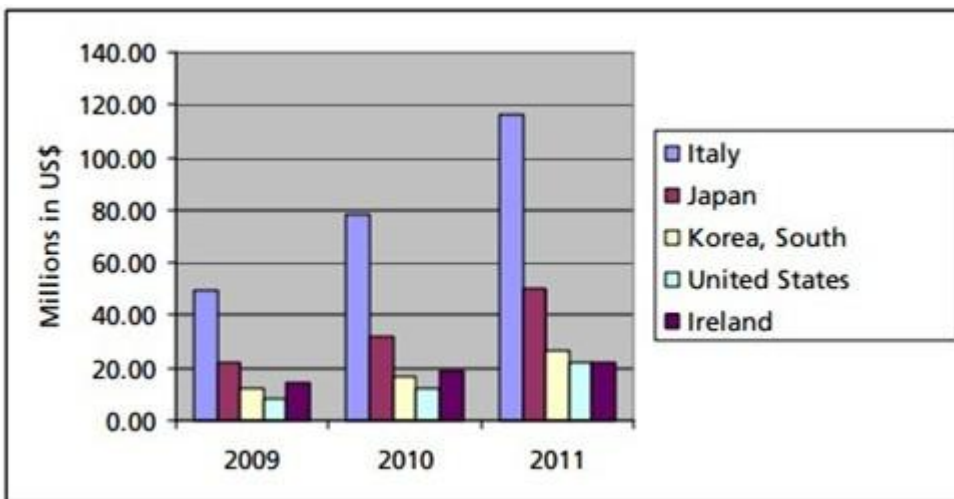


Chart 2: "Value of Chinese Spectacle Imports from the Main five Countries" 2009-2011. (World Trade Atlas)

Chinese Imports from Italy

Italy is the largest supplier of Chinese eyeglasses market, with significant increase year by year. From 2009 to 2011, Italy exported to China \$ 49.52 million, \$78.03 million and

\$116.52 million respectively. In 2011, the annual growth was of 49.3%, reflected a positive performance in 2010. (Chinese eyeglasses magazine, 2.2012)

Concerning the products imported from Italy, in the recent three years, sunglasses (HS 900410) have always belonged the top one category by importation value, followed by parts for frames (HS900390) and spectacle lenses (HS900150). In 2011, the import value of the mentioned 3 categories covered 79.3% of total import value from Italy, of which 57.7% was represented by the first category with an amount of \$ 67.21 million, 12.1% from the second category with and amount of \$ 14.07 million and 9.5 % from the third category with \$ 11.12 million.

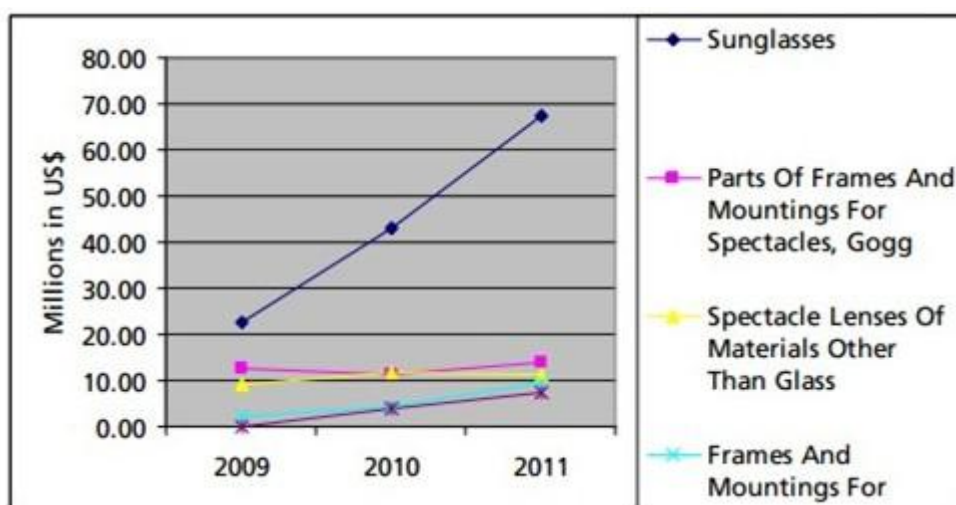


Chart 3: Main Category of Chinese Spectacles Import from Italy 2009-2011. (World Trade Atlas)

Sunglasses and parts of frames are two main products that always represent top fashion trend as good example of “Made in Italy”. This is the reason why the demand is continually increased in Chinese market.

Sunglasses (HS900410) are the major import product among other optical products. In 2011, the total import value of sunglasses from the world was \$ 95.28 million, with an increase of 68.5% to the last year, of which 57.7% was imported from Italy, with an amount of \$ 67.21 million and an increase of 28.92% in 2011. Italy was ranked in the first place in the world.

Parts of frames also kept a significant growth in 2011. The total import value of parts of frames (HS900390) from Italy was \$ 14.07 million, representing 26.1% increase to 2010. (Chinese eyeglasses magazine. 2.2012)

2.6 Export of Eyeglasses from China

In recent years, the total export value of Chinese eyeglasses products has been continually growing, like \$ 2221.20 million in 2009, \$ 3030.97 million in 2010 and \$ 3348.04 million in 2011. The total export value has increased 10.5% from 2009 to 2011.

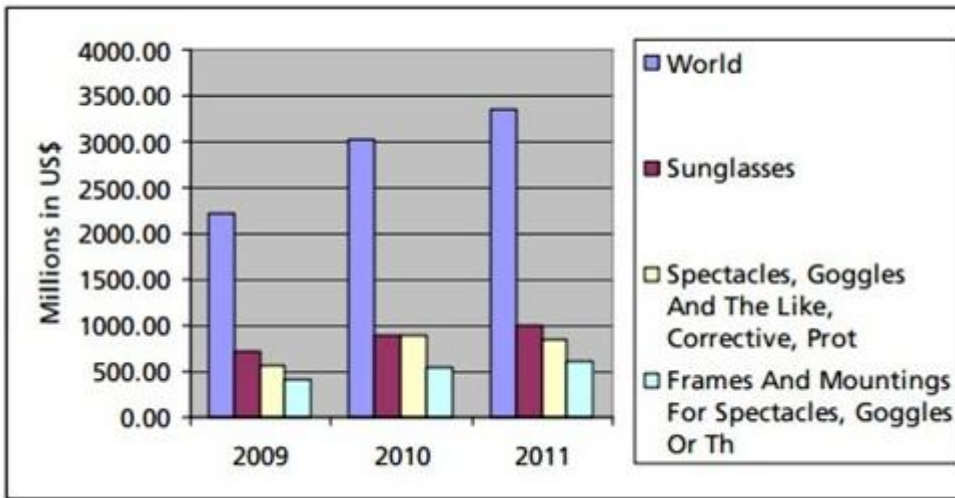


Chart 4: Value of Chinese Spectacles Export to World 2009-2011. (World Trade Atlas)

In 2011, the main five countries or areas that China exported eyeglasses were United States, Hong Kong, Italy, Japan and Germany.

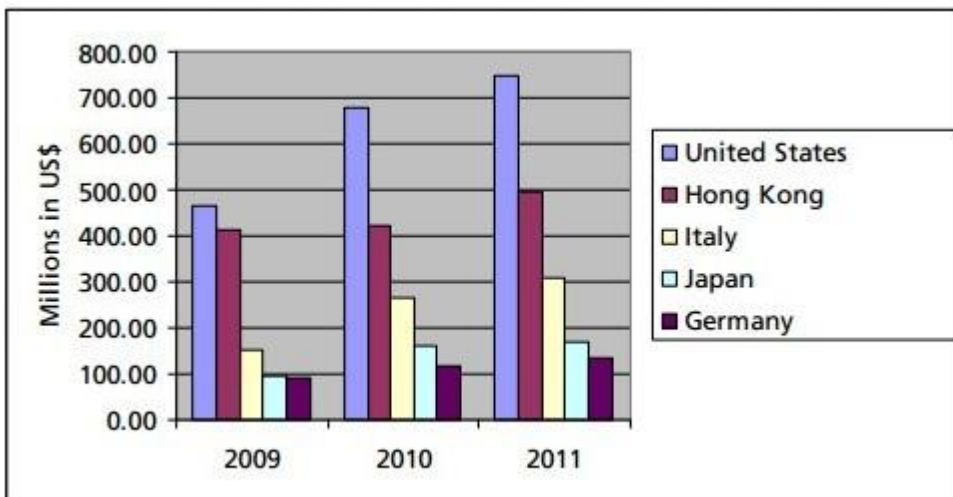


Chart 5: Value of Chinese Spectacles Export from Main 5 Countries 2009-2011. (World Trade Atlas)

Regarding exportation share by value of different categories, in 2011, sunglasses (HS900410) were the first with total amount of \$ 1003.45 million, accounting for 30.0% of total exportation value, followed by spectacles, goggles (HS 900490) and frames &

mountings for spectacles, goggles (HS900319), covering respectively 25.0% and 18.2% with amount \$ 837.82 million and \$ 609.23 million. In recent three years (from 2009 to 2011), the export value of these three categories has continually increased and still keeps on the top three positions.

a) Chinese Export to Italy

With the development of Chinese eyeglasses industry, Chinese export to Italy increased sharply in 2011. From 2009 to 2011 the sales have reached respectively \$ 152.01 million, 266.52 million and 309.01 million. The total export value to Italy has increased 15.9% from 2009 to 2011. It was ranked in 3rd place as client of China.

Concerning the products exported to Italy, in 2008 the top three categories were frames and mountings for spectacles of plastics (HS900319), frames and mountings for spectacles of other materials (HS900311), sunglasses (HS900410). (Chinese eyeglasses magazine. 2.2012)

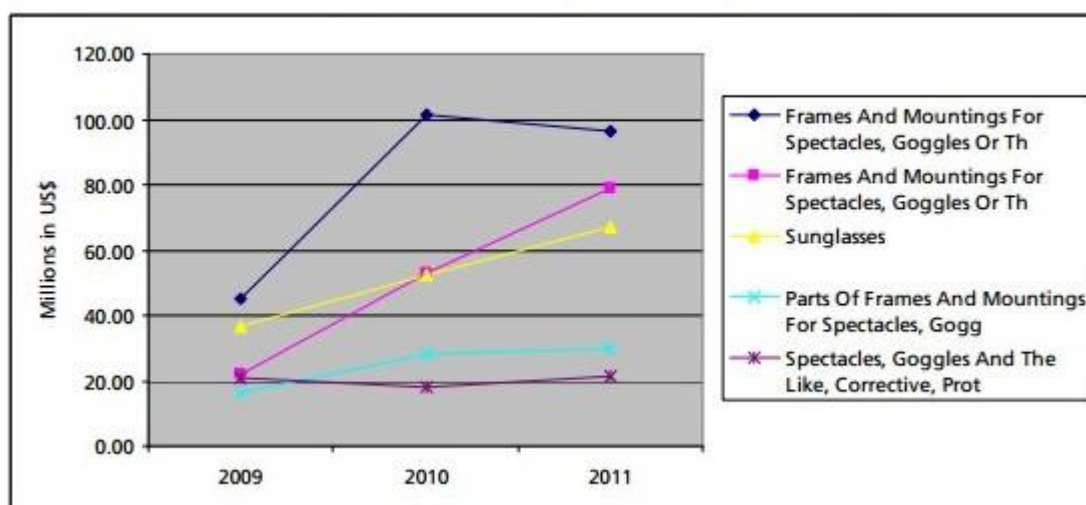


Chart 6: Main Category of Chinese Spectacles Export to Italy 2009-2011. (World Trade Atlas)

In 2011, the total export value of frames and mountings for spectacles of plastics (HS900319) was \$ 96.45 million, with a decrease of 4.7% on the 2011, which covered 31.2% of total exported eyeglasses products to Italy.

The total export value of frames and mountings for spectacles of other materials (HS900311) was \$ 78.66 million, with an increase of 48.8% in 2011, which covered 25.5% of total. The export value of sunglasses (HS900410) was \$ 66.99 million, with an increase of 28.3% in 2011, which totally covered 21.7%.

2.7 Government Policies and Regulatory Environment

General Administration of Quality Supervision, Inspection, and Quarantine of China have carried out the work of inspecting optical manufacturing and fitting. Since 1.4.2004, manufacture licenses for eyeglasses products and qualification certificates for optometrist are indispensable.

When entering eyeglasses industry, foreign merchants must pay attention to the Chinese eyeglasses industry standards. Imported spectacle products are required to comply with certain safety and quality requirements. Compulsory standards by international begin with GB and Compulsory standards by China Light industrial Products and Art-Crafts Enterprises begin with QB. In addition, Chinese government also encourages to adopt recommendatory standards which start with “/T”. (Chinese eyeglasses magazine.5.2009)

These stands specify the product classification, technical requirements, test methods, inspection rules, marking issues and so on. The index of related standards is as follows (table 1):

Table 1. Chinese eyeglasses industry standards. (World Trade Atlas)

The Number of Standard	Name of Standard
GB/T14214-2003	Spectacle frames-General requirements and test methods
GB/T14148-1993	Glass blank of ophthalmic lenses
GB/T9105-1988	Glass blank of photochromic spectacles
GB13511-1999	Assembled spectacles
GB10810-2005	Spectacle lenses
GB11417.1-1989	Hard corneal contact lens
GB11417.2-1989	Soft corneal contact lens
QB2457-1999	Sun glass
QB2506-2001	Optical resin lens
GB19192-2003	Hygienic standard for contact lens care solution

Since 2006, the government of China has stated that enterprise which distributes contact lenses must have the “Production Enterpriser License of Medical Instrument” and contact lens products including contact lens nursing liquid must have “Registration Certificate for Medical Device”.

9.2. 2009, the Standardization Administration of The People's Republic of China (SAC) of launched a national standard, "Ophthalmic Optics, instruments and visual aids". The standard specifies the optical, mechanical requirements and test methods of optical visual aids, including optical devices with electrical components (e.g. lighting). The standard applies to the manufactures that provide low vision visual aids for these visually impaired, but not to the electrical low vision visual aids.

Moreover, as the raw materials have a big drop in duty rates on cancellation of non-tax protection, environment protection standards forwarded by WTO, Chinese sunglasses products will become less competitive in terms of price, and all these will lay negative impact on Chinese eyeglasses industry. (Chinese eyeglasses magazine.5.2009)

2.8 Production Process of Eyeglasses

In an eyeglass, lots of parts need to be assembled. Such as frame, lenses, nose bridge, hinge and so on. This figure below will show a sample of Plastic 3D eyeglasses production.

Plastic 3D eyeglasses production flow chat

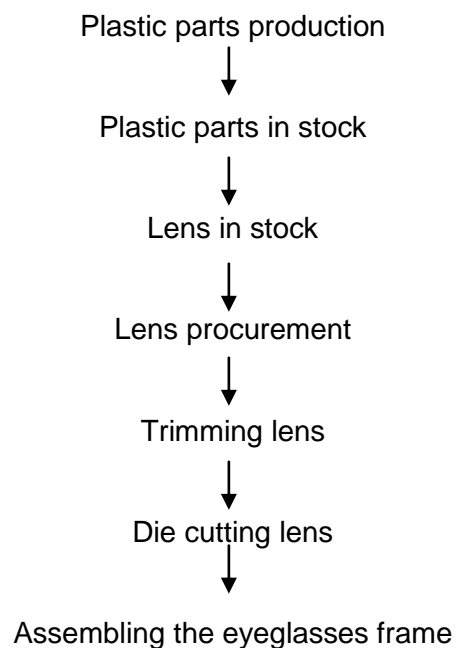


Figure 1. Plastic 3D eyeglasses production.

Eyeglasses type: resin lenses –metal frames

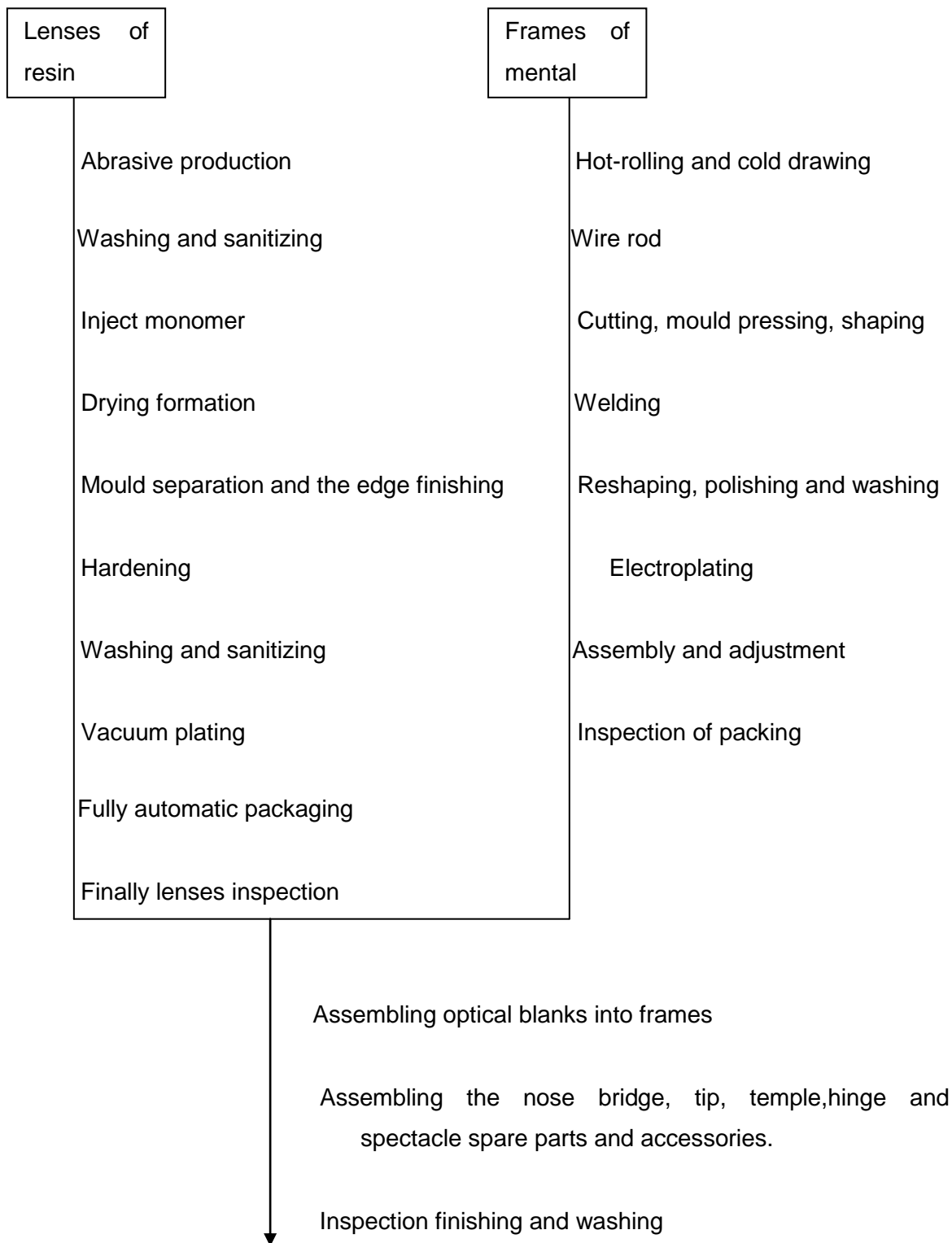


Figure 2. Sample of eyeglass production process.

3 Supply Chain Management in Chinese Eyeglasses Industry

3.1 Principle of Supply Chain

3.1.1 Introduction of Supply Chain

A supply chain is a system of organizations, people, technology, activities, information and resources involved in moving a product or service from supplier to customer. Supply chain activities transform natural resources, raw materials and components into a finished product that is delivered to the end customer. In sophisticated supply chain systems, used products may re-enter the supply chain at any point where residual value is recyclable. Supply chains link value chains. (Nagurney,2006)

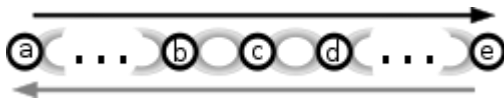


Figure 3. A model of Supply Chain. (www.supply-chain.org, 2011)

The black arrow represents the flow of materials and information and the gray arrow represents the flow of information and backhauls. The elements are (a) the initial supplier (vendor or plant) (b) a supplier, (c) a manufacturer (production), (d) a customer, (e) the final customer. It is the supply chain operations reference (SCOR), Model (Fig.3.) from the supply chain council (www.supply-chain.org, 2011) which divides the supply chain into five management process:

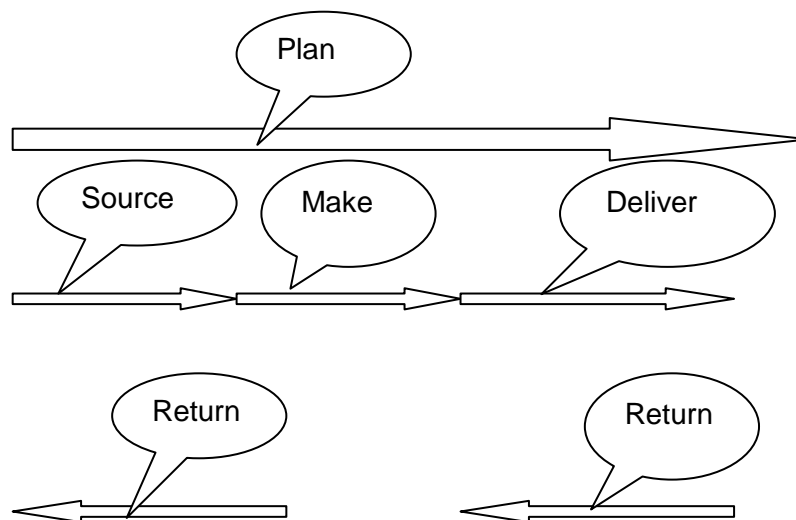


Figure 4. Relationship in five management processes. (en.wikipedia.org)

SCOR(r) is a management tool, spanning from the supplier's supplier to the customer's customer. The model has been developed by the members of the Council on a volunteer basis to describe the business activities associated with all phases of satisfying a customer's demand. (en.wikipedia.org)

3.1.2 Functional Responsibilities of Supply Chain

All five management processes include management risk, assets, inventory, metrics, and performance against those metrics, business rules and regulatory requirements. In addition, the processes include the functional responsibilities described below: (Myerson 2012, 4-5)

1. Plan — balancing supply and demand. These plans are communicated throughout the supply chain.
2. Source — the procurement of goods to meet demand. This includes identifying, selecting and measuring performance of sources of supply, as well as delivering and receiving materials.
3. Make — the transformation process, taking raw materials and converting them into finished products.
4. Deliver — resources to move materials along the supply chain, from suppliers to manufacturing and then to customers. Includes order management, warehousing and shipping.
5. Return — the reverse logistics process for product or material that is returned, including repair, maintenance and overhaul.

3.1.3 Definition of Logistics

Logistics is the management of the flow of resources. In order to meet some requirements between the point of origin and destination. Such as customers or corporations. The resources managed in logistics can include physical items, such as food, materials, equipment, liquids, and staff, as well as abstract items, such as time, information, particles, and energy. The logistics of physical items usually involves the integration of information flow, material handling, production, packaging, inventory,

transportation, warehousing, and often security. The complexity of logistics can be modelled, analyzed, visualized, and optimized by dedicated simulation software. The minimization of the use of resources is common motives. (Waters 2012, 65)

The deification character emphasizes satisfaction of customers, the efficient logistics activities and logistics extend from the original sales of the logistics to the supply logistics, business logistics and sales logistics. (Figure 3)

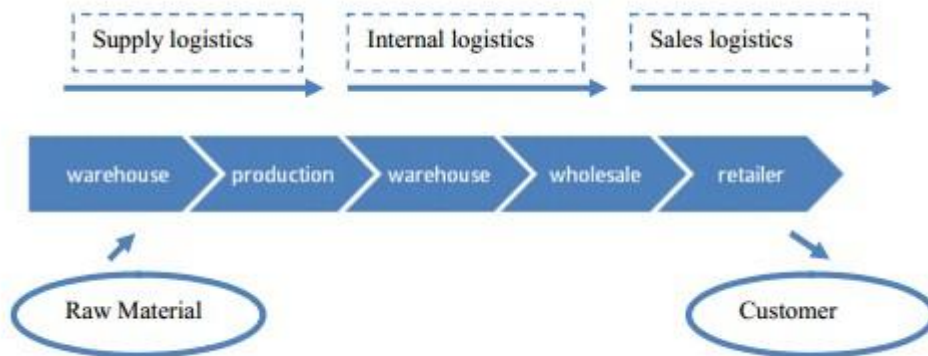


Figure 5. Extension of modern logistics concept. (Waters 2012, 66)

The Council of Supply Chain Management Professionals which is the precursor council of Logistics Management, an association which is the world's leading source for the supply chain profession, defines logistics management as: the part of supply chain management that plans, implements, and controls the efficient, effective forward and reverses flow and storage of goods, services and related informational between the point of origin and the point of consumption in order to meet customers' requirements (Waters 2012, 66)

In order to improve the efficiency of logistics management, there are some ways (cscmp.org):

1. logistical network
2. information
3. transportation
4. sound inventory management
5. warehousing materials handling and packaging

3.1.4 Logistics Strategy

A logistics strategy consists of all the long-term goals, plans, policies, culture, resources, decisions and actions that relate to the management of an organization's supply chain. (Waters 2012, 69)

A) The importance of logistics managers in logistics strategy

Logistics managers do not simply respond to the higher strategies, but they actively contribute to their design. They review their operations and the performance that they can realistically achieve, and this forms one of the inputs for the design of higher strategies.(as shown in Figure 6) (Waters 2012, 69)

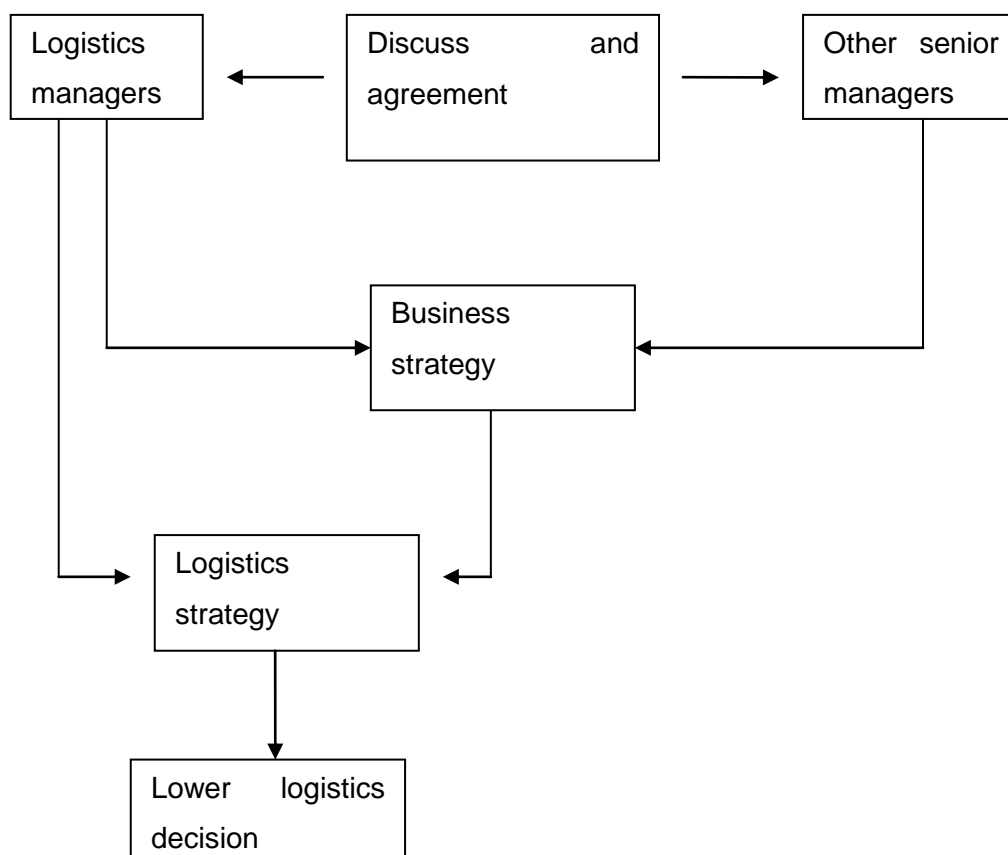


Figure 6. Role of logistics managers in strategic decisions. (Waters 2012, 69)

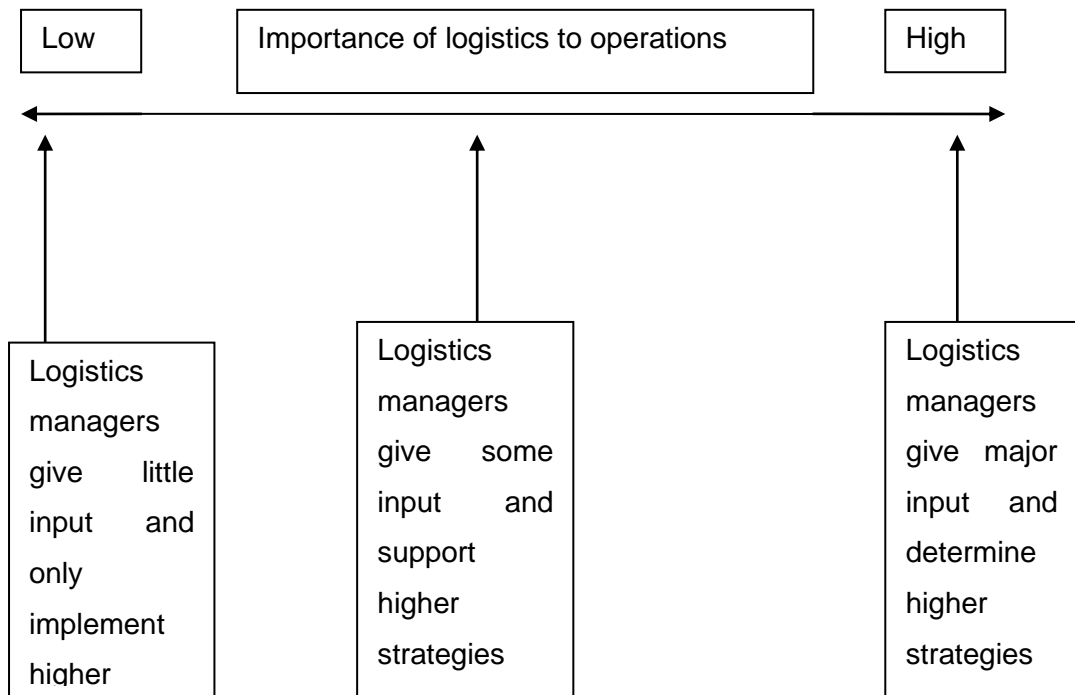


Figure 7. Logistics managers give different amounts of input to higher strategies. (Waters 2012, 70)

B) Building Logistics Stagey

Although there is no standard method for designing a strategy, a reasonable general approach has the following eight steps describe in Figure 8. (Waters 2012, 73):

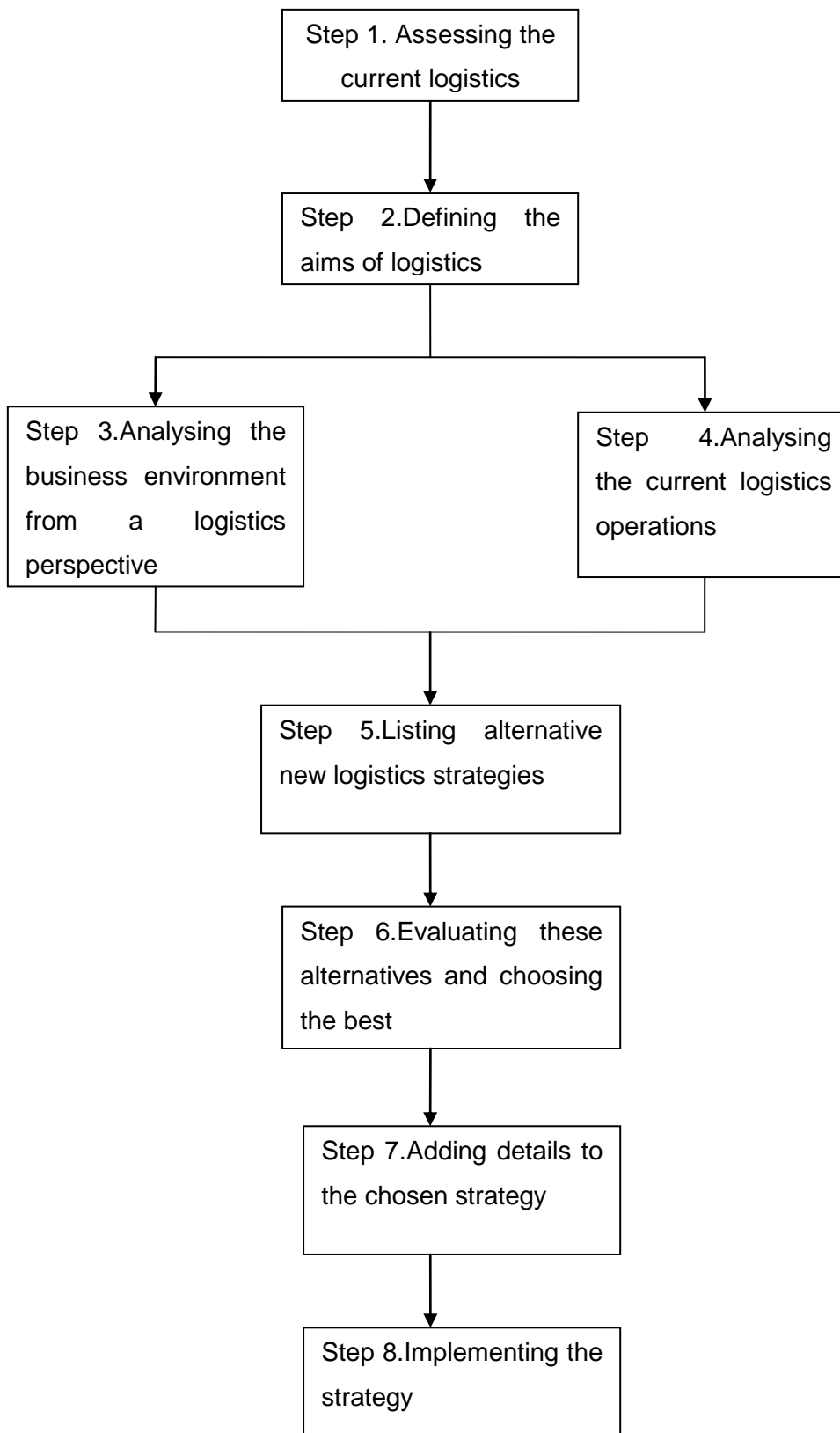


Figure 8. Steps in designing a logistics strategy. (Waters 2012,73)

3.2 The Distribution of Eyeglasses Industry

For the past few years, eyeglasses industry in China has had an enormous development. But under the effect of global financial crisis in 2008, there was a big unprecedented challenge. The global economic crisis triggered by the subprime mortgage failure in the United States is still on its way of spreading and deepening. This crisis is affecting China's industries in an unprecedentedly harmful manner, including China's eyeglasses industry, as normally 70% of the eyeglasses produced in China is for export. Still as what the word "crisis" implies in Chinese language, crisis means both "threat" and "opportunity" which is coexistent when facing crisis. Here are several examples of how the Chinese eyeglasses enterprises are reacting in the time of fierce economic slowdown. Based on the poll at the end of 2008, 70% of the eyeglasses companies in China have been impacted by the financial tsunami. Many eyeglasses enterprises are trying to convert the threats to opportunities. (Yong H.07-2009)

In Yuhuan, a small town in Wenzhou city which is famous for its manufacturing of all types of eyeglasses accessories, companies like Dafa and Huaqiang area are capitalizing the low price of copper to buy and hold for the future business expanding.

In Dan yang its eyeglasses enterprises' dependency on export is not as heavy as that of Shenzhen's. Dan yang companies are penetrating in depth the percentage share of China's local optical market.

In Shenzhen, one company can spend only 70000 to 80000 RMB to purchase equipment which normally would cost six hundred thousand to one million. This point is a wonderful opportunity for those companies that are going to expand in the time of economic meltdown.

In Shanghai, the Hydron contact lenses company has just spent 60 million RMB setting up another casting assembly of the world's most advance technology. With this new assembly line Hydron's production capacity will be up to 40 million pairs of contact lenses.

In Xiamen, Quansheng Company manufactured world's top quality metal frames imported machines from Italy.

In Wenzhou, the export of eyeglasses is about 77 million US dollars, which is about 20.76% on the year-on-year basis. It is highly because of the affordable price and fair

quality of the Wenzhou eyeglasses. Analysts told reporters that the biggest reason the time of economic slowdown, consumers in the western countries tend to buy cheap but acceptable quality stuff instead of expensive things. The increase of eyeglasses export in Wenzhou reveals apparently that 2009 was the good time of opportunity.

Export Eyeglasses production or circulation has encountered many difficulties. The export orders of eyeglasses production enterprise have fallen sharply, the products sales in domestic market have become increasingly competitive, wholesale enterprises cash collection is slow, and change in the return ratio is high. Physical inventory and shop goods backlog pulled badly wholesalers in eyeglasses retail industry. At the same time, encountering foreign companies pouring into eyeglasses retail and high-end competition is escalating, low price discount is also very popular, Chinese eyeglasses industry has many problems to be solved.

In the currently product structure, the majority of manufacturers are engaged in the production or trading of OEM (Original Equipment Manufacturer) which is at the downstream of industrial chain. Although some makers have their own medium-high brands targeting, the market lacks of high-end designs with high technology and quality. Few domestic manufacturers possess their own Research and Development Centres and most of them get technology transfer from foreign partners by purchasing related equipment. Current product structure cannot satisfies consumer demands of different level and obviously provide a good market opportunity for high-end eyewear products from foreign countries. (Chinese Eyeglasses magazine.5.2009)

4 Case Study of Supply Chain, Logistics and Material Flows in Dan Yang Optical Market

4.1 Introduction

Dan Yang optical market is in Jiang Su province. It was established in October 1986, near the train station and combined the Hua Yang market and Yun Yang market. The total area is 32 thousand square meters. There are more than thousand products in the optical market. The achieved turnover of Dan Yang optical market was 580 million in 2005. Dan Yang optical market has become the largest eyeglasses products base in Southeast Asia after 10 years of development.

4.2 Development Stages

First stage year 1970-1980: Budding stage, prepared to start the Dan Yang optical market.

Second stage year 1980-1990: Grow up of Dan Yang optical market. It becomes more and more reputation.

Third stage year 1990-2000: China association of glasses had the annual two expos in one year. That made Dan Yang optical market famous in foreign countries.

Last stage year 2000-2014: It determined the position of glasses producers in China because of the rise of resin lens in Dan Yang optical market.

4.3 Current Situations of Production

4.3.1 Production of Lenses

Resin lenses are the primary lenses in Dan Yang optical market nowadays. Daily production is about 600 thousand per day. Import and export production kept in balance. Dan Yang optical market is mainly sold in Chinese domestic market.

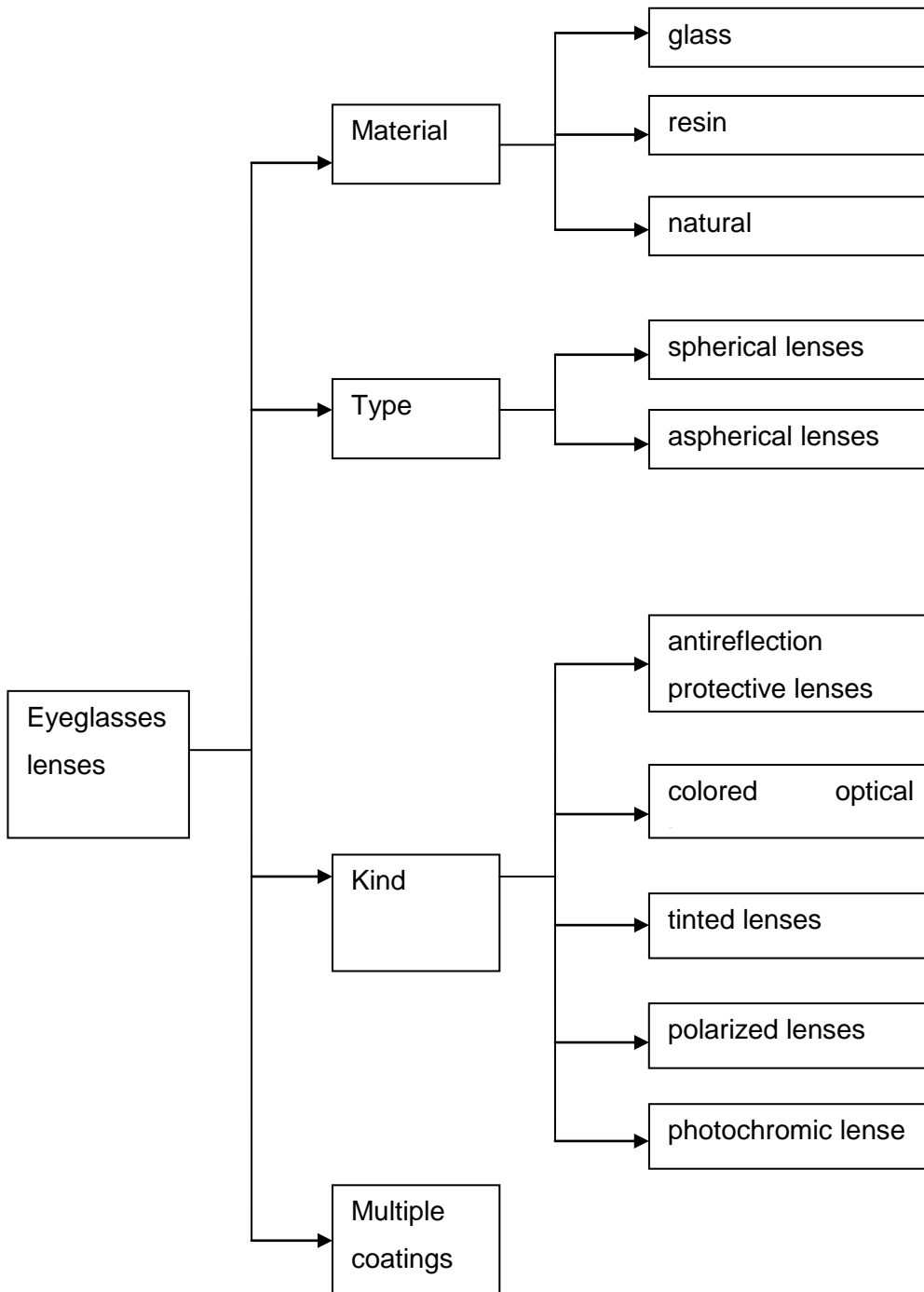


Figure 9 :Classification of lenses. (<http://baike.baidu.com/view/47602.htm>)

Disadvantage: A few years ago market sales situation was good, market competition was intense, many enterprises invested blindly and this led to some businesses shut down.

4.3.2 Production of Frames

The production of frames has much longer history than the production of resin lenses. Daily production is about 300 thousand per day.

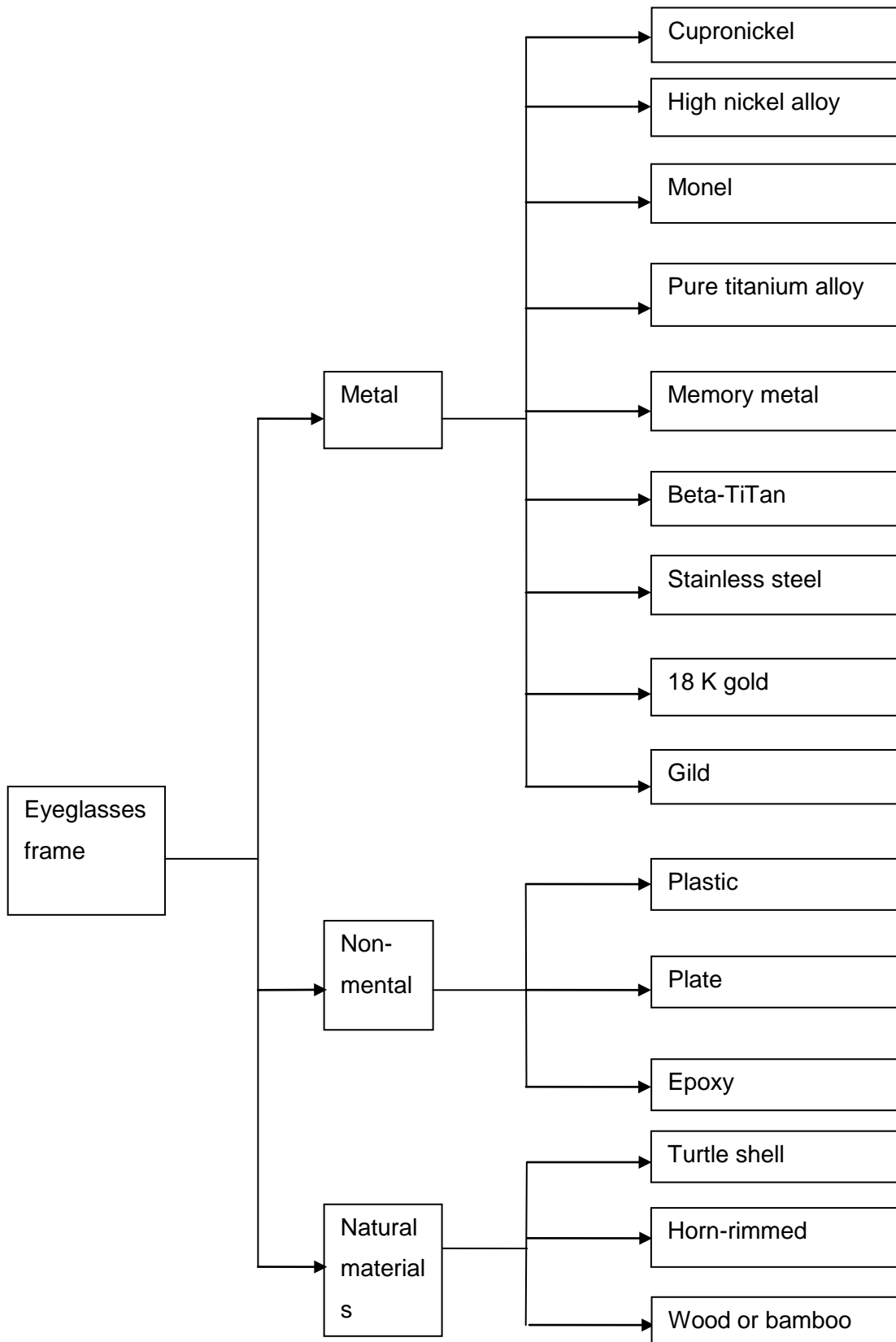


Figure 10. Classification of frames. (<http://baike.baidu.com/view/2150146.htm>)

Disadvantage: Frame enterprises lack of innovation spirit and grudge to investments. There is no breakthrough on quality.

4.4 Situation of Dan Yang Eyeglasses Industry

Dan Yang city is located in the Chinese economy's most developed Yangtze River delta, the city's total area is 1059 square kilometres. The population is 895 thousand. Dan Yang city includes 13 towns and 1 provincial level development zone.

In recent years, Dan Yang eyeglasses industry has developed rapidly, it has its own unique advantages and characteristics.

4.4.1 Overview of Whole Dan Yang Eyeglasses Industry

Dan Yang eyeglasses industry began in the late 1960's. After more than thirty years of development, it has now formed from the design, production, sales and one-stop industrial chain in social division of labour, scale and distribution.

It becomes Dan Yang "first industry". And in 2005, Dan Yang optical market won the title of "the glasses production base in China" and "base of eyeglasses production".

At present, the city's industry and trade enterprises are engaged in eyeglasses industry and eyeglasses production enterprises are more than 500 and staffs are more than 60 thousand people. In 2007, profit of the eyeglasses industry sales was nearly 6 billion Yuan. There were nearly 100 million vice frames and 1/3 of the optical eyeglasses and resin lenses 250 million in annual production capacity, and accounted for over 80% of the total national production includes alloy Frames, titanium frames, eyeglass lenses, resin lenses, lenses have formed series in 800 million Yuan enterprises. Nearly half of the products are exported to Japan, Southeast Asia, Europe and The United States

4.4.2 Transportation of Eyeglasses to Dan Yang Eyeglasses Market

Customer's order is the most important information within the case company. The order information flows across the whole department until the order has been delivered to the customer.

There are five main functions, which are implemented by order fulfilment: delivery, invoicing, shipping process, other Customer/Country Logistics related roles and processes, and reverse logistics.

1) Delivery

Logistics specialist prepares export shipments, creates export shipping documentation in line with customer requirements and shipping document preparation. E.g. Packing list and the document, which applies customer order needed, creates delivery note for payment confirmed orders base on flight space rules and bonded or non-bonded information. After checking the key dates on order (many cases automatic), supporting the outbound logistics team on transportation planning by giving delivery related information.

2) Shipping process

Communicating with shipping the orders to ship on a daily basis, and customer logistics ship dates. Logistics specialist is a key role in expediting orders – following the shipment for special reason. Delivering the customer orders after the revenue recognition.

3) Railing process

Train is significant in transportation of inland China. Capacious and cheap freight is superior importance.

4) Car transport

Convenience and fast speed is the main point in all the means of transportation.

4.4.3 Reason of Success in Dan Yang Optical Market

Dan Yang optical market has the earliest and largest market of national spectacles. The optical market has its own characteristics and advantages (Ping I.05-2006).

1. Supply Chain Join Completely

Dan Yang optical market is famous for professional coordination and division of labour

well. In addition, hard coating, eyeglasses machines, mirror box production, printing, packaging and other enterprises formed a complete industry chain.

Many enterprises have their own factories and optical shops. Internal market has a wholesale department after the completion of the product direct trade and reduces the cost.

2. Enterprises focus on the registered trademark

So far eyeglasses industry in Dan Yang city has more than 2000 registered trademark and 1 Chinese well-known trademark. Dan Yang eyeglasses now have more than 30 companies, which have the ISO international quality system certification.

In 2006 national eyeglasses products quality supervision and inspection centre was located in Dan Yang. This centre earned the right to participate in the international standard. It has also established that Dan Yang eyeglasses industry has an important position in national industry.

3. Talent Strategy

Dan Yang optical market has become one of the nation's largest set research and development, production, marketing comprehensive bases. There are 15 eyeglasses scientific research institutions, professional and technical personnel 2000 people, middle and senior titles of technical personnel 130 people. It has also developed its' own CR-39 resin lenses, high-grade titanium frames and other products. Many eyeglasses enterprises have technical cooperation with scientific research colleges and universities in Shanghai and Jiangsu.

4. Environment Factors

Dan Yang is the junction, which is located in Shanghai's economic circle and the Nanjing's metropolitan circle. Well-developed transportation by rail, bus and ship is an excellent way to develop the optical market. The price of land and the labour are cheap.

5. Effects of Chamber of Commerce

Dan Yang Eyeglasses Chamber of Commerce was founded in January 1999, there are three professional Committee: spectacle frames Committee, optical eyeglasses Committee and resin lenses Committee. Members of chamber of commerce are mostly

eyeglass enterprises in Dan Yang city. Eyeglasses Industry Chamber of Commerce actively organizes the members to participate in the international eyeglasses, such as Beijing, Hong Kong, Milan, optical expositions etc.

4.4.4 Strategy Plan

Nowadays, there is a change in the social consumption structure in China. With the rapid development of customers need, Chinese eyeglasses demand increased quickly. This diversification shows three aspects: diversified consumption structure, diversified consumer groups and diversified consumer concept.

1. Consumption structure

In recent years, Chinese government has been paying more attention to material goods like apartments or cars. Eyeglasses become a necessity.

2. Consumer groups

Chinese industry needs to take care of every age groups people.

3. Consumer concept

Eyeglasses have now turning into luxury like jewellery. There are many new products for every season products. Creating the high-level brand eyeglasses is a significant thing at this moment.

For example, eye pillows and eye masks are popular in Japan. The Japanese company Tokyo Hands manufactured eye pillows aiming at eliminating eye fatigue amount of computer people. It is very famous around Japan.

Most eye pillow shapes are different, with lavender, mint, or other herbs to extract the fragrance. It can have massage effect on the eyes. A kind of cooling patch is also very popular, stored in a refrigerator when not in use. This patch will make the eyes feel cool when using filling liquid. It has the effect of removing fatigue of the eyeglasses.

This kind of eyeglasses consumption is a diversification trend to the development production, innovation, sales, circulation and market development. It also presented the

development trend of diversification. In Dan Yang optical market, eyeglasses manufacturers use OEM (Original Equipment Manufacture) as the main mode of operation. Eyeglasses Enterprises should develop in the competition and cooperation, from OEM to ODM (Original Design Manufacture) and to OBM (Original Brand Manufacture) two levels jump.

5 Conclusion

To sum up briefly, eyeglasses industry in China has developed fast. But nowadays eyeglasses retailers and manufacturers are completely wild. They are arguing about supplies and inventory problems and so on in order to make more money and profit. The best way for them would be strategic partners.

The eyeglasses industry of China not only imports, but also exports. The supply chain and logistics in China's improving rapidly. Demand for eyeglasses grows both at home and abroad. It is a benefit for optical enterprises in China and stimulates the economy in eyeglasses industry.

In the case of the thesis, Dan Yang optical market is just one typical case in Chinese eyeglasses industry. It has a complete supply chain for the market. The Dan Yang optical market is a development trend on Chinese eyeglasses industry.

Chinese eyeglasses industry has a tremendous market including not only the eyeglasses products but also the optical instruments. Cheap labor and good quantity at the same time is the supreme advantage. Chinese government has encouraged the foreign companies come to China and export eyeglasses from China.

Chinese eyeglasses Industry also wants to enlarge their market and cooperate with foreign countries. Finland has a very potential market of eyeglasses. Mostly are the spectacles brand chain stores. With the more and more foreign manufacturers are come, market competition has become more and more fierce. The best way of Chinese eyeglasses Industry is to find the right spectacles agent, while emphasize the quality of service (good after sales service) product price and quality advantages. They are the necessary steps to occupy the Finnish eyeglasses market.

From this thesis, it is easy to understand and know the development situation in Chinese eyewear. There are lots of challenges in Chinese eyeglasses Industry. Supply chain of Chinese eyeglasses will be more and more consummate.

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L. Classification of frames

<http://baike.baidu.com/view/2150146.htm>

M. Classification of lenses

<http://baike.baidu.com/view/47602.htm>

N. Chinese import and export to Italy

Chinese Eyeglasses Magazine 2.2012

Appendix 1: China Import

China's Total Import by country 2009-2011

Millions of US Dollars

Rank	Country /Region	Value			% Share			% Change
		2009	2010	2011	2009	2010	2011	11/10
	World	244.76	389.35	501.15	100.0	100.0	100.0	28.7
1	Italy	49.52	78.03	116.52	20.2	20.0	23.3	49.3
2	Japan	22.44	32.30	49.98	9.2	8.3	10.0	54.7
3	Korea, South	11.84	16.88	26.57	4.8	4.3	5.3	57.4
4	United States	8.01	12.45	22.19	3.3	3.2	4.4	78.3
5	Ireland	14.30	18.79	22.18	5.8	4.8	4.4	18.1
6	Thailand	11.24	12.73	21.69	4.6	3.3	4.3	70.4
7	Germany	8.76	15.05	21.40	3.6	3.9	4.3	42.1
8	Taiwan	9.86	16.36	20.22	4.0	4.2	4.0	23.6
9	France	13.65	19.38	18.90	5.6	5.0	3.8	-2.5
10	Hong Kong	25.54	18.94	13.73	10.4	4.9	2.7	-27.5

Sourcing from: World Trade Atlas

China's Total Import by product 2009-2011

Millions of US Dollars

HS Code	Description	Value			% Share			% Change
		2009	2010	2011	2009	2010	2011	11/10
	World	244.76	389.35	501.15	100.0	100.0	100.0	28.7
900150	Spectacle Lenses Of Materials Other Than Glass	71.39	90.07	124.34	29.2	23.1	24.8	38.1
900410	Sunglasses	34.76	56.54	95.28	14.2	14.5	19.0	68.5
900130	Contact Lenses	37.26	43.02	65.75	15.2	11.1	13.1	52.8
900490	Spectacles, Goggles And The Like, Corrective, Prot	11.87	72.15	59.70	4.9	18.5	11.9	-17.3
900319	Frames And Mountings For Spectacles, Goggles Or Th	41.66	47.54	59.58	17.0	12.2	11.9	25.3
900390	Parts Of Frames And Mountings For Spectacles, Gogg	37.23	53.69	53.56	15.2	13.8	10.7	-0.2
900311	Frames And Mountings For Spectacles, Goggles Or Th	8.34	17.99	30.71	3.4	4.6	6.1	70.7
900140	Spectacle Lenses Of Glass	2.25	8.35	12.22	0.9	2.2	2.4	46.3

Sourcing from: World Trade Atlas

China's Import from Italy by Product 2009-2011

Millions of US Dollars

HS Code	Description	Value			% Share			% Change
		2009	2010	2011	2009	2010	2011	11/10
	Italy	49.52	78.03	116.52	20.2	20.0	23.3	49.3
900410	Sunglasses	22.81	43.11	67.21	46.1	55.3	57.7	55.9
900390	Parts Of Frames And Mountings For Spectacles, Gogg	12.57	11.16	14.07	25.4	14.3	12.1	26.1
900150	Spectacle Lenses Of Materials Other Than Glass	9.28	11.56	11.12	18.8	14.8	9.5	-3.8
900311	Frames And Mountings For Spectacles, Goggles Or Th	2.17	4.28	9.42	4.4	5.5	8.1	120.1
900140	Spectacle Lenses Of Glass	0.02	3.81	7.46	0.0	4.9	6.4	95.5
900319	Frames And Mountings For Spectacles, Goggles Or Th	2.60	3.97	7.08	5.3	5.1	6.1	78.1
900490	Spectacles, Goggles And The Like, Corrective, Prot	0.07	0.12	0.16	0.1	0.2	0.1	30.5
900130	Contact Lenses	0.00	0.00	0.00	0.0	0.0	0.0	0.0

Sourcing from: World Trade Atlas

China's Total Export by country 2009-2011

Millions of US Dollars

Rank	Country /Region	Value			% Share			% Change
		2009	2010	2011	2009	2010	2011	11/10
	World	2221.20	3030.97	3348.04	100.0	100.0	100.0	10.5
1	United States	465.52	679.65	748.07	21.0	22.4	22.3	10.1
2	Hong Kong	412.05	423.41	494.51	18.6	14.0	14.8	16.8
3	Italy	152.01	266.52	309.01	6.8	8.8	9.2	15.9
4	Japan	95.17	159.55	168.36	4.3	5.3	5.0	5.5
5	Germany	92.06	117.56	134.36	4.2	3.9	4.0	14.3
6	United Kingdom	100.91	147.51	124.26	4.5	4.9	3.7	-15.8
7	Russia	75.82	122.19	120.18	3.4	4.0	3.6	-1.6
8	India	58.73	77.29	99.73	2.6	2.6	3.0	29.0
9	France	65.45	80.60	98.21	3.0	2.7	2.9	21.9
10	Korea, South	52.49	106.89	95.49	2.4	3.5	2.9	-10.7

Sourcing from: World Trade Atlas

China's Total Export by product 2009-2011

Millions of US Dollars

HS Code	Description	Value			% Share			% Change
		2009	2010	2011	2009	2010	2011	11/10
	World	2221.20	3030.97	3348.04	100.0	100.0	100.0	10.5
900410	Sunglasses	714.59	897.98	1003.45	32.2	29.6	30.0	11.7
900490	Spectacles, Goggles And The Like, Corrective, Prot	564.61	895.76	837.82	25.4	29.6	25.0	-6.5
900319	Frames And Mountings For Spectacles, Goggles Or Th	421.47	547.78	609.23	19.0	18.1	18.2	11.2
900150	Spectacle Lenses Of Materials Other Than Glass	332.20	391.20	504.72	15.0	12.9	15.1	29.0
900311	Frames And Mountings For Spectacles, Goggles Or Th	95.57	166.97	251.50	4.3	5.5	7.5	50.6
900390	Parts Of Frames And Mountings For Spectacles, Gogg	56.11	90.51	94.35	2.5	3.0	2.8	4.2
900140	Spectacle Lenses Of Glass	32.57	34.77	40.31	1.5	1.2	1.2	15.9
900130	Contact Lenses	4.08	5.99	6.66	0.2	0.2	0.2	11.3

Sourcing from: World Trade Atlas

China's Import from Italy by Product 2009-2011

Millions of US Dollars

HS Code	Description	Value			% Share			% Change
		2009	2010	2011	2009	2010	2011	11/10
	Italy	152.01	266.52	309.01	6.8	8.8	9.2	15.9
900319	Frames And Mountings For Spectacles, Goggles Or Th	45.31	101.25	96.45	29.8	38.0	31.2	-4.7
900311	Frames And Mountings For Spectacles, Goggles Or Th	21.93	52.85	78.66	14.4	19.8	25.5	48.8
900410	Sunglasses	36.71	52.21	66.99	24.2	19.6	21.7	28.3
900390	Parts Of Frames And Mountings For Spectacles, Gogg	16.39	28.25	29.74	10.8	10.6	9.6	5.3
900490	Spectacles, Goggles And The Like, Corrective, Prot	20.67	18.11	21.44	13.6	6.8	6.9	18.4
900150	Spectacle Lenses Of Materials Other Than Glass	9.17	11.84	10.87	6.0	4.4	3.5	-8.2
900140	Spectacle Lenses Of Glass	1.38	1.72	4.35	0.9	0.7	1.4	153.3
900130	Contact Lenses	0.45	0.29	0.50	0.3	0.1	0.2	75.6

Sourcing from: World Trade Atlas

Appendix 3: Eyewear Custom Duties

Code	Description	MFN %	ED%	VAT%
90013000	Contact lenses	10	15	17
90014010	Spectacle lenses of glass, Photochromic	20	15	17
90014091	Sunglasses lenses of glass, not photochromic	20	15	17
90014099	Spectacle lenses of glass, nes, not photochromic	20	15	17
90015010	Spectacle lenses of other materials, photochromic	20	15	17
90015091	Sunglasses lenses of other materials, not photochromic	20	15	17
90015099	Spectacle lenses of other materials, nes, not photochromic	20	15	17
90031100	Frames and Mountings for spectacles, goggles or the like, of plastic	18	15	17
90031900	Frames and Mountings for spectacles, goggles or like, of other materials	10	0	17
90039000	Parts for frames and mountings for spectacles, goggles or the like	10	15	17
90041000	Sunglasses	20	15	17
90049010	Photochromic spectacles	16	15	17
90049090	Spectacles, goggles and the like, nes	20	15	17

Sourcing from: China Customs 2011

Remark:

- MFN: Most-favored-Nation treatment
- VAT: Value Added Tax
- ED: Export Rebates