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Approaching the Chinese Market: A View from the Vehicle Inspection Industry for Opus Group

Master Thesis in the Master Degree Programme, Supply Chain Management

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ABSTRACT

China is currently experiencing a transition from a planned economy to a market economy, this transition has resulted in the deregulation of several different industries, including the vehicle inspection industry. The vehicle inspection industry has been developing due to this deregulation and is currently faced with an unprecedented growth in China. Opus Group, as a leading actor in the international vehicle inspection market, is continuously seeking to expand its business and reap the benefits of entering growing markets.

China is however a very complex market with a unique business culture and culture in general. The title of this thesis is "Approaching the Chinese Market: A View from the Vehicle Inspection Industry for Opus Group", there are few researches that have been made before in this field and the thesis is thus interesting from an academic point of view as well as for the client, Opus Group.

The objective of the thesis is formulated as "How should vehicle inspection companies like Opus Group approach the Chinese market in order to enter and succeed in the market? "In order to make the objective approachable, it is broken down into three research questions: RQ1: What actors constitute the current network architecture in the Chinese vehicle inspection market? RQ2: How should vehicle inspection companies like Opus group adjust their offerings when entering the China market? RQ3: What socio-economic factors need to be considered when trying to do business in China? The three research questions belong to three important theoretical categories: network architecture, the offering and the market analysis. The thesis is constructed in a way that answers the three research questions.

In order to get a deeper understanding of the Chinese vehicle inspection market, information is gathered belonging to areas such as laws and regulations, vehicle population, intellectual property protection, competitors, etc. This data is analysed with the help of the tools and models from the theoretical framework. The analysis consists of an evaluation of the opportunities and risks when entering the Chinese vehicle inspection market as well as how Opus Group can adjust the offerings to the Chinese context.

In the end, three alternatives are provided for entering the Chinese vehicle inspection market, the first one is by a direct investment, that is, acquiring a local vehicle inspection company; the second one is by expanding the current businesses and wait for the deregulation to occur; the third one is by utilizing the network opportunities in China.

Keywords: Vehicle inspection, Chinese market, adjusting the offering

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PREFACE

This thesis work is conducted by Yujian Lu and Edon Idrizi. The group members are currently studying the master program Supply Chain Management at Chalmers University of Technology. This thesis work was started 23d of February 2014 and finished 23d of September 2014.

During the course of the project, the group has acquired a deeper insight into the different contexts in which the industry differs from school textbooks, that is where theory and practice go hand in hand. This has been useful experience on which our knowledge in the areas we have touched in the project has evolved significantly, particularly in marketing and international economics. We have also acquired a great knowledge of how the vehicle inspection industry works and how to effectively put ourselves into a new and partly unknown area with the help of literature studies.

The group would like to give our special thanks to our supervisor Nojan Najafi from Chalmers, for all the help, support, valuable feedback and motivation he provided us with. We would also like to thank our contact persons in Opus Group, Magnus Greko, Peter Stenström, Thomas Sörensson and Bob Liang who have given us this opportunity and has helped us during the project and provided us with valuable information and feedback on the project.

Thank you for your interest and we hope that this thesis will provide you a deeper understanding of the vehicle inspection industry and the Chinese business context.

Gothenburg, 23d of September 2014

Yujian Lu
Edon Idrizi

1 INTRODUCTION

The chapter will introduce the background of this thesis and why Opus Group is interested in this project. Additionally, the chapter will present the objective and the outline of this thesis.

1.1 Opus Group

Opus Group was founded in 1990 and is an international provider of vehicle inspection services, technology and equipment. They are headquartered in Gothenburg, Sweden. Opus Group is among the biggest vehicle inspection companies in the world and ranks top 10 globally. They are leading in USA with 44% market shares and are ranked second in Sweden with 30.5% market shares after Svensk Bilprovning. Opus Groups' ambition is to be the leading player in the global market. Of the two business divisions, vehicle inspection contributes with 87% of the total turnover, which is also the most profitable area that Opus desires to expand in the Asian markets (Opus Group 2014). Some general information is shown in table 1.1 below.

Opus Group	
Founded	1990
Headquarter	Gothenburg
CEO	Magnus Greko
Revenue	$ 150 million
Employees	1900 people
Production facilities	USA, China and Sweden

Table 1.1 General information about Opus Group (Source: Opus homepage)

1.2 Background

The vehicle inspection market is a rapidly growing and developing market (Opus Group, 2014). Several vehicle inspection markets have opened up during the last couple of years through deregulation. This and the fact that the world is becoming more environmentally conscious have created new opportunities for companies like Opus Group to enter these markets in order to stay competitive. According to Kotler & Keller (2012), the key to stay competitive in a global market is internationalization, which is to enter new markets in foreign countries.

A place of particular interest for many companies around the world is China. Business opportunities in China have continued to flourish during the last decade, it is thus an interesting destination for many companies wanting to expand their businesses and to stay competitive (b2binternational, 2014). The number of vehicles in China is increasing more than ever. In 2009, the number of registered road vehicles was 62 million and this number has currently exceeded 200 million (China Auto Web, 2010). This increase has

unfortunately also been followed by an increase in the number of accidents and negative environmental effects (China daily, 2004).

According to a published report, less than 1 percent of China's 500 largest cities meet the World Health Organization clean-air criteria. This serious problem has been recognized by the Chinese people who have started pushing their government to do more. This has led the Chinese government to pass strict rules on reducing hazardous particulate matters such as PM 2.5 and PM 10 that the local provinces have to deal with in order to fulfill the national mandate (Mckinsey, 2013).

Continuous vehicle inspection programs can help to reduce these accidents and negative environmental effects by identifying and rectifying small defects before they become major issues, which can lead to unsafe vehicles. Well maintained vehicles run more efficiently and get the most of every drop of fuel, hence the emissions decrease. (puspakom, 2014).

Even though China is an attractive place to invest in, there are also many challenges. A challenge that companies most definitely will encounter in China is regarding the rulings on the protection of intellectual property (Forbes, 2012). This makes a foreign direct investment very risky for companies such as Opus Group, since they have a leading edge in the vehicle inspection technology and want to protect it when entering markets in other countries.

Another challenge in succeeding in the Chinese market is to understand the socio-economic aspects. These aspects are one of the foundations of success in doing business (Kotler & Keller, 2012), especially in China, since the business culture in China is completely different from other countries, this affects the set of values, ideas and attitudes the people have when doing business there (quickmba, 2000).

1.3 Aim and Problem discussion

In short, due to the unprecedented expansion the Chinese market is experiencing and the need for companies to stay competitive, China is an interesting destination for many companies. But the way of how to enter and succeed in the Chinese market differs from other countries due to the regulations and socio- economic factors. This, together with the environmental problems China is experiencing, the aim of the project can be formulated as:

How should vehicle inspection companies like Opus Group approach the Chinese market in order to enter and succeed in the market?

In order to make the aim approachable and elaborated in a systematic way with a clear structure, it will be broken down into three research questions belonging to three different categories.

1.3.1 Research questions

In order to fully capture the width and depth of the aim, it will be divided into research questions belonging to three categories. They are the Network architecture, Market offering and Market analysis. The reason why these three categories are chosen to analyze the aim are explained below.

According to Mason & Spring (2011), analyzing the network architecture is very important, since it helps to identify factors that help to spot different opportunities to succeed in a market. The network architecture consists of all the actors in the market, which are the competitors, customers and suppliers.

Kotler & Keller (2012) mention in their book that successful value creation needs successful value delivery. What is meant by this is that firms should not limit their focus to their immediate customers and competitors, but they should rather approach the market with a more holistic view in order to spot new trends and potential collaboration with other actors in the network. The network architecture also includes relationships with other firms and strategic acquisitions, this enables the company to enter the market and utilize the capabilities of others and hence deliver superior value to the target market.

The first research question is aimed at providing a deeper knowledge of the current network architecture by analyzing the factors that constitute it and give a notion on what to consider when entering new markets and how to do business there.

RQ1: What actors constitute the current network architecture in the Chinese vehicle inspection industry?

Kotler & Keller (2012) stress that an offering analysis is vital for companies wanting to build and sustain a long term growth in a market.

An offering analysis is not regarded as a physical product, but rather a way to reconfigure activities, products, services, information and experiences that stimulate and enable value creation (Mason & Spring, 2011). As has been mentioned in the introduction, the value is closely connected with the socio- economic elements, it is thus important for companies wanting to establish a successful business in China to know how different actors perceive value and adjust their offerings accordingly (quickmba, 2000).

The actors can be anyone from governmental institutions to the users themselves. These actors have different goals and for this reason they value things differently. (Mason and Spring, 2011). It is thus important to create or adjust the existing offerings so that a win-win situation is obtained for everyone. This leads to the following research question:

RQ2: How should vehicle inspection companies like Opus group adjust their offerings when entering the Chinese market?

The third category is the market analysis. This category is also very important to consider when entering new markets because it helps analyzing and monitoring the external factors that have an impact on an organization (professionalacademy, 2013).

The external factors can be the laws and regulations in the host country, government interventions, protection of intellectual property, environmental pollution and so on. These factors can be influential of how to enter a new market and of a successful establishment in that market. The third research question can be formulated as following:

RQ3: What socio-economic factors need to be considered when trying to do business in China?

1.3.2 Problem discussion

The three research questions will provide information that will make it easier to choose between different entering strategies. Depending on the business culture, laws and regulations, the protection of intellectual property, which places are most suitable for investment and so on, the company will have a good notion on how to enter the market and what is required to have a successful establishment in that market.

Entering strategies

According to Torres (2010), a marketing strategy for entering the Chinese market must be comprehensive in capturing the depth of the political, legal, economic, social, cultural and environmental systems. Entering complicated markets is not as easy as a walk in the park. There are a number of factors that need deep consideration before making such a step. For instance when a firm decides to enter a specific market, the next step is to decide a strategy on how to enter.

Choosing the right entry strategy for a new market is a crucial step since different entering strategies provide different opportunities and risks (Norris, 2011). When choosing the entry strategy the company must choose the strategy that will yield the most favorable outcomes in determining which will meet their objectives (Torres, 2010). The author also points out that entering the Chinese market poses new challenges not faced by many corporations and for this reason a deep research must be conducted with respect to the entry strategy for China, where the risk, capital and the availability of skills must be considered.

Many authors have explained different entry strategies for companies that want to expand their businesses and to enter new markets. One of them is Norris (2011), who describes three strategies that need to be evaluated and chosen from for companies wanting to establish a presence in the Chinese market:

- Entering into a joint venture
- Mergers and acquisition
- Developing an organization via Green Field development.

B2binternational (2014) mentions two other entry strategies: They are the sprinkler strategy and the waterfall strategy. The sprinkler strategy is explained as ‘’A firm adopting the sprinkler strategy will decide on which markets it plans to enter and simultaneously enter all these markets.’’ The sprinkler strategy, according to the author, is a high risk approach because of the high costs that are associated with entering foreign markets. The waterfall strategy according to the same source is a more conservative approach since the company enters the most profitable market first, also called a roll out policy.

But this thesis will focus on the entry strategies as explained by Kotler & Keller (2012) since the suggestion given by Kotler & Keller (2012) includes all the parameters given by the other authors and its components, except for the export entry modes. The entering strategies mentioned by Kotler & Keller (2012) are in its broad choices:

- Export entry modes
- Licensing
- Joint ventures
- Direct investment**.**

Kotler & Keller (2012) state that each succeeding option entails more commitment, risk, control and profit potential. The export entry modes are more suitable for production companies and are therefore excluded from the analysis, since the analysis is meant to aid vehicle inspection companies.

1. 3.2.1 Licensing

Kotler & Keller (2012) argue that licensing is a simple way to engage in foreign markets. Grünig & Morchett (2012) confirm this statement by describing licensing as a strategy in which companies can enter foreign markets without major capital investments.

Kotler & Keller (2012) further explain the concept of licensing as ‘’ a process in which the licensor issues a license to a foreign company to use a manufacturing process, trademark, patent, trade secret, or other item of value for a fee or royalty. The licensor gains entry at little risk; the licensee gains production expertise or a well-known product or brand name. ‘‘

Grünig & Morchett (2012) state that the type of licensing arrangements vary depending on the type of business the potential licensor is involved in. The author distinguishes between process licenses, product licenses and distribution licenses. In process licenses, the licensor gives the licensee the legal right to use a certain production technology that is usually based on a patent. In product licenses, the licensor gives the legal right to the licensee to manufacture a product or products in compliance with some defined procedures and processes. In addition to this, the licensor may give the licensee a distribution license that grants the right to market the service or product in a given area. Otherwise the licensor can keep the sales function and the licensee can be compared to a contract manufacturer.

Grünig & Morchett (2012) continue by mentioning some benefits and risks that licensing brings. Firstly, licensing gives a company access to foreign markets with low capital investments. It can also open the gates to difficult markets because the access to the market is granted by the local partner. Due to this local presence, the customer service by the licensee may improve the service levels in the foreign country. Another important benefit mentioned by the authors that can be derived by licensing is that many investment barriers can be omitted since the licensing company is not investing its own money.

Some drawbacks with licensing mentioned by the same authors are that the licensor needs to reveal its technology and disclose business knowledge to a foreign company. This, according to the authors, increases the risk of creating a future competitor. If the sales are also made by the licensee, the interaction between the licensor and the market will also decrease. Another drawback mentioned is that the reputation of the licensor is in the hands of the licensee, since they market and sell the service under the licensor‘s brand.

1.3.2.2 Joint Venture

Different definitions and pros & cons of joint ventures can be found by different authors. Norris (2011) defines a joint venture as an arrangement where the companies decide to create, for a limited time period, a new body and new assets by contributing equity. They both have control over the enterprise and share revenues, assets and expenses.

Kotler & Keller (2012) mention that large countries with complex markets such as China see much joint venture action. They further state that a joint venture may be necessary for economic or political reasons, because the foreign company might lack the physical, financial or managerial recourses to take on the venture alone. Another reason mentioned is that the government in the host country might require joint ownership as a condition for entry.

Grünig & Morchett (2012) also mention that working with a joint venture partner may have many benefits when it comes to market access and diversification of risk. For instance, the local partner may facilitate the service to local preferences due to the familiarity with the local market conditions. Furthermore, as stated by the authors, a local joint venture partner shares the risk of setting up operations in the target country and it can also speed up the process. The joint venture can in addition to this also provide access to local recourses, e.g. a distribution network.

Norris (2011) mentions that there are a number of industry sectors that require a Chinese partner and that other reasons for choosing a joint venture can be to utilize a Chinese partner‘s workforce and facilities and the regional market capabilities, that is a joint venture partner can help companies in building sales and market penetration. The author remarks that the know-how can be utilized for a specific period of time and then progressively the Chinese partner can be bought out.

Companies with foreign partners can carry out manufacturing and sales operations in China and can sell through their own sales network. Foreign-Chinese companies, also called Foreign – Sino companies, have some advantages compared to pure Chinese companies. For instance export rights, Chinese companies lack this right since China wants to import technology from abroad by encouraging joint ventures and frontline technologies (China, 2001).

Kotler & Keller (2012) mention some drawbacks that joint ownership may have. The partners for instance might disagree over the investment, marketing, or other policies. One party might wish to reinvest the earnings into the new entity for growth while the other parties want to declare more dividends.

Nzcta (2014) mentions other issues with joint ventures in China. One of these is that a

Foreign – Sino joint venture attracts higher level of official scrutiny by the Chinese authorities. Issues, such as operational, administrative and legal issues, that the Chinese companies have been able to get away with are less likely to be let go as soon as the foreign investor steps in.

The author therefore stresses that a legal due diligence, that is investigating the potential partner, prior to entering a joint venture in China is a prerequisite (Yong, 2013). Due diligence in China and its components will be examined in detail in Chapter 2.1.1.2

1.3.2.3 Direct investment

The ultimate way in which a firm can enter a foreign market is through direct ownership. That is, the foreign company can buy part or full interest in a local company or it can build its own manufacturing or service facilities (Kotler & Keller, 2012).

The authors continue by saying that a direct investment may offer distinct advantages if the market is large enough.

1. The foreign company secures cost economies through cheaper labor or raw materials, government incentives and freight savings.
2. The company strengthens its image in the host country because it creates jobs for the local population.
3. The relationship between the firm and the government, customers, local suppliers and distributors strengthens. This in turn enables the company to better adapt its products to the local environment.
4. The foreign company keeps full control over its investment and can consequently develop manufacturing and marketing policies that serve its long term international objectives.
5. The firm assures access to the market in case the host country insists that locally purchased goods should have domestic content.

Grünig & Morchett (2012) mentions some benefits that a direct investment may have. It signals commitment from the foreign company to the market. Setting up production or service facilities in a country makes the investing company an insider and local employer. Another benefit derived from a direct investment is that the employees are socialized in the target country and this helps the company to adapt to local tastes.

According to Kotler & Keller (2012), the main disadvantage of a direct investment is that the firm exposes a large investment to risks. These risks can be in the form of blocked or devalued currencies, worsening markets or expropriation. The authors further state that if the host country necessitates considerable severance for employees, closing or reducing operations can be very expensive. A type of direct investment that according to Norris (2011) has the greatest risks and rewards is a greenfield investment.

A greenfield investment, according to Investopedia (2014) is defined as ‘‘ A form of foreign direct investment where a parent company starts a new venture in a foreign country by constructing new operational facilities from the ground up.‘‘

According to Norris (2011) this entry mode poses the greatest risks mainly because it is difficult to estimate the outcomes of such an investment and due to the complexity of its establishment. But it provides complete control to the investing company and has the greatest potential of providing above- average return. Bartett (2009) also states that Greenfield investment is preferred in cases where there are no competitors to buy.

2 THEORETICAL FRAMEWORK

This section will construct the theoretical base of this thesis project. The theoretical framework consists of information collected from various books, articles etc. that function as a tool to analyze the empirical findings and hence be a basis for the analysis chapter. The theoretical framework is divided into three different areas: the Network architecture, Offering analysis and Market analysis and theory within these areas is found below.

2.1 Network architecture

Business networks contain many ordinary and dramatic events and one way to describe these events is by using metaphors. Traditionally, ‘’the jungle metaphor’’ is often used to describe the core of business networks, which is fierce competition among the actors in the network. Another metaphor supported by Håkansson (2009) is ‘’the rainforest metaphor’’. This metaphor presents the opposite picture than the jungle metaphor of the the business network, instead of focusing on the competition, it puts more emphasis on the interdependence between the actors of the network. The rivalry of the jungle metaphor is replaced by interdependency. Based on the theory above, this chapter will firstly dicsuss the relations with which the actors of the network affect one another, then a discussion about the competition among actors will follow.

2.1.1 Relationship

The rainforest metaphor does not view the actors as solitary entities, but rather as interdependent, which implies that each actor is dependent on one another in some way. A rainforest is characterized by an interdependence and collaboration among the actors that constitute it. This metaphor is then used to describe the complex relationships in the network, which are full of changes and difficult to interpret and predict (Håkansson, 2009). Among various relationships and interactions, business culture and due diligence are especially important when entering Chinese market, those factors will therefore be elaborated further in the following sections.

2.1.1.1 Business culture

Torres (2010) argues that China has a unique culture and philosophy that must be understood during any attempts of doing business there. The author then addresses that as a collective and neutral culture, the Chinese place a high regard on the concepts of *guanxi* and *mianzi*. Regarding the philosophy, it is divided into three parts, namely Taoism, Confucianism and Buddhism and they have to be understood in order to make business effectively in China. Besides, Sun Tzu’s stratagems and Maoist bureaucracy are also important elements of Chinese culture.

A *guanxi* focused paradigm is widespread and critical in China, which demonstrates the particular relationship two people have with each other. And *guanxi* can operate within any of the three situations: direct relationship, indirect relationship and a relationship through a contact person. *Guanxi* is part of the Chinese culture and therefore very important, it

requires both parties to reciprocate favours and benefits on a long term basis, while improper application of *guanxi* principles can result in ineffective strategies and increased cost (Anon, 1995; Torres, 2010).

Furthermore, Anon (1995) points out that there is a very close connection between *guanxi* and Chinese culture values such as trust, face, reciprocity, respect for ages and authority, harmony and long-term orientation. All these need to be appreciated and understood in order to success the business in China.

1. Trust. Many Chinese tend to be suspicious towards strangers with whom no relationship have been established. To protect one's benefits and make sure the opportunistic behaviors, such as adulteration of goods are kept low, trust must be established before any business relationships can be established. This is one significant reason why Chinese businessmen are always branded with slow moves.
2. Face and respect for age and authority. It is deeply rooted in the Chinese culture that it is better to suffer than to lose face. It is very important that during any decision of business negotiations, both sides should be seen to compromise so that neither will lose their face. Besides, it is also very important that the junior, young and subordinates do not make the senior, elder and superiors lose face, and pointing out the elders' faults straightforward in the public should be avoided.
3. Reciprocity and long-term orientation. *Guanxi* is related with reciprocity, a long term business relationship is based on a mutual beneficial *guanxi*. Gift-giving plays an important role in building and maintaining relationship, which is always regarded as the first step of a long term reciprocity. But, companies should always be very careful in offering gifts, because *guanxi* has often turned into a channel for corruption, usually there is a thin line between presenting gifts and corruption. If companies are involved in large-scale gift given, they will run the risk of being caught up in the government crackdown on corruption.

The business culture has regional differences as well, for example the northerners are perceived as more straightforward and generous but also more conservative and feudalistic, while southerners as more tender, democratic and enthusiastic. Although there are slight differences in establishing *guanxi* across regions, *Guanxi* itself tends to be universally applicable within China and even across borders, such as Taiwan and Singapore.

Torres (2010) continues that the concept of *Guanxi* is strongly emphasized and practiced in central and municipal governments, and with partnerships, suppliers, customers and employees. *Guanxi* is especially important in controlled or restricted industries. Even though *Guanxi* has lost a little gound in encouraged or unrestricted industries to market-focused competitive principles and practices, it still plays a significant role, since it is a part of the Chinese culture (Torres, 2010).

In conclusion, Torres (2010) states that because the abovementioned reasons, a standard approach of doing business in China is inefficient and companies need to be adaptive and reactive locally. That is to think globally while acting locally. Applying the localization principle to marketing management can help achieve two important goals: being close to the market and reducing operating costs.

2.1.1.2 Due diligence

There are many definitions on due diligence from various sources. According to the firm Astute Diligence, due diligence is defined as ‘’ an investigation of a business or person prior to signing a contract, or an act with a certain standard of care ‘’ (Anon., 2014). According to the same, due diligence in different industries can be exemplified as the process through which a potential acquirer evaluates a target company or its assets for an acquisition. This type of evaluation enhances the quantity and quality of information available to decision makers and thus contributes significantly to informed decision making.

Yong (2013) defines due diligence as ‘’ the assessment of the benefits and liabilities of a proposed investment by evaluating all imaginable aspects of the past, present and future of the business.’’ The author states that due diligence requires an understanding of the environment and the business, and to use that information to get an accurate assessment in order to shape reliable and predictable financial models. It includes an analytical analysis of the legal, financial, and operating activities of an entity in relation with a planned transaction that would result in a change of ownership of the entity.

The author continues by saying that an in-depth due diligence is important in helping to identify the workings and strategy of a company and to uncover any hidden issues. It also helps to identify problems within the business that may result in unexpected liabilities in the future.

In order for a due diligence to be good, it should be unbiased and made by independent professionals. It should be made with a positive attitude and with the cooperation of the management, since the management can pose road blocks to the team making the due diligence if there is no trust between them.

Firm (2014) gives many reasons on why due diligence should be conducted, including the following:

- Due diligence gives a confirmation that the business is what it appears to be
- It helps to identify possible "deal killer" defects in the target company and thus helps to avoid a bad business transaction
- The company gains information that is useful for valuing assets, defining representations and warranties and/or negotiating price concessions
- It gives a verification that the transaction complies with the investment or acquisition criteria.

Firm (2014) states that the amount of due diligence that a company should conduct is based on many factors. Among these factors are the size of the transaction, prior experiences, the probability of closing a transaction, tolerance for risk, time constraints, cost factors and the availability of resources.

Yong (2013) mentions that in order for the due diligence to be made in a systematic way and with a clear structure, a due diligence checklist is important. The checklist will be a helping tool for the due diligence team because it will cover important aspects of the business that should not be neglected and it will guide the entire due diligence process.Yong (2013) continues with the checklist by dividing it into two parts and naming them

1. The Compulsory checklists
2. The Optional checklists

The compulsory checklists contain the types of due diligence that cannot be missed in the evaluation of every transaction. The optional checklists on the other hand are aimed at detecting the blind spots of a transaction, depending on the uniqueness of the industry or the target company and are not to be taken lightly either.

The components of the compulsory checklist according to Yong (2013) are:

- ✓ Financial
- ✓ Operational
- ✓ Commercial
- ✓ Legal and intellectual property
- ✓ Balanced scorecard
- ✓ Predicting bankruptcy

The financial due diligence is explained by the author as ‘’the need to understand the accounting issues and the underlying profit and getting the assurance that the balance sheet is relatively clean and that profit and loss statements have not been overly manipulated outside the legal framework.’’

In order to ensure the authenticity of the financial and accounting figures the author suggests that a proportion check should be used. Yong (2013) explains the proportion check as a check in which various related variables within the financial and operational aspects in the target company are examined. These variables are essentially anything that can be quantifiable in a company. They can be anything from sales, utilities, number of production lines, bills, number of R&D personnel employed to the number of operating hours of the plant.

The check is built on the simple, elegant but yet overlooked reasoning that the, spending on, employment of, or receipt of one or more related variables, should have a proportionate outcome of the use or receipt of one or more related variables in the target company. These relationships between variables should provide the investors with a good estimate of how

operationally or financially sound the target company is. However, sometimes the value of one variable cannot easily be pinpointed as the direct impact of another variable(s), but the general dependency should still be identifiable.

Yong (2013) concludes by stating that the proportion check is in essence a quick sanity test for the due diligence team to confirm the large volume of claims made or filed by the target company's management. If the proportion check reveals variable relationships that violate logical sense or conventional industry norms, then the due diligence team can make a deeper investigation. Yong (2013) explains the optional checklists by saying that they cover aspects of a transaction that may be critical to many particular industries but may not be as important for some. The optional checklists may include:

- ✓ Human resource
- ✓ Sales and marketing
- ✓ Culture
- ✓ Environmental

2.1.2 Competitor analysis

The events that take occur in the business world are often seen as a rivalry in a jungle- like landscape. The metaphor amplifies the aggressive behavior among the actors in the network. It claims that fighting is the main way to achieve high efficiency and a sound business development. The competition among products and goods is deemed as the central development force in the business world (Håkansson, 2009). Thus, in order to survive in the jungle, each actor needs to identify its competitors, study their behaviors and fight for a competitive advantage (Marglin, 2008).

According to Cvitkovic (1993), competition has been regarded as one of the strongest societal forces in the current society, and business competition is becoming the undisputed source of economic growth. Since every commercial organization is exposed to competition, managers have to continually make competitive decisions in order to succeed in the market (Wilson, Richard, 1994). Thus companies should design offers to retain competitive advantages that satisfy targeted customer demands more than the competitors (Kotler et al., 2008). Competitor analysis, defined by Charles Doyle (2013, *is the analysis of competitors' strengths and weaknesses, strategies, assumptions, resources, and market positioning from all available sources of information, in order to identify suitable market strategies*.

The process includes three steps: 1) identifying and mapping competitors; 2) defining and describe them; 3) evaluating and analyzing them (Grant, 2002). Kotler et al., (2008) also describes the process in the similar ways, beginning by identifying the company's competitors, followed by assessing the competitor's' objectives, strategies, strengths, weaknesses and reaction patterns and finally by choosing which competitors to attack or avoid.

2.1.2.1 Identifying competitors

The first step of the competitor analysis process is to identify the current and latent competitors. There are two approaches to differentiate the competitors. The first approach is based on the customer's perspective and it looks at the degree the competitor can satisfy a buyer's demand. The second approach categorizes the competitors by their competitive strategy. But Simkin & Cheng (1997) state that the strategy-based approach works better in the defining and describing stages. In the competitor identification stage, questions belonging to the following type are raised: Who are the competitors? Who are the potential competitive entrants? What are their barriers to entry? (Aaker, 2007).

Competitors are divided into direct, indirect and potential competitors. The definitions are based on resource similarities and market commonalities, see the figure below for a more holistic view.

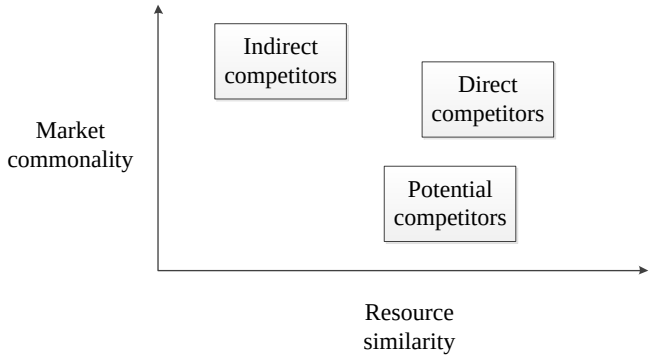

Figure 2.1 Mapping the competitors (Source: Bergen and Peteraf, 2002)

Direct competitors have the same market segmentation and use the same resource structure. Indirect competitors serve the same market but with a different resource structure. Potential competitors are new entrants, which have similar resources but do not target the same market at the time being (Bergen and Peteraf, 2002). Though potential competitors are not strong enough when compared with the direct and indirect ones, warned by Kotler et al., (2008), companies should avoid "competitor myopia", many cases showed that a company is more likely to be "buried" by its potential competitors rather than current ones.

Two ways are usually used in this approach, either identifying the customers by customer choice or by product- use associations. When identifying the competitors by customer choice, one needs to examine the competitors from the customer's viewpoint. When the identification is made by product – use associations, the customers will be asked to list the use- situation or how they applied the product as well as the use context in each situation. Then another group of users will have to judge how each product matches each context. Finally, the products would be grouped on the base of similarity of their appropriate use context.

2.1.2.2 Defining and describing competitors

The second step of the process is to define and describe the identified competitors. In order to get a better understanding of the competitors and to be able to define each competitor in an appropriate way, some detailed aspects have be studied such as the background, products, services, finances, culture, market, resources, capabilities and strategies (Grant, 2002).

Another way to describe the competitors, as mentioned before, is to place them into different strategic groups. According to Aaker (2007), the strategic groups offer a different way to understand the competitive structure of an industry. A strategic group is a group of companies that over time pursue similar competitive strategies and have similar characteristics, assets and competences. Each strategic group has mobility barriers that inhibit or prevent them from moving from one group to another, a company that wants to compete across the barriers will always be at a disadvantage. The barriers such as assets and competences can be a sustainable competitive advantage by protecting one company from the competition. By reducing numerous competitors to a small number of strategic groups, the conceptualization of strategic groups make the competitor analysis more manageable, compact, feasible and usable.

2.1.2.3 Evaluating and analyzing competitors

The aim with analyzing the competitors is to gain enough knowledge to be able to predict their future reactions (Kotler et al., 2008). Aspects that should be taken into consideration are: The rivalry among the competitors and threat of new entrants (Law, J., Owen, G, 2010).

A significant factor that required a deeper examination is the rivalry among competitors. According to Grant (2002), one of the many different factors that have a big influence on the rivalry is the number of companies in the market. Few companies that have large market shares are less competitive than many companies that occupy similar market shares. Other factors, such as the level of product differentiation and substitute switching costs also affect the competition in the market.

The future threat of new entrants has to be taken in consideration by the company as well. New entrants can be companies that use the same resource structure and offer the same products or services to the same customer segment. New entrants are most likely to appear in high profit margin industries, either because the entering barriers are low, the large customer demand cannot be satisfied by the current companies or because it is easy to gain a competitive advantage over the existing firms and because there is a large potential for future growth. New entrants will increase the competition in the market, so it is necessary to predict when and where the new entrants will appear. Counter measurements can be to increase the barriers to prevent or discourage them from entering the industry (Min, Petra& Karin 2006; Grant, 2002).

2.1.3 Entry barriers and Exit barriers

There are many definitions of an entry barrier. McAfee, et al. (2004) mention some of the definitions:

"A barrier to entry is anything that prevents entry when entry is socially beneficial."

"A barrier to entry is anything that prevents an entrepreneur from instantaneously creating a new firm in a market. A long- run barrier to entry is a cost necessarily incurred by a new entrant that incumbents do not (or have not had to) bear."

Entry barriers can arise due to many different factors, among these are different kinds of government interventions, such as different kinds of industry regulations, legislative limitations on new firms, special tax benefits to existing firms etc. They can also exist naturally in the business world and can be changed by the companies in that specific industry. These entry barriers can be a result of various patents, such as technological patents and patents on business processess, a strong brand identity and a strong customer loyalty and high customer switching costs, which means that it may be difficult and costly for customers to change from one provider to another (Venturenavigator, 2007).

Other typer of entry barriers can be a result from intellectual property protection. This protection can limit an entry to a market by preventing potential costumers from using equally efficient technology or business processes for a given period of time (Hofstrand, 2007).

An exit barrier on the other hand is defined as '' A barrier to exit is something that blocks or impedes the ability of a company (competitor) to leave an industry'' (Hofstrand, 2007). Exit barriers can be in the form of high fixed costs and they tend to be an impediment to leaving an industry. Another type of exit barrier is highly specialized skills that cannot be used in other industries. In the same way, investment in specialized equipment that cannot be readily used in other industries tends to be an exit barrier.

The Hofstrand (2007) continues by combining the entry and exit barriers in different ways and explains that by doing this, the market rivalry, stability and profitability can be predicted.

The first combination is a market that is easy to enter but difficult to exit. This market is characterized by an intense competitive rivalry and low profitability. As soon as the competitors notice a sign of excess profitability in the market, they flock to the industry. However, when profitability falls, it is difficult to leave the industry so the profitability remains low.

The second combination is a market that is difficult to enter but easy to exit. This market has limited competitive rivalry and tends to have good profitability. Competitors find it

difficult to enter the market during times of good profitability. However, during period of low profitability, competitors leave the market easily.

The third combination are markets that are both easy to enter and easy to exit. The characteristics of this market is that it changes easily and supply responds quickly to the demand and the prices tend to stabilize. The competitive rivalry is moderate because of the easy flow of business into and out of the market.

The forth combination are markets that are both difficult to enter and difficult to exit. These markets are static and change slowly. The supply changes slowly to market signals and prices respond strongly to changes in demand. The competitive rivalry can change radically due to changes in demand.

2.2 Offering analysis

The vulnerability to competition of product-based business models forces companies to rethink their ways of delivering value to customers (quoted by Katy & Martin, 2011; Lindberg & Nordin, 2008; Windahl & Lakemond, 2006). Market offering, according to Norman (2001), includes the respective roles of products and services in business models. Araujo, L. & Spring, M. (2006) also state that a market offering focuses more on the interaction between producer and user instead of a particular product or service. Thus, a market offering is defined as "a way to reconfigure activities and stimulate and enable value creation"

2.2.1 Setting product strategy

Kotler et al. (2008) states that high reputation brands are supported by their core products. The product is the key element of the market offering. Thus, if a company wants to retain a competitive advantage over their competitors, premium products and services have to be offered.

Shaping a market offering starts by designing an offering that satisfies the customer demands, and customers will judge the offering based on the criteria consisting of the following elements: Product features and quality, services mix and quality and price (see figure 2.2).

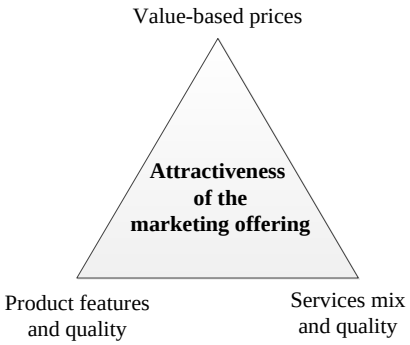

Figure 2.2 Components of marketing offerings (Source: Kotler et al., 2008)

When the offering refers to products, what is most often thought about is that they are tangible objects but Kotler et al. (2008) argues that products are anything that can be offered to a market, including physical goods, services, services, experiences, information, ideas, etc. Prof. Suvendu Kr. Pratiharit also defines products as a complex cluster of value satisfaction or the total package of benefits the customer receives when he/she buys and uses them.

When designing a market offering, the company should position its products beforehand. The amount of value provided to the customers is based on the product level. According to Kotler et al. (2008), the five product levels also represent the customer-value hierarchy, each level adds more value to customers. (see figure 2.2).

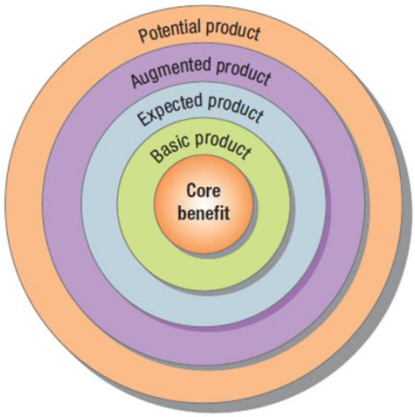

Figure 2.3 Five products levels (Source: Kotler et al., 2008)

- **Core benefit** is the fundamental level, i.e., the service or benefit the customer is really buying.
- At the second level, the company or marketer needs to transfer the core benefit to a **basic product**.
- An **expected product** will be served in the third level. The product will satisfy the normal expectations of a customer.
- At the fourth level, the marketer prepares an **augmented product** that exceeds customer expectations, brand positioning and competition happen in this level in

developed countries, however, in developing countries, the competition usually take place in the **expected product** level

- At the fifth level, it comes to the **potential product**, including all the direct and indirect demands which will surprise the customer. Here is where companies sharp their competitive edges and differentiate their offerings.

Intense competition and high level differentiation usually occurs due to the product augmentation. This phenomenon also encourages companies to analyze customers' consumption system, i.e., the way customer purchase products or services. The added augmentation results in more costs, but companies will obtain corresponding profits in a long term perspective.

2.2.2 Designing and managing service

Kotler et al. (2008) defines a service as any act or performance one party can offer to another that is essentially intangible and does not result in the ownership of anything and the production of a service will not be tied to any physical products.

As it becomes increasingly difficult for companies to differentiate themselves in the market, service differentiation is recommended. It is common for companies to provide various value-added services in order to cultivate the customer loyalty and to stand out in the crowd and it is profitable in the long run to increase the service level, i.e., on-time delivery, faster responsiveness or quick resolution of complaints.

2.2.2.1 Service mix

In order to provide value-added services, it is necessary to classify the offering. According to Kotler et al. (2008), the service components can be categorized into five types.

1. Pure tangible goods - a tangible good, such as salt with no accompanying services.

2. Tangible goods with accompanying services - a tangible good, like a car with added services.

3. Hybrid - the offering is a product and an attached service.

4. Major service with an accompanying minor product and service – it is suitable for capital-intensive goods.

5. Pure service - primarily an intangible service.

The service components are affected by many other factors, such as whether the services are equipment based (automated car washes, vending machines) or people based (window washing, accounting services); the ownership is private or public. Before designing a service offering, companies should take these factors into consideration.

2.2.2.2 Service differentiation

Customers see service as humongous while they put more emphasis on the price rather than the provider. So in order to be competitive, companies need continually differentiate their brands.

Primary and secondary service options help to achieve this. Primary service is what customers expect to get, while secondary service is what the company adds to the primary service.

A challenge for a service offering is that it is easily imitated and due to this, the company can only keep a temporary competitiveness by using a service differentiation.

2.3 Market analysis

This section has collected the theoretical base regarding important factors that should not be left out when analysing a certain market. Issues regarding laws and regulations in China have been explained and their importance when entering the Chinese market. An intellectual property right has been defined and the protection of intellectual property rights has been described in a theoretical way, highlighting its importance when attempting to enter the Chinese market and describing different ways on how establish this protection.

2.3.1 Laws and regulations

According to Mark Hedley, it is critical to understand government policies and regulations in order to success in China. Though China joined the WTO in 2001 and this was followed with a liberalization of many industries, still a lot of areas are heavily regulated. Any foreign company looking to set up local production in China should first consult the Chinese foreign investment catalogue, which has categorized foreign investment projects into ‘encouraged', ‘restricted' and ‘prohibited' aspects.

An increasing number of industry- specific regulations and laws have been issued due to the fast development of Chinese economy, which both local and international companies should obey. Now, there are a number of different ministries and regulatory organizations that are responsible for industry regulations and laws. In industries with many different regulations, foreign firms will have to unravel the web of these complex laws and regulations and figure out which authorities or organizations possess the main responsibility for implementing them.

The laws and regulations are becoming more and tighter for foreign companies owing to many issues, especially issues belonging to sensitive industries such as the food and environmental industries. These last years environmental pollution has been very serious in China, so from now on companies are required to pass a lengthy environmental assessment before they are allowed to have manufacturing operations in China. Usually these policies have a significant impact on the costs of entering new markets in China, companies need

therefore to take the implications of such regulations into consideration before making any serious attempt of entry.

Chinese regulations often operate in a relatively opaque way, which makes it cumbersome to predict changes and trends. Furthermore, the Chinese policies are often in vague words and can be interpreted in various ways.

2.3.2 Intellectual property

Ove & Marcus (2014) define a property as "a resource with some form of assigned ownership "and define an intellectual property as "a property of intellectual or intangible character''. The authors continue by defining an intellectual property right (IPR) as " a legally codified right created and used to assign ownership to intellectual resources such as knowledge, technologies, brand names, and other types of intellectual creations''. The authors further explain what may be included in the family of IPRs. It includes patent rights, copyrights, design rights, trademark rights, technology rights, trade secret rights and some other types of secondary rights.

Other authors have also mentioned some factors that are included in this family, according to Hinson (2014) inventions, designs, original works of authorship and trade secrets are included.

One reason why IPRs are granted is to incentivize investments in creating and commercializing new intellectual resources to improve the creation of innovations of different kinds to the benefit of consumers and society in general. IPRs have received critique though, not only because it creates monopoly distortions, but also for counteracting innovativeness because of their isolated exclusionary nature (Ove & Marcus, 2014).

According to Hinson (2014), it is crucial for a company to protect their intellectual property for the success of their business since it provides a competitive advantage in relation to the competition and hence gives them economic benefit. The author continues by explaining that depending on what intellectual property a company has, the way how to protect it varies. The author mentions three different ways, namely:

1. Patents
2. Copyrights
3. Trademarks

The first way mentioned by the author are patents. If a company has developed a new product or process that is unique and useful, the company can protect the competitive advantage attained by this innovation by obtaining a patent. This can stop third parties from making, using or selling the innovation for a specified period depending on the innovation. If the company is one in which inventions are created often, it is vital that a clear understanding about who owns the inventions is established. The company has to make sure

the workers sign an agreement that all the innovations made by them while working for the company belongs to the company.

The second way of protecting intellectual property according to the author are copyrights. The author explains what it does as ‘’ A copyright provides protection for original works of authorship, fixed in a tangible medium of expression including literary, musical, and dramatic works, as well as photographs, audio and visual recordings, software, and other intellectual works.’’ (Hinson, 2014) The author states that the copyright protection begins as soon as the work is set in a tangible medium. If the author begins the work by using the copyright symbol immediately as a method of informing others that he/she intends to exercise control over the production, distribution, display, and or performance of the work. It is not necessary to file for copyright protection, but doing so will facilitate to seek court enforcement of the copyright.

The third way mentioned by the author are trademarks. It prevents other companies from selling a product under the same name as another company. The author states that trademark law also protects consumers from confusion and deception by this prevention.

If a company instead sells a service, a service mark is used. Being the first company that uses a specific name for a product is important to protect the continuing right to use the name. Either way, filing is important for enforcement purposes. (Hinson, 2014) The author continues by explaining how to file for a trademark registration. The first step is performing a trademark search and this is very important since it prevents a company from investing a lot of capital in the promotion of a product or service under a trademark that is already in use.

3 METHOD

This chapter describes the way this thesis is conducted. The chapter starts with an explanation of the research strategy that has been used and continues with the chosen method for the data collection and work process.

3.1 Research strategy

This thesis is categorized as a case study based on a systematic combining approach derived from the ‘’abductive logic’’ concept. A systematic combing approach means that one should continuously move back and forth between an empirical world and a model world, which seems to be the best approach in this thesis (Dubois & Gadde, 2010). Gillham, B. (2010) defines a case study as “a unit of human activity embedded in the real world; which can only be studied or understood in context; which exist here and now; that emerges in with its context so that precise boundaries are difficult to draw”. Bryman and Bell (2011) state that a case study has to be differentiated from other research approaches because it is bounded to a system or a situation. The system or situation can be a specific organization, department or person. In this thesis, the case is a company within the vehicle inspection industry aiming at entering the Chinese vehicle inspection market.

A qualitative research method will be used even though a limited amount of quantitative data is collected, such as the vehicle fleet and its growth rate, etc. Qualitative data, according to Eriksson and Wiedersheim-Paul (2008), offers a high degree of nuance in the analysis. Wallén (1996) also states that a qualitative analysis is necessary when investigating an occurrence without a single wrong or right answer. Furthermore, Lucio Lamberti (2014) states that the qualitative analysis is more beneficial in dealing with the “preconscious” and “subconscious” information, such as the underlying motivation or reason of a scenario. These phenomena are often unstructured and difficult to measure. In this project, the qualitative approach is more proper in dealing with the collected data regarding the market situations, legislation and socio-economic aspects of China.

Researchers often take quality characteristics such as validity and reliability in consideration when conducting a ‘’deductive approach’’- based research. These quality characteristics follow a sequential process in a deductive approach (Dubois & Gadde, 2010). In the abductive approach, Dubois & Gadde (2010) argue that the transparency is a synonym of quality characteristics. Transparency denotes that the research is completely elaborated so that the complicated interrelation among theory, empirical world and method is visualized.

3.2 Research process

The aim of this thesis is to investigate how vehicle inspection companies like Opus Group should approach the Chinese vehicle inspection market order to enter and succeed in the market. The aim, however, is broadly formulated and this makes it difficult to analyze from the theoretical and empirical dimensions. Therefore, it is broken down into three explicit research questions. The first one is ‘’what actors constitute the current network architecture in the Chinese vehicle inspection industry’’. The second is ‘’how should vehicle inspection companies like Opus Group adjust their offerings when entering the Chinese market’’. The last one is ‘’what socio-economic factors need to be considered when trying to doing in China’’.

In order to avoid making hastened solutions, a systematic combing approach was selected to continually move between the theory and the empirical phenomena. The data collection was thus based on the theory and the theory in turn was used as a tool to analyze the data afterwards. The theoretical study began with a preliminary research for relevant information using the key words “feasibility analysis”, “entering strategy”, “enter new emerging market”, etc., from books, articles, journals and E-resource in the library and on the Internet. The purpose of the research was to gain knowledge and get an overview of the models that could be applied. Eventually three dimensions were selected based on Mason & Spring’s business model to construct this thesis: Network architecture, Offering analysis and Market analysis. These dimensions became the cornerstones of the study. The initial demand from Opus Group was mainly to find out some quantitative data such as the vehicle fleet and its growth rate, the number of vehicles tested per year, etc. with the purpose to get an overview of the industry in Asian countries, with a focus on China. As the project moved forward, however, other demands arose: investigating the Chinese business culture and the IP protection were added after the telephone interview with Bill Dell, the head of development of Opus Group. This made it difficult to cover everything in this project due to the time limitation. After the meeting with our supervisor from Opus Group, it was finally decided to only focus on the Chinese vehicle inspection market. When going deeper into each theoretical dimension, there was a lack of information regarding the network architecture and the subject too broad to make a complete analysis. After several meetings with the supervisor from the industrial marketing department, the network architecture was divided into relationship, competitor analysis and entry & exit barriers, the scope of the market analysis was also tailored in such a way that only the laws and IP were included. Additionally, it was agreed with the supervisor that all the three dimensions should be used in order to choose a suitable entering strategy for Opus Group.

In order to guide the empirical data collection process, a number of questions were formulated. The questions were categorized by the three dimensions (see Table 3.1). Furthermore, the data was analyzed based on the models from the theory. A continuous check of the empirical data and the theory was made to ensure they matched each other, this check was made simultaneously with the analysis process. In the end, the thesis was

summarized and a specific entry strategy was given in the conclusion part, the research process is explained in figure 3.1 below.

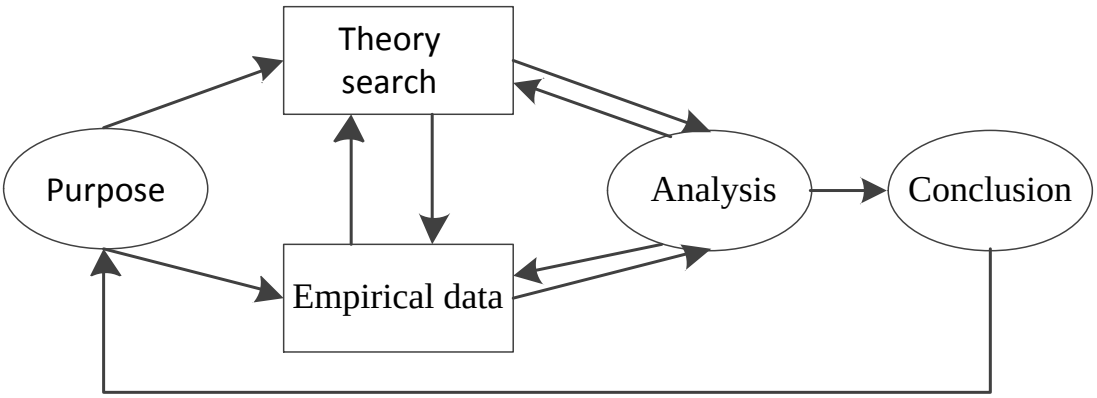

Figure 3.1 Research process

3.3 Data collection

The empirical study works together with the search for the relevant theory and all the data that is collected is supposed to meet the final purpose. In order to develop this section in a clear and systematic structure, a number of questions are formulated to guide the data collection, see the table 3.1.

Theoretical Framework		**Data collection Guide Questions**
Network Architecture	Competitor analysis: • Identifying competitors • Defining and describing competitors • Evaluating and analysing competitors	Who are the actors of China vehicle inspection industry?
		Are there any international companies that have already entered the Chinese vehicle inspection market? (i.e. SGS)
		For each region, find out when vehicle inspection started, are they invested by foreign companies?
	Relationship: • Business culture • Due diligence	-
Offering Analysis	Setting product service strategy Designing and managing service	What are Opus's offerings? (products and service)
		Total number of vehicles (different categories)
		Number of vehicles sold per year, over the last 10 years to see the vehicle growth
		Current economic situation in each region
		Which area does vehicle industry belong to? (allowed/encouraged/restricted / prohibited)

Market Analysis	Laws and regulations	What is the requirement for investment amount?
		Do different provinces have specific regulations? (mandatory or not, test vehicle types)
		Are vehicle inspection companies public or private in China?
		What laws set the entry barriers for establishing a vehicle inspection station in China? (environment, investment amount, ownership forms)
		Does the government have any plans to introduce vehicle inspection programs in any new regions?
	Intellectual property	What is the current situation of protecting new technology? (Patent and about foreign companies)

Table 3.1 Data collection guiding questions

In this thesis both primary and secondary data were used. Primary data is data that has not been collected and analysed before. Secondary data is the data that has been collected and used for other purposes (Bryman and Bell, 2011). The advantages and disadvantages of each type of data are listed in table 3.2 below.

	Advantages	Disadvantages
Primary Data	● Accuracy ● Up to date information ● Easier to understand	● High costs ● Low responsiveness
Secondary Data	● Quick and low collection costs ● Often certified by third party ● Cheaper	● Obsolescence ● Low adaptability of data ● Relative inaccuracy

Table 3.2 Primary and secondary data (Lucio Lamberti, 2014)

Due to the lack of transparency regarding information belonging to the vehicle inspection industry in China and the fact that the vehicle inspection industry is a highly regulated industry that has experienced a few researches before, some secondary data could not be collected directly or were not reliable enough. Hence, some primary data based on semi-structured telephone interviews were needed. Semi-structured interviews were selected because Bryman and Bell (2011) state that they are flexible and it is preferable in a qualitative interview that the interviewee has plenty of freedom to decide how to answer. It also allows enticing interviewees to talk about topics which would otherwise be excluded in the interview guide and it permits the interviewer to gain a clear and comprehensive picture

of the subject. Semi-structured interviews are suitable in this thesis, since the Chinese vehicle inspection industry is complicated and new situations often emerge when the investigation is made deeper. Any information about this market, even outside the guide is preferable. Some interviews are conducted with Opus Group's competitors which made it inappropriate to include some questions in the guide but could be asked "accidentally" in the interview. The disadvantage of semi-structured interviews is that it requires skill and improvisational abilities of the interviewer. The interviewer must be able to pick up the verbal hints and be able to read the body languages to judge which topic to pursue further in a very short time. Besides, the interviewrt must be able to retain the topic in case of being leading by the interviewees. Moreover, it requires careful preparation beforehand, so that the results from different interviews are comparable. In order to ensure the quality of each semi-structured interview, it was prepared carefully in advance, a topic and interview guide were fixed and different situations were brainstormed so that the interview could be guided by us. The primary data collected from the interviews are mainly about the laws and regulations in China regarding the vehicle inspection industry, international vehicle inspection companies that are active in China, Chinese business culture, etc., the primary data provided a different overview about the Chinese vehicle inspection industry from what the secondary data did. See the list of interviews below.

Secondary data are gathered from a variety of sources, such as news, government released information, consultant companies' publications, competitors' promotional materials and homepages, papers and journals etc. Collecting secondary data from multi-sources is to get a better understanding of the industry in China. It is also to avoid using inaccurate and outdated information. Secondary data are more frequently used in this thesis, because it was difficult to hold interviews with companies or institutions that have no business relationships with Opus Group, some interviewees were reluctant to answer the prepared questions which made no sense to them.

Name	Title	Company	Dates	Length (min)	Topic
Xiaodong Ban	Assistant Engineer (2001~2005)	Motor Vehicle Inspection and Maintenance Center of Shandong Jiaotong University	2014-07-20 2014-07-28	30	Laws and regulations; international vehicle inspection companies that active in China; entering strategy
Kun Shan	Customer Service (Nov. 2013~ Feb. 2014)	Anlong Shiyan Motor Vehicle Safety Inspection CO. LTD	2014-06-20 2014-07-13 2014-07-20 2014-07-30 2014-09-03	60	Laws and regulations; international vehicle inspection companies that active in China; inspection price
Bob Liang	Production Manager	Opus Group	2014-08-13 2014-08-28	40	Laws and regulations; international vehicle inspection companies that active in China; business culture; inspection station number
Thomas Sörensson	Export Sales Manager	Opus Group	2014-09-03	20	Laws and regulations; international vehicle inspection companies that active in China; business culture; entering strategy
Qiao Yue	Customer service	TÜV SÜD Group	2014-08-25	15	Laws and regulations; international vehicle inspection companies that active in China; business culture
Cheng Guo	Consultant	Shanghai Wanqi Intellectual Property Agent Co., Ltd.	2014-09-07	15	Registering a vehicle inspection company in Shanghai; laws and regulations
Marcus Huang	-	Dekra	2014-08-13	10	Laws and regulations; Entering strategies
Charles Qiao	-	TÜV SÜD Greater China	2014-08-25	-	(Email interview) Laws and regulations; Entering strategies

Table 3.3 List of interviewees

4 EMPIRICAL STUDY

The empirical study is aimed at collecting information and data based on the theoretical framework. The data collected includes the offerings of Opus Group, the laws and regulations in China and the current market situation.

4.1 Opus Group

Opus Group operates vehicle inspection programs and develops, produces and sells equipment and IT systems for the vehicle inspection industry in two divisions, namely Vehicle Inspection and Equipment.

The division Vehicle Inspection consists of two segments and stands for approximately 90 percent of Opus Group's turnover. The two segments are Vehicle Inspection International and Vehicle Inspection Sweden. Vehicle inspection international is active in the North and South American markets and operates vehicle inspection programs, offers emission control sales and servicing. Vehicle Inspection Sweden consists of Opus Bilprovning, with 73 vehicle inspection stations. The majority of the sales for the Vehicle Inspection division are in Sweden and the U.S.

The Equipment division stands for approximately 10 percent of Opus Group's turnover and develops, manufactures and sells equipment for vehicle emission and safety inspections, including after-sales service and support in about 50 countries. The goal for the Equipment division is to offer comprehensive solutions to test stations or workshops. The business divisions can be seen in table 4.1.

Division	Segment	Offering
Vehicle Inspection	Vehicle Inspection International	Vehicle inspection programs (centralized and decentralized)
		Design, construction and operation of vehicle inspection stations
		Vehicle Inspection Database systems (VID's)
		Emission testing through direct measurement, electronic of OBD-system, Evaporization (EVAP), Remote Sensing
		Equipment for emission inspection
	Vehicle Inspection Sweden (Opus Bilprovning)	Regulated and non-regulated vehicle inspecions
		E-diagnosis
Equipment	Opus Equipment	Emission and safety inspection equipment such as: Exhaust gas meters, remote OBD, brake testers, ATL.
		Workshop equipment: Diagnosis equipment, compressed air equipment, tire and wheel equipment, hoists and consumables.
		Fleet management: Breathalyzers, IID, electronic driver logs.
	J&B Maskinteknik	Installs and preforms servicing on equipment for vehicle inspection facilities and vehicle workshops in Sweden.

Table 4.1 Business divisions of Opus Group

4.1.1 Vehicle Inspection

The Vehicle Inspection division is built up by two segments, namely Vehicle Inspection in Sweden and Vehicle Inspection International. The following sections will describe these two segments and the services and products they offer respectively.

4.1.1.1 Vehicle Inspection Sweden

The segment Vehicle Inspection Sweden is made up by the subsidiary Opus Bilprovning. Opus Bilprovning has a competitive position, with more than 30 percent share of the Swedish market and has a broad range including mandatory and optional services in emission and safety inspections for both light and heavy vehicles.

The mandatory services include all regulated vehicle inspections and are specified by the Swedish Transport Agency. The non-regulated, optional services consist of inspection-related testing, quality control services and customized services. E-diagnosis is also offered to customers with passenger cars of model year 2002 and later and contain inspection of the vehicle's electronics, that is everything from brakes to power windows and ACC. The E-diagnosis are sold to private individuals as an addition to the roadworthiness inspection.

The core of the operations is the periodic vehicle inspection and is made to ensure the safety of the road users and the environment. The periodic vehicle inspection is made by certified inspectors and includes internal/external inspections, checks and measurements. If the vehicle fails the periodic inspection due to some detected defect, the defects will have to be rectified and a re- inspection is carried out.

The voluntary service offer consists of non-regulated services. It includes customized services and quality control services. The company customers using the voluntary services consist of trucking companies, auto repair shops, car manufacturers, car dealerships and bus and taxi companies.

4.1.1.2 Vehicle Inspection International

The Vehicle Inspection International division comprises the operations conducted in Opus Inspection which runs vehicle inspections programs on contract in North and South America and other places.

Opus Inspection is the only vehicle inspection company in the world that offers a complete inspection program with a full supply of vehicle inspection equipment with software and advanced IT systems and database technology. The range of products and services include operations of vehicle inspection programs, Vehicle Inspection Databases systems (VID) and emission testing equipment for both centralized and decentralized vehicle inspection programs.

The VIDs functions are that they store all the data from a vehicle inspection and then compare the vehicle specific data with the authority's database. They check the vehicle inspection program and the vehicle inspection station's parameters and analyze all aspects

of the results. Opus Inspection develops VIDs for both centralized and decentralized vehicle inspection programs.

(1) Operation of Vehicle Inspection programs

Operation of vehicle inspection programs implies that Opus Inspection offers a complete solution in vehicle inspection which may include the design, construction and operation of stations, VID's, centralized or decentralized vehicle inspection programs, test lanes for safety inspections, training, program review, and accreditation and certification of stations.

(2) Emission test equipment

Emission test equipment is fully computerized control systems for vehicle emissions that can be coordinated with VID's. It is used to check vehicle exhaust emissions. There is two main ways to do the verification, firstly by measuring directly in the exhaust pipe, which is primarily used in older vehicles and secondly through an electronic readout of the vehicle's OBD system which is used on newer vehicles. Another method of measuring the emissions has been introduced in several markets. These method is called EVAP (Evaporisation) and checks that no unburnt hydrocarbons are emitted from the tank. These tests are currently only made in the state of California.

Opus Inspection offers three types equipment for emission inspection. The first type is based on "ASM technology" where the car is strapped to a dynamometer and tested in two steps under load at various speeds while the car's exhaust is measured in the exhaust pipe. The second method is called "two-step-idle" in which the car is tested at a workshop by the exhaust gases measured in the exhaust pipe. The third method measures the car's exhaust through the OBD system that is based on the car's OBDII diagnostic fault codes that can be read together with the other information from the car's sensors through wireless technology.

In addition to these three types, Opus Inspection offers EVAP testing equipment to test the evaporation of the vehicle's fuel tank. Remote Sensing equipment measures the vehicle emissions from the side of the road, while a license plate recognition (LPR) camera photographs the vehicle's license plate. Remote Sensing is a very convenient and effective complement to vehicle inspection stations because a vehicle approved in an RSD program does not need to be inspected at a vehicle inspection station. This is called "Clean Screening."

Envirotest is a subsidiary to Opus Inspection and is the largest vehicle inspection company on the North American centralized vehicle inspection market. Envirotest also offers Remote Sensing services (RSD) including measurement of emission compliance with current legislation, high emitter identification, detection of liquid leakage and monitoring of emissions from heavy vehicles. The services can also be used to evaluate the effectiveness of emission inspection programs in many different ways. Envirotest holds the leading international position in RSD services with its patented product, AccuScanTM.

Opus Inspection also offers wireless vehicle inspection (Remote OBD) that enables vehicle checks without visiting the workshop and involves a small box connected to the car's OBD socket. When the car passes a receiver along the roads, any error codes are transmitted to the authorities' database.

4.1.2 Equipment

The Equipment division is responsible for developing, manufacturing and selling of equipment for emission and safety inspections. After-sales service and support is included, and they provide vehicle workshops with equipment via reseller agreements with third parties. The goal of the Equipment division is to be able to offer comprehensive solutions to test stations or workshops. The operations in the Equipment segment are run mainly through the subsidiaries Opus Equipment and J&B Maskinteknik. Opus Equipment is headquartered in Gothenburg. Its products can be divided into three product areas, these are the following:

4.1.2.1 Vehicle Inspection

Vehicle Inspection includes emission and safety inspection equipment such as exhaust gas meters, wireless vehicle testing (remote OBD), brake testers and Automatic Test Lanes (ATL). The Opus Group manufactures a number of exhaust gas meter models used in environmental inspections to measure and analyze exhaust emissions from gas, diesel or LPG powered vehicles. Brake testers are used to test the effectiveness of a vehicle's brakes and can separately test each individual wheel. Automatic Test Lanes is a name for how you can construct test lanes for emission and safety inspections on vehicles. An ATL comprises one or more test instruments that are linked, typically around a PC and/or a network. The test equipment is compiled according to workshop needs.

4.1.2.2 Workshop equipment

Workshop equipment includes a wide range of products for the workshop industry such as diagnosis equipment, compressed air equipment, tire and wheel equipment, hoists and consumables.

4.1.2.3 Fleet Management

Fleet Management includes products for fleet management such as breathalyzers, ignition-interlock devices (IID) and electronic driver logs. Electronic driver logs simplify the administration of company vehicles. Driving data from the car, such as its starting and stopping positions and mileage can be stored. An electronic driver log can then be created automatically in the computer system. Opus Group's breathalyzers and IID use new fuel cell technology to detect alcohol in the breath. The IID can also be combined with electronic driver logs to provide a comprehensive solution.

4.1.3 J&B Maskinteknik

With headquarters in Gothenburg, J&B Maskinteknik installs and performs servicing on equipment for vehicle inspection facilities and vehicle workshops in Sweden. Through J&B Maskinteknik, Opus Group has built up a nationwide service organization that also conducts accredited calibration for vehicle inspection stations and workshops that rectify faults and clear inspection remarks.

4.2 Laws and Regulations

This chapter elaborates the laws and regulations regarding the vehicle inspection industry. It explains the difference of the laws and the actual enforcements. The rules regarding the frequency of mandatory vehicle inspections and the general function of a vehicle inspection station are explained. This chapter further explains the current situation of the intellectual property protection in China.

4.2.1 Vehicle inspection industry: "permitted" and "highly regulated"

4.2.1.1 "Permitted" industry

According to Article 4 in the *Provisions on Guiding the Orientation of Foreign Investment (Promulgated by the State Council on 11 February 2002 and effective as of 1 April 2002):* foreign investment projects are divided into four categories: encouraged, permitted, restricted and prohibited. Encouraged, restricted and prohibited foreign investment projects are included in the *Catalogue of Industries for Guiding Foreign Investment (Catalogue).* Foreign investment projects that do not fall into the encouraged, restricted or prohibited categories automatically belong to the permitted category. Foreign investment projects in the permitted category are not included in the *Catalogue of Industries for Guiding Foreign Investment*.

The *Catalogue of Industries for Guiding Foreign Investment (Promulgated by National Development and Reform Commission & Ministry of Commerce on 24th November 2011 and effective as of 30th January 2012)* does not cover the vehicle inspection industry, hence the vehicle inspection industry falls into the permitted category.

The investment requirement for "permitted" projects are similar to "encouraged" projects, and they are subjected to the related laws and regulations of China. The approval procedures are simplified, the local commerce department is responsible for approving total investments that is below $300 million (chenandco, 2014).

The *Catalogue of Industries for Guiding Foreign Investment* only applies in the eastern economic regions, the foreign investment projects are subjected to the *Catalogue of Dominant Industries with Foreign Investment of the Mid-west Region (Amended in 2013)* in the Mid-west economic regions of China. The three economic regions are shown in the figure below.

Figure 4.1 Economic regions of China (Source: globaleye, 2014)

4.2.1.2 "Highly regulated" industry

Even though the laws in China claim that foreign multinationals are allowed to invest in the vehicle inspection industry, the reality is much more complicated. In order to verify the validity and reliability of the collected data, a number of semi-structured telephone interviews were held with people who are experienced in the vehicle inspection market, see table 3.2. The personnel include inspectors and receptionists of Chinese local vehicle inspection companies, Opus' production manager and export sales manager as well as some high level managers from top inspection companies that are active in the global market. The persons interviewed were chosen based on their

- Functional belonging: To ensure that the interviewees are from different levels of a company
- Organizational belonging: To ensure the interviewees are from different companies

What could be concluded from the interviews is that the vehicle inspection industry in China belongs to the "highly regulated" industry in practice, despite the fact that the laws reveal a positive attitude towards foreign investments. The local governments are often reluctant to open up this high profitable area to foreign companies and many barriers stand in the way to apply for the required certifications. This scenario is in line with the unique business culture in China, which involves complex "guanxi" with the government. In spite of the current limitations, the interviewees from international inspection companies admitted that they are waiting for the "deregulation" and that they are actively preparing to enter this market.

4.2.2 Road traffic safety regulations in China

In recent years, the sharp growth of the vehicle fleet in China, especially for the private cars, has resulted in an increased demand for the vehicle inspection industry. These changes have brought a great development chance for the Chinese vehicle inspection industry while raising a severe challenge to the current inspection situation at the same time. (Hongmei Zhao, 2008)

According to *The Regulation on the Implementation of the Law of the People's Republic of China on Road Traffic Safety* (adopted on April 28, 2004), motor vehicles must pass certain regular inspection. Some provinces also issue their local regulations based on their specific environments and vehicle safety situations, but the national regulations set the bottom line for this industry. [1] Four government departments are responsible for each inspection aspect:

1. National Development and Reform Commission is in charge of testing new vehicles before they are put into use;

2. The Ministry of Public Security takes charge of safety testing for the in-use vehicles including all commercial and non-commercial vehicles. According to the *Regulation on the Implementation of the Law of the People's Republic of China on Road Traffic Safety* (April 28, 2004), Article 16 states that a motor vehicle shall, as of the day when it is registered, be subjected to safety technical inspections according to the following frequencies:

(1) A commercial passenger automobile shall be subjected to one inspection every year during the first 5 years. If it exceeds 5 years, it shall be subjected to one inspection every 6 months;

(2) A truck and large or medium-sized non-commercial passenger automobile shall be subjected to one inspection every year during the first 10 years. If it exceeds 10 years, it shall be subjected to one inspection every 6 months;

(3) A small or mini non-commercial passenger automobile shall be subjected to one inspection every two years during the first 6 years. If it exceeds 6 years, it shall be subjected to one inspection every year. If it exceeds 15 years, it shall be subjected to one inspection every 6 months.

(4) A motorcycle shall be subjected to one inspection every two years during the first 4 years. If it exceeds 4 years, it shall be subjected to one inspection every year.

(5) A tractor and any other motor vehicle shall be subjected to one inspection every year.

[1] Xiaodong Ban (Associate Professor, Department of Automotive Engineering, Shandong Jiaotong University. From 2001 to 2005, worked as Assistant Engineer at Motor Vehicle Inspection and Maintenance Center of Shandong Jiaotong University). interviewed 20th, July. 2014

If a commercial motor vehicle is determined to be qualified upon safety technical inspection within the prescribed time limit for inspection, it does not have to accept any repeated safety technical inspection.

3. The Environment Protection Agency manages the emission testing, all vehicles must be tested once a year;

4. The Ministry of Transport is in charge of the auto-comprehensive function testing, it includes technical testing and is identified for the commercial vehicles, the work is done in the automotive multiple-function test station.

In order to mitigate the imbalance between the growth of vehicles and the shortage of inspection stations, in the newly published regulation: *Opinions on Strengthening and Improving the motor vehicle inspection work (29th, April, 2014),* some changes have been made:

1. Extension of the free inspection for new vehicles. From 29th, April, 2014, all new cars , small or mini commercial passenger automobile and other new motor vehicles that are certified for free inspection by Ministry of Industry and Information Technology of the People's Republic China do not need to perform any technical inspection.

2. Public security, quality control and other government departments cannot operate vehicle inspection stations. The departments that have already set up inspection stations should decouple from them before the end of September, 2014. Government departments cannot designate certain inspection station for vehicle owners.

3. From the 1st of September 2014, the trial change about free inspection for private cars will be put into practice: A non-commercial private car, within six years, if it is registered after 1st of September 2010, does not need to perform a technical test. Instead, the owner just needs to provide certain documents to apply for the inspection mark.

4.2.3 Competence of the inspection stations

According to the national document No.204 issued in 1993 and national standard: *General requirements for the competence of automotive multiple-function test station* (*GB/T 17993-2005)*, a test station is identified as an independent, socialized, self-financed economic entity. This rule greatly promotes the setting-up and socialization process of vehicle inspection station in China.

Both public and private inspection stations now exist in the market[2] .Inspection stations are categorized into two types based on their functions: safety test stations are supervised by the Ministry of Public Security and automotive multiple-function test stations are ruled by the Ministry of Transportation (Hongmei Zhao, 2008):

[2] Kun Shan (November, 2013~ February, 2014. Customer service, Anlong Shiyan Motor Vehicle Safety Inspection CO. LTD.). interviewed 20th, July. 2014

1. Entrusted by the public security agency, the safety test station is in charge of motor vehicles' safety testing and provides the results to vehicle owners and the public security agency;

2. The test items for the automotive multiple-function test stations are:

(1) According to the traffic management agency's commission, testing and diagnosing the technical condition of in-use vehicles; maintenance quality test for the repaired vehicles;

(2) Based on commission, testing the vehicle's modification, alteration, scrap condition and related new processes, technologies, products and research results;

(3) Entrusted by public security, environmental protection, commodity inspection, measurement and insurance agencies, testing related items and provide results.

The two inspection stations have different functions, but the latter contains the former.

The table below shows the vehicle types and responsible agencies and stations.

Vehicles	Responsible agency	Multiple-function test station	Safety inspection station
new vehicles	National Development and Reform Commission	–	–
all motor vehicles	Ministry of Public Security		√
commercial vehicles	Ministry of Transport	√	
all motor vehicles	Environmental Protection Agency	√	√

Table 4.2 Vehicles types and responsible agency and station (Source: compiled based on data from the information above)

4.2.4 Intellectual property protection in China

4.2.4.1 The current Intellectual Property Protection system in China

According to Wenqi Liu (2004), The Intellectual Property Protection (IPP) system consists of three parts: the legislative system, administrative control and the judicial enforcement. There are two layers of legislative organizations in China – the central government and its ministerial and provincial government organizations, respectively. Both layers hold the power to enact laws and regulations.

Regarding the administrative control, three separate organizations under the State Council are in charge of different Intellectual Property (IP) forms: the State Intellectual Property

Office, Trademark Office and the National Copyright Administration. They are responsible for the examination and approval of IPRs, interpretation of IP laws, supervision of IP activities and administrative settlement of IP disputes. Likewise, ministerial and provincial organizations under the same name cooperate with the central offices and supervise local or organizational IP activities (D. Yang, 2003). The enforcement force organizations include the State Administration for Industry and Commerce and the Public Security Department. They prevent IP infringements, impose administrative sanctions and order compensation, they usually take action faster than the judicial organs.

In order to protect the IP, China has set up efficient mechanisms in the judicial area. For example, the special people's courts and specialized IP divisions within and above the Intermediate People's Courts are designed to handle IPP disputes specifically. All these measures and organizations lead to a better protection of IP in China.

4.2.4.2 China's revolutionary changes for technology protection

Wenqi Liu (2004) mentions that China has adopted wild reforms in its economy and in the IPR regime during the past decades. In order to follow the central government's planning about the position of China in the world: from "made in China" to "designed in China", China is strengthening its judicial protection over the IP and is trying to create an environment favorable to encourage invention and creativity as well as to promote the prosperity of scientific, technological, educational, cultural and artistic undertakings.

With respect to the patent domain, the latest important reform occurred in 2008 when the *Patent Law* was revised for the third time. Firstly, in this new version, a much stricter standard was adopted, which requires absolute novelty when registering a patent. China adopts a "first to file" system, which means that the party that files the patent first will obtain the patent. It is important that a foreign applicant keeps an invention from being disclosed in any way anywhere in the world before the filing date. This new strict standard also affects the invalidation of patents in China. All evidence outside of China, including public use and public knowledge can now be used to challenge a patent. Besides, according to the new patent law, no one is allowed to obtain a patent for another party's invention even though it was first disclosed at a trade show, or public use outside of China, which means the loophole for patent hijacking is closed.

In China, there are three forms of patent protection:

1. Invention patents, which are granted for technical innovations that are new, practical and innovative;
2. Design patents, which are granted to protect the color, shape or combination of both of an item;
3. Utility model patents, which are granted for technical solutions related to the shape or structure of an item;

Secondly, about double patenting, the new law stipulates that a patent applicant can file for an invention patent and a utility model patent for the same invention at the same time. The utility model patent and the design patent are normally granted prior to the invention patent, usually within 18 months from the filing date, while granting of an invention patent can take up to four years. But the utility patent must be abandoned before the invention patent can be granted. Foreign companies should make full use of the utility model patent, especially for core products, because it can be granted quickly and like an invention patent, it can be the first line of defense against patent infringement (Alex Zhang, 2011).

Thirdly, the threshold for foreign applicants is lower. According to the new law, foreign applicants should entrust an agency that is established by law to apply for a patent in China and is in charge of other patent issues. While the old patent law limited the agencies that could be entrusted by foreign applicants to only include agencies which were appointed by the patent admission organization under the State Council (zjhyinfo, 2009).

4.2.4.3 The challenges of technology protection in China

Schotter & Teagarden (2012) state that the Chinese market is becoming much more intricate in the recent past. In China, the foreign multinationals can no longer compete with their products or services based on the dated technology and know-how. In contrast, they have to compete with their most advanced technology, even though China is seen as the symbol of counterfeiting and IP theft. When IP infringements occur, the multinationals choose to fight and rely on the international legal system or the "immature but gradually improving Chinese legal system".

Despite the fact that China is slowly approaching a mature legal environment, there are still many obstacles the foreign multinationals have to confront on their way of seeking the fortune in China (Schotter & Teagarden, 2012). Firstly, the two-tier legislative system in China inevitably causes the disconnection between national laws, provincial laws and local government laws. Sometimes the laws promulgated by different tiers are in conflict with each other. Secondly, the current enforcement of protecting the technology is only a fraction in comparison with the developed countries (Wenqi Liu, 2004). It is very common in China that the implementation of laws and regulations cannot meet what it has been claimed. Finally, the biggest threat to local or foreign inventors is opacity. Judges usually do not publish detailed rulings, or do so only after a long time delay. This often confuses both the complainant and respondent on how the verdict comes (Economist, 2012).

4.2.4.4 IP protection strategy in China

Protecting the IP is a constant adjustment and new scenarios occur every day, but Schotter & Teagarden (2012) also point out that despite the threats when trying to protect the IP in China, multinationals cannot wait for a maturing market, otherwise the profit opportunities will be lost. Therefore Schotter & Teagarden (2012) list the general practices that multinationals should follow from basic to complex, as can be seen in Figure 4.4.

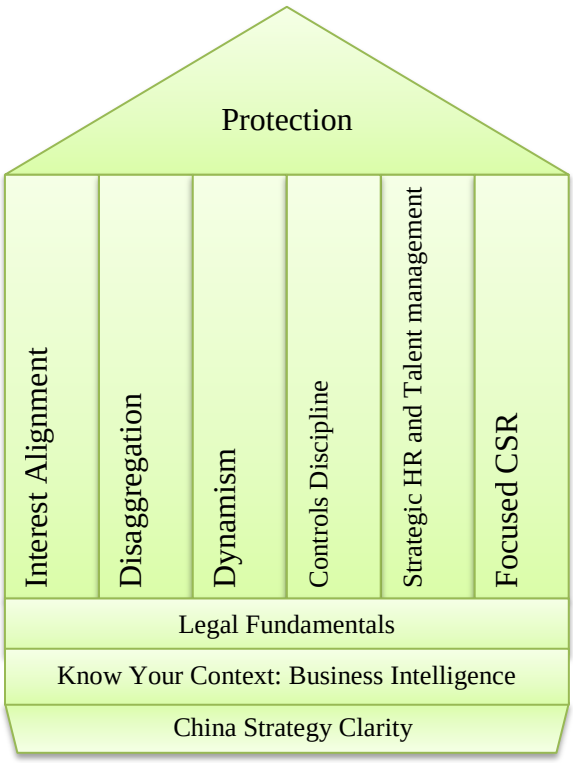

Figure 4.2 Activities and practices for protecting the IP in China (Source: Schotter & Teagarden, 2012)

4.2.4.4.1 Defensive strategy

According to Schotter & Teagarden (2012), the IP protection should begin with a ‘’low-hanging fruit’’:

1. Managerial and organizational clarity on the China market.

A clear strategy towards China seems necessary and obvious, but a missing link frequently happens when multinationals actually operate in China. China- specific corporate strategies which are in line with the objective to do business in China is mandatory. The next step is to identify what kind of IP needs to be brought in order to execute the related strategies. Based on this, the right personnel must be chosen, both internally and externally, to begin the venture. Clear operational and managerial process must be designed to direct the implementation.

2. Robust business intelligence for deep understanding of the local context

China does not consist of a single market, different cities and provinces have different situations and regulations regarding the protection of IP. Understanding these regional or locational variations in China is vital for success. Multinationals must "Be suspicious – be especially vigilant if they outsource; Be realistic - piracy is a universal truth; and Be on side - remote management does not work in China or any other part of Asia for that matter".

3. Adherence to solid legal fundamentals

One mistake that many multinationals often make is to believe that IP fillings in the USA and EU are valid in China, actually they are not. In China, the multinationals are advised to have their legal advisors and operations managers to coordinate the implementation. When hiring a legal counsel, a lawyer with the right experience is critical. Actively using the legal system to prevent IP theft, while maintaining a good image, potential gain, rationale and timing at the same time is important. Schotter & Teagarden (2012) also stress that using the legal system is beneficial only after IP infringement occurs and "winning" may just become a hollow victory. Therefore a less obvious, while a more complicated approach to protect the IP is advised, that is to indulge the company in a number of dynamic activities in order to retard the unavoidable IP leakage from the very beginning.

4.2.4.4.2 Offensive strategy

While implementing the above mentioned activities, the multinationals are able to shift to more offensive activities that are aimed to build up barriers that are difficult for IP thieves to overcome. Six distinct practices are provided by Schotter & Teagarden (2012) to form a multilayered, interlocking IP protection network.

1. Proactive interest alignment with regulatory institutions and individual government officials in the localities where the company locates;

2. Disaggregation of IP components and core processes through organizational and physical separation of activities, technology, vendors and clients;

3. Dynamism through a continuous improvement of products and processes in order to be in a competitive position regarding the know- how, forcing the competition to continuously play catch-up;

4. Use of a control discipline that rests on and is embedded in a strong organizational culture;

5. Strategic human resource and talent management that makes the company a great place to work in;

6. Focused corporate social responsibility activities that make the company a valuable part of the local community.

4.3 Market actors

This chapter includes information about the Chinese vehicle inspection industry regarding the actors and challenges in this market. Among the challenges that can be seen are the corruption, fraud, the long waiting times for vehicle inspection and the air pollution. This chapter also includes data on the vehicle situation in China and the economic situation by region.

4.3.1 Identified actors in China

There are several international vehicle inspection companies already active in the Chinese market, but there is a difference in their offering and in the way they have entered the market. Some of these companies have entered China through acquisition of local vehicle inspection companies while others have entered by expanding their product and service offerings in business areas separate from vehicle inspection. This, as will be show in the analysis, can be used as a strategic tool to enter the vehicle inspection market in the future.

Among the international vehicle inspection companies that have entered the Chinese vehicle inspection market is SGS vehicle inspection. They are active in Shanghai and in Qingdao which belongs to Shandong province and are running three vehicle inspection facilities. They are conducting safety checks, emissions testing and calibration to ensure that the equipment is running precisely. SGS has a wide range of services to ensure that public and private vehicles comply with local legislation and regulations.

The way that SGS has entered the vehicle inspection market is through acquisition. In June 2013, they acquired Yuanshun Automotive Services CO based in Qingdao, China. Yuanshun is the leading vehicle inspection company in that area, it is privately owned and employs 72 staff and runs two vehicle inspection stations in the Licang and Sifang districts, performing both vehicle safety and emission testing.

Another international vehicle inspection company that is actively operating in the Chinese market is TÜV NORD. They have been operating in China for over 12 years. They have two companies in Hangzhou and Guangzhou and the branch offices are located in Beijing, Shanghai, Tianjin, Chongqing and Shenzhen.

TÜV NORD Hangzhou opened in 2004 and caters to eastern China with its testing and certification services. The labs in Hangzhou are certified by the Central Authority of the States for Safety Technology (ZLS). The tasks include certifications according to national and international management systems, technical evaluation and testing of products, machinery and automotive.

Guangzhou TÜV Industrial Technical Services Co Ltd. was founded in 1999. The company offers professional and reliable industrial services for local and international customers in China. These services includes testing of technical plant and systems, consultation on basic technical questions, special testing and damage assessments as well regulated industrial services like PED and ASME according to the required standards to provide the customers with a basis for this sustainable quality.

As can be seen above, TÜV NORD does not offer their own vehicle inspection services, but they are active in other areas. The benefits this has regarding vehicle inspection will be shown in the analysis chapter.

Company	Area	Offering
SGS	Shanghai Shandong Province	Vehicle inspection: Safety checks, emission testing and calibration of equipment
Dekra	Shanghai	Used car management, Homologation and Type approvals, Consulting and Mystery shopping
Bureau Veritas	Shanghai, Beijing, Changsha, Changshu, Chengdu, Chongqing, Dalian, Fuzhou, Guangzhou, Hangzhou, Harbin, Hongkong, Jiansu, Lanzhou, Luoyang, Nanchang, Nanjing, Nanning, Ningbo, Qingdao, Quanzhou, Suzhou, Tianjin, Wuhan, Xi'an, Xiamen.	In-service inspection and verification, certification
TÜV- Nord group	Two companies in Hangzhou and Guangzhou and the branch offices are located in Beijing, Shanghai, Tianjin, Chongqing and Shenzhen.	Certification services, technical evaluation
TÜV- SÜD group	Headquarters in Shanghai with main offices in Beijing, Guangzhou, Hong Kong and Taipei as well as around 40 satellite offices throughout the region,	No vehicle inspection, but they are thinking about offering it in the near future.
TÜV- Rheinland group	Beijing, Changsha, Chengdu, Chongqing, Dalian, Fuzhou, Guangzhou, Hongkong, Kunshan, Ningbo, Qingdao, Shanghai, Shenzhen, Taichung, Taipei, Wuxi, Xiamen, Zhongshan	Vehicle emission testing, vehicle evaluation with appraisal and visual inspection services, vehicle inspection for private customers and testing

Table 4.3 International vehicle inspection companies in the Chinese market

TÜV SÜD does not offer vehicle inspection services in China, but they are offering other services.

Dekra is another international vehicle inspection company that is active in the Chinese market in Shanghai and offers automotive services in the following business sectors.

- Used car management
- Homologation & Type approvals
- Consulting & Mystery shopping.

Bureauveritas is another vehicle inspection company and is very active in the Chinese market in 44 different cities. They offer many different services including vehicle inspection, see table 4.3.

4.3.2 Current problems of the vehicle inspection industry in China

4.3.2.1 Corruption

Even though a number of laws about standardizing the inspections are issued by the government these last years, driven by high profits, the corruption is still very common in the inspection stations. The most common corruption scenario is that the inspection stations counterfeit the inspection results. The owners of commercial vehicles normally send their vehicles to the garages for maintenance before the regular compulsory inspection, employees at the garages will help the vehicles owners to go through the inspection. In order to pass the inspection easily, the garage chooses to "cooperate" with the inspection stations, otherwise the vehicles will be sent back for reparation again, which will increase the repairing costs for the garages (Chunliang You, 2006). Besides, some "illegal intermediaries" use their "background" and "guanxi" to help vehicle owners pass the inspections. If the vehicle owners are willing to pay more, then they can enjoy this "fast and convenient" service (Anna Hu & Kexing Zheng, 2014). Furthermore, some inspectors become unnecessarily strict and picky in order to get "extra" money, they will insist there is something wrong with the vehicles though the vehicles are in good condition. Unless they are asked to "fix" it and pay extra money, it's hard to pass the inspection (Yuanjie Zheng, 2009).

4.3.2.2 Long waiting time

With the rapidly growth of car parc, while the severe shortage of inspection stations has annoyed car owners especially in some big cities that even 50,000 cars using one inspection line (China Daily). The waiting time can reach several hours while the actually inspection time of safety and emission test is only around 15 minutes. (Anna Hu & Kexing Zheng, 2014)

4.3.2.3 Fraud in emission test

Some provinces have already updated their emission test equipment, many of which only exist in name. Some inspection stations will assign the customer with a symbol which stands for "pass" in the emission test, as long as the money are paid. Others may pretend to have used the emission test equipment to check the emission, however, the equipment was not even turned on. Therefore, the so called emission test makes no sense in the emission control and environment protection in many cities (sina news, 2011).

4.3.3 Current situation of the vehicle population, vehicle inspection station number and the inspection price

At the end of October, 2013, the vehicle population in China reached 250 million, including 135 million motor vehicles, accounting for 53.9% of the total population. Of the 135 million motor vehicles, private automobiles' population occupied 85.07 million, an increase of around 14 times compared to 10 years ago. In the past two years, the annual growth of private automobiles reached more than 14 million. In 2003, China's vehicle population was 97.72 million, of which 60 million are motorcycles, accounting for 61.4%; 24 million were motor vehicles, accounting for 24.6%, and of which private cars were less than 6 million. The composition is shown in the figure below (Gong An Bu Jiao Tong Guan Li Ju, 2014).

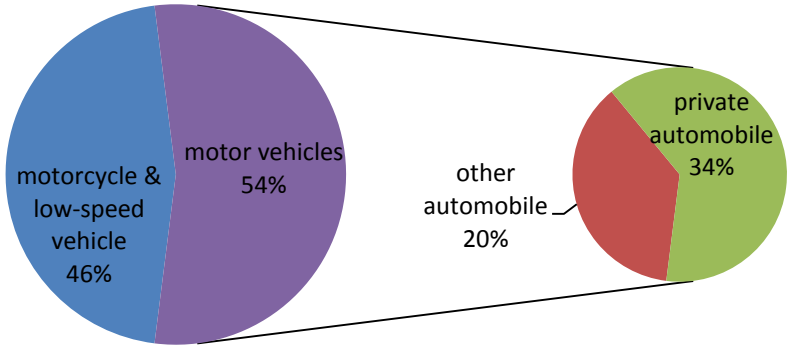

Figure 4.3 Composition of China's vehicle fleet in 2013 (Source: compiled based on data from Gong An Bu Jiao Tong Guan Li Ju, 2014)

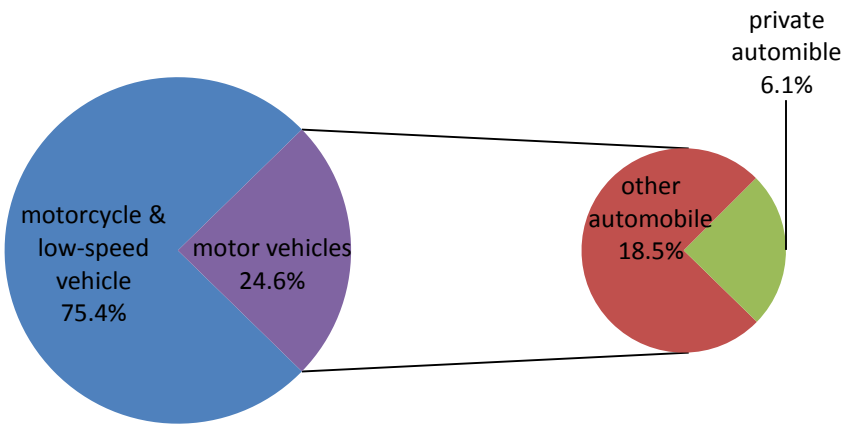

Figure 4.4 Composition of China's vehicle fleet in 2003 (Source: compiled based on data from Gong An Bu Jiao Tong Guan Li Ju, 2014)

Until the end of 2013, 31 cities' car parc[3] in China exceeded 1 million vehicles, of which Beijing, Tianjin, Chengdu, Shenzhen, Shanghai, Guangzhou, Suzhou, Hangzhou and other eight cities exceeded 2 million. Comparing with the rapid growth of car parc, however, the severe shortage of inspection stations has annoyed car owners, particularly in some international cities where 50,000 cars are using a single inspection line (China Daily). As can be seen in the table below, there is no specific relation between the car parc and the inspection station numbers in these ten cities, for example, Beijing with the largest car parc only has 40 inspection stations. Regarding the inspection price, according to *Notice about Strengthen and Standardize the Sanagement of Charging Standards Regarding Vehicle License Plate Fee and Other Related Fees(2004, number2831)*, the charging standard for motor vehicle safety inspection fee is decided by the local governments where no more than 100 yuan (1.00 CNY =1.15996SEK, XE Currency Converter,18th September, 2014) for each vehicle at each time can be charged. But as can be deduced from the diagram below, only Chengdu, Tianjin and Zhengzhou obey the law.

[3] Car parc refers to the number of registered automobiles in one area. But the range of car parc is smaller than that of motor vehicle population- Baidu Baike: http://baike.baidu.com/view/1379561.htm. 1st, August 2014.

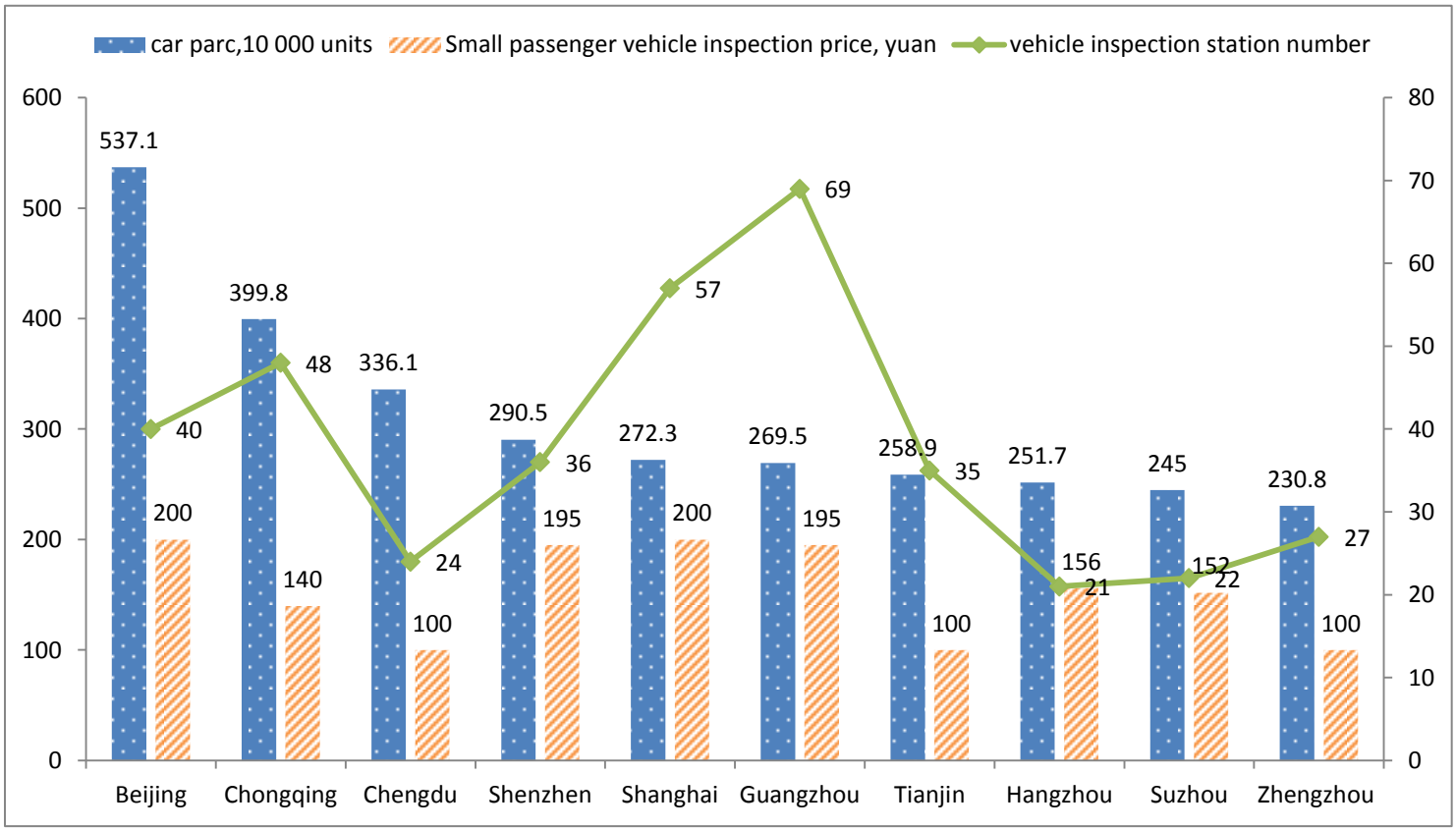

Figure 4.5 Top ten cities of car parc in 2014 with vehicle inspection station number and inspection price respectively
(Source: compiled based on data from Kan, 2014, Internet and phone-calls)

Because the government has only released little data of 2013, the data of 2012 and previous years will be used instead as important references in this thesis. According to *China Vehicle Emission Control Annual Report (2013)*, by the end of 2012, the total vehicle population in China reached 223.828 million, of which 108.378 million were motor vehicles, 11.45 million were low-speed vehicles and 104 million were motorcycles. Figure 4.6 shows the composition.

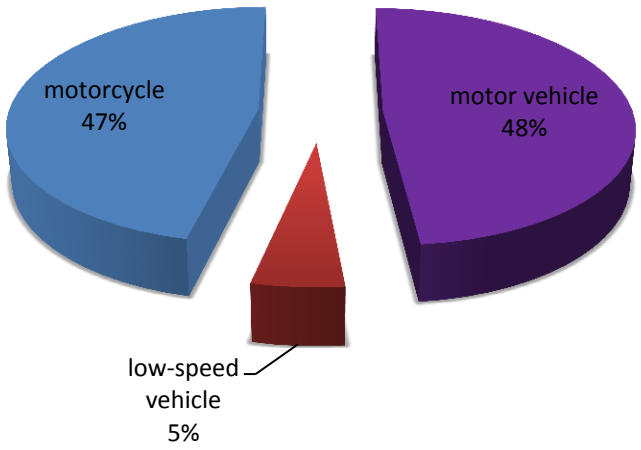

Figure 4.6 Composition of China's vehicle fleet in 2012 (Source: *China Vehicle Emission Control Annual Report, 2013*)

4.3.4 Current situation of motor vehicle population

In 2012, among the motor vehicles, the population of passenger vehicles reached 89.43 million, accounting for 82.5% of the total fleet. Among passenger vehicles, the mini passenger vehicles' population was 3.805 million, small passenger vehicles' population was 83.026 million, medium passenger vehicles' population was 1.318 million, large passenger vehicles' population was 1.281 million; The total population of goods vehicles reached 18.948 million, occupying 17.5% of the total fleet. Among goods vehicles, mini, light, medium, and heavy goods vehicle populations reached 1.34 million, 11.797 million, 2.292 million, and 4.725 million, respectively. Figure 4.7 shows the composition of the motor vehicle population by vehicle type.

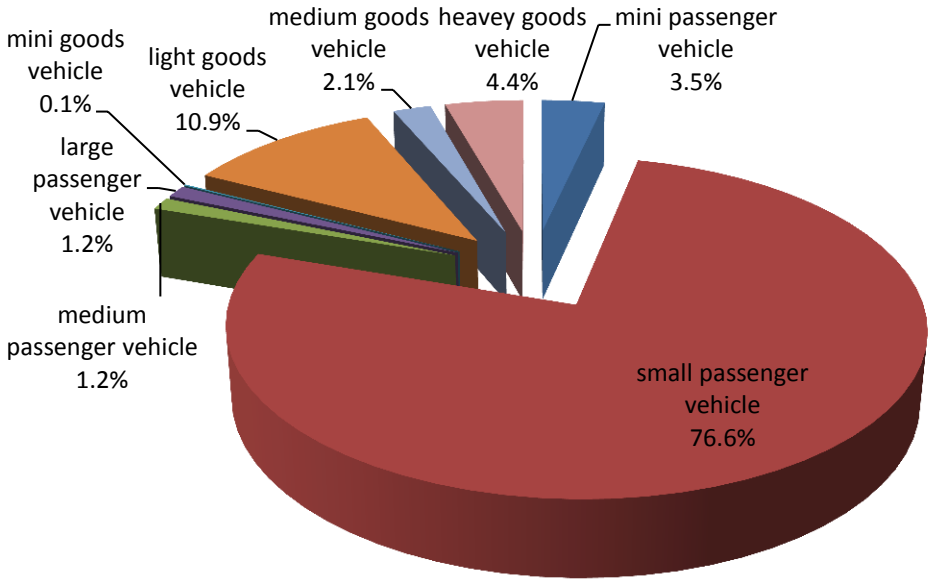

Figure 4.7 Motor vehicle population by vehicle type in 2012 (Source: *China Vehicle Emission Control Annual Report, 2013*)

By the end of 2012, the population of gasoline motor vehicles reached 89.43 million, accounting for 82.5% of all motor vehicles. The population of diesel vehicles reached 17.423 million, accounting for 16.1% of all motor vehicles. The population of gas vehicles reached 1.525, accounting for 1.4%. Figure 4.8 shows Chinese 2012 motor vehicle population by fuel type.

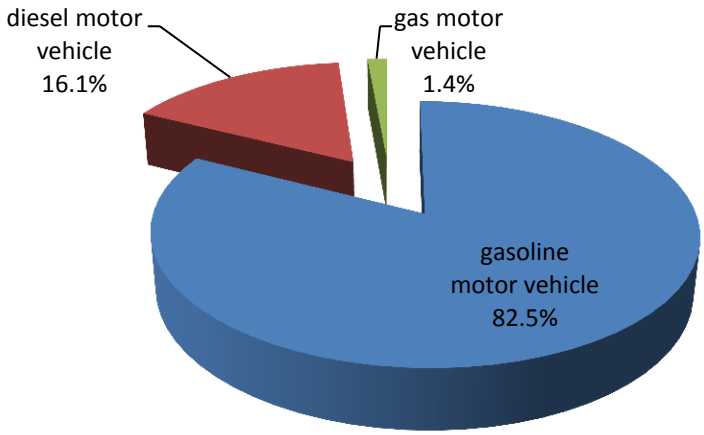

Figure 4.8 Motor vehicle population by fuel type in 2012 (Source: *China Vehicle Emission Control Annual Report, 2013*)

4.3.5 Growth of possession of civil motor vehicles

According to the *China Statistical Yearbook 2013*, the possession of civil motor vehicles refer to the total number of vehicles that are registered and have received vehicle license tags according to the *Work Standard for Motor Vehicles Registration*, formulated by the Transport Management Office under the department of public security at the end of the reference period. Based on the structure of motor vehicles, they are divided into passenger vehicles (large, medium, small and mini passenger vehicles), trucks (heavy, medium, light trucks and mini-trucks.) and others. The growth trend of civil motor vehicle population from 2002 to 2012 is illustrated in the figure below.

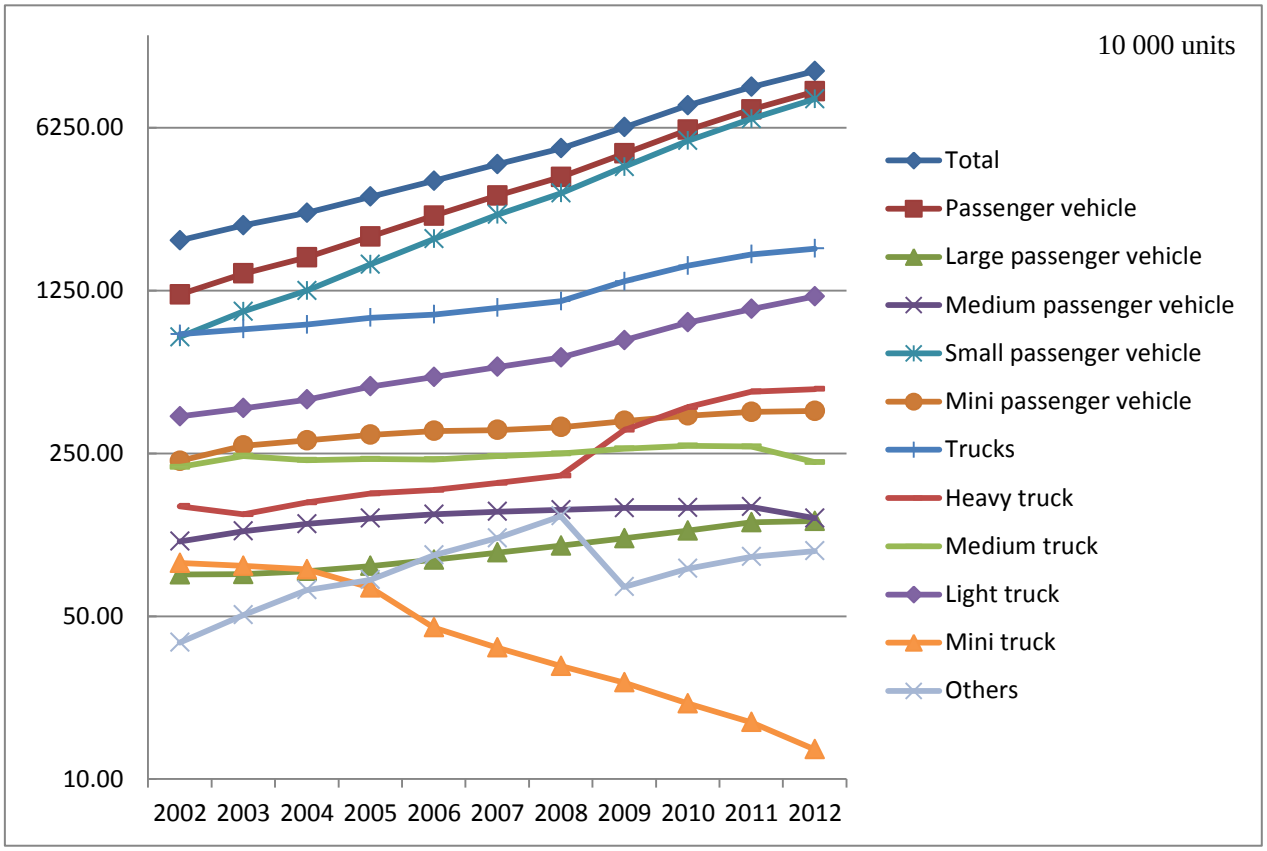

Figure 4.9 Development trends of civil motor vehicle in China from 2002 to 2012 (Source: compiled based on data from *China Statistical Yearbook 2013*)

From 2002 to 2012, the average annual growth rate of each vehicle type is shown in Figure 4.10

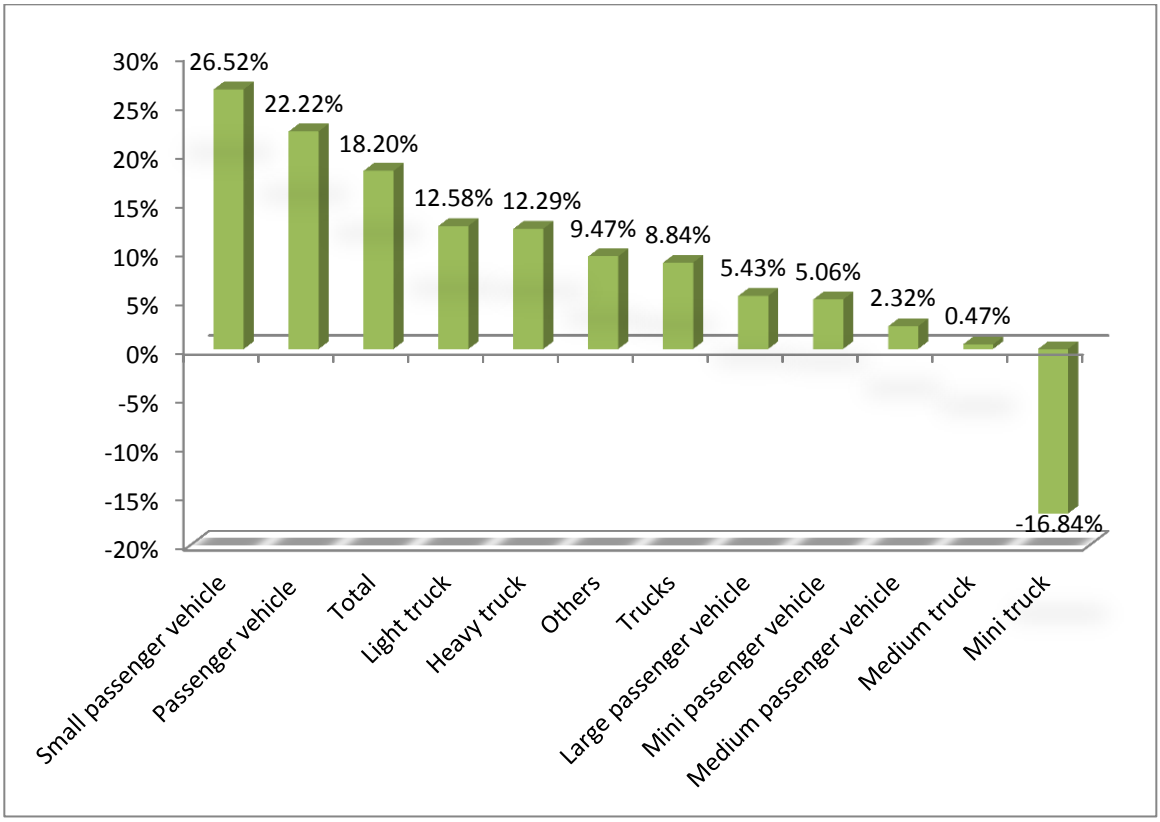

Figure 4.10 Average annual growth rate of each vehicle type from 2002 to 2012 (Source: compiled based on data from *China Statistical Yearbook 2013*)

As can be seen from the chart above, in the past decade, the total population of civil motor vehicles has grown rapidly, with an average annual growth rate of 18.20%. Among the civil motor vehicles, the number of small passenger vehicles have experienced the highest growth rate, with the highest average annual growth rate of 26.52%.

In 2012, provinces with high possession of civil vehicles were mainly aggregated in the eastern area. The top five provinces are: Guangdong (10.37 million), Shandong (10.27 million), Jiangsu (8.02 million), Zhejiang (7.74 million), Hebei (7.29 million), see Figure 4.11.

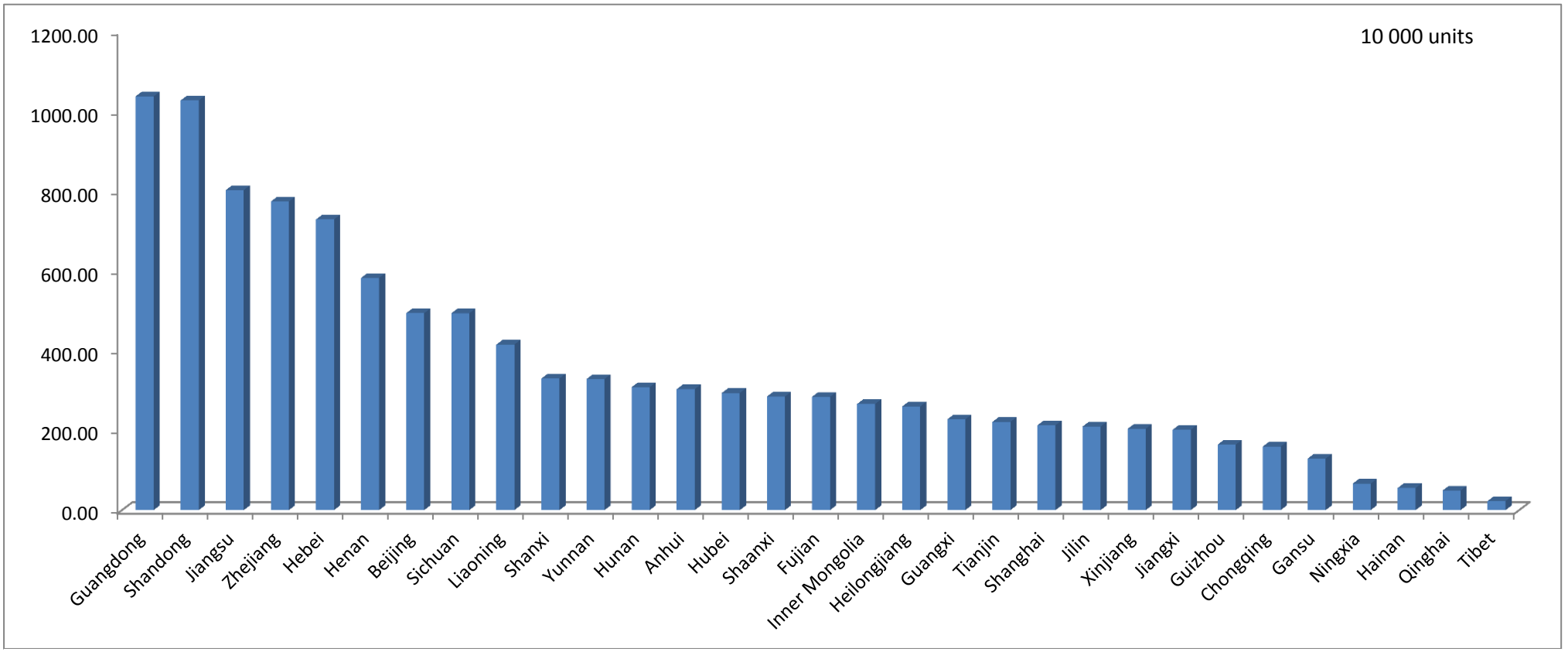

Figure 4.11 Possession of Civil Vehicles in each province of China in 2012 (Source: compiled based on data from *China Statistical Yearbook 2013*)

4.3.6 Current economic situation by region

Table 4.4 and 4.5 show the per capita annual income of urban households by region and the Chinese provincial GDP. It can be seen from the tables that there are regions which have a high rank when it comes to the per capita income and a much lower rank when it comes to the regional GDP.

One example of this phenomenon is Shanghai, which is ranked as number one in China regarding the per capita annual income and number eleven regarding the GDP. More interesting is that table 4.5 shows that Shanghai has the slowest GDP growth rate in relation to the rest of the country. However, despite this, the service industry in Shanghai has experienced a rapid growth and has accounted for 60 percent of its GDP in 2012.

The second slowest GDP growth was registered for Beijing, which also followed Shanghai as the second strongest region when it comes to the per capita annual income levels. Despite the slow GDP growth, the quality of the same has improved considerably as huge investments have been made in the service sector and consumer spending on recreational activities. In addition to this, the research and development costs of Beijing were the highest in China, accounting for 5.8 percent of the GDP in 2012. The economic growth policy of China has gradually changed since 2011 from a focus on speed of growth to quality of growth as Beijing has exemplified.

One thing the tables have in common when combined, is that the coastal regions show the best GDP and income levels and they are the regions which experience most investments by international firms in China.

Region	Disposable Income
Shanghai	40188.34
Beijing	36468.75
Zhejiang	34550.30
Guangdong	30226.71
Jiangsu	29676.97
Tianjin	29626.41
Fujian	28055.24
Shandong	25755.19
National Average	**24564.72**
Liaoning	23222.67
Inner Mongolia	23150.26
Chongqing	22968.14
Hunan	21318.76
Guangxi	21242.80
Yunnan	21074.50
Anhui	21024.21
Hainan	20917.71
Hubei	20839.59
Shanxi	20733.88
Hebei	20543.44
Henan	20442.62
Shanxi	20411.71
Sichuan	20306.99
Jilin	20208.04
Jiangxi	19860.36
Ningxia	19831.41
Guizhou	18700.51
Tibet	18028.32
Xinjiang	17920.68
Heilongjiang	17759.75
Qinghai	17566.28
Gansu	17156.89

Table 4.4 Per Capita Annual Income of Urban Households by Region (Source: National Bureau of Statistics, 2012)

Primary Chinese Provincial GDP Figures (2012)				
Rank	Region	GDP (RMB)	GDP (US$)*	Growth rate (%)
1	Guangdong	5.71 trillion	930 billion	8.2
2	Jiangsu	5.41 trillion	881 billion	10.1
3	Shandong	5.00 trillion	814 billion	9.8
4	Zhejiang	3.46 trillion	563 billion	8.0
5	Henan	2.98 trillion	485 billion	10.1
6	Hebei	2.66 trillion	433 billion	9.6
7	Liaoning	2.48 trillion	404 billion	9.5
8	Sichuan	2.38 trillion	387 billion	12.6
9	Hubei	2.23 trillion	363 billion	11.3
10	Hunan	2.22 trillion	361 billion	11.3
11	Shanghai	2.01 trillion	327 billion	7.5
12	Fujian	1.97 trillion	321 billion	11.4
13	Beijing	1.78 trillion	290 billion	7.7
14	Anhui	1.72 trillion	280 billion	12.1
15	Inner Mongolia	1.60 trillion	260 billion	11.7
16	Shaanxi	1.45 trillion	236 billion	12.9
17	Heilongjiang	1.37 trillion	223 billion	12.0
18	Guangxi	1.30 trillion	212 billion	11.3
19	Jiangxi	1.29 trillion	210 billion	11.0
20	Tianjin	1.29 trillion	210 billion	13.8
21	Shanxi	1.21 trillion	197 billion	10.1
22	Jilin	1.20 trillion	195 billion	12.0
23	Chongqing	1.15 trillion	187 billion	13.6
24	Yunnan	1.03 trillion	168 billion	13.0
25	Xinjiang	747 billion	121 billion	12.0
26	Guizhou	680 billion	110 billion	14.0
27	Gansu	565 billion	92 billion	13.0
28	Hainan	286 billion	47 billion	9.1
29	Ningxia	233 billion	38 billion	11.5
30	Qinghai	188 billion	31 billion	12.3
31	Tibet	70 billion	11 billion	12.0

*US$1 = RMB6.143

Table 4.5 Primary Chinese Provincial GDP Figures (Source: National Bureau of Statistics, 2012)

4.3.7 Pollution in China

PM stands for Particulate Matter and is also known as particle pollution. PM is a mixture with very small particles and liquid droplets that exist in the air. The particles can be divided in two types, fine particles, PM 2.5 and inhalable coarse particles PM 10, because the size is 2.5 micrometres in diameter for PM 2.5 and 10 micrometres for PM 10.

As can be seen from figure 4.12, PM 2.5 particles are combustion particles, organic compounds and metals, created from vehicle emissions, industry processes and other kind of combustion processes.

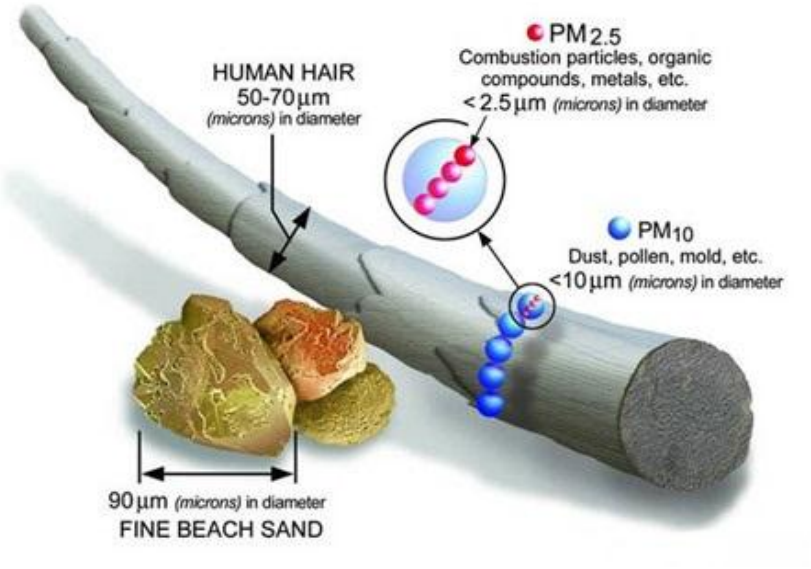

Figure 4.12 Particulate Matter explanation (Source: english.cntv)

As can be seen from figure 4.13 the pollution is highest at the east coast and areas near the east coast. According to the World Health Organization (WHO) a recommended safe level for the PM 2.5 and PM 10 is around 25. From the figure it can be seen that the safe level has been surpassed by far, reaching 999 in some areas.

This is a huge problem for China, both from a health perspective and economic perspective. If the WHO air guidelines for PM 2.5 and PM 10 had been met in year 2012 for Beijing, Shanghai, Guangzhou and Xi'an, the number of deaths would have decreased by a minimum of 81%, and the economic benefit as a result from this would amount to 875 million USD.

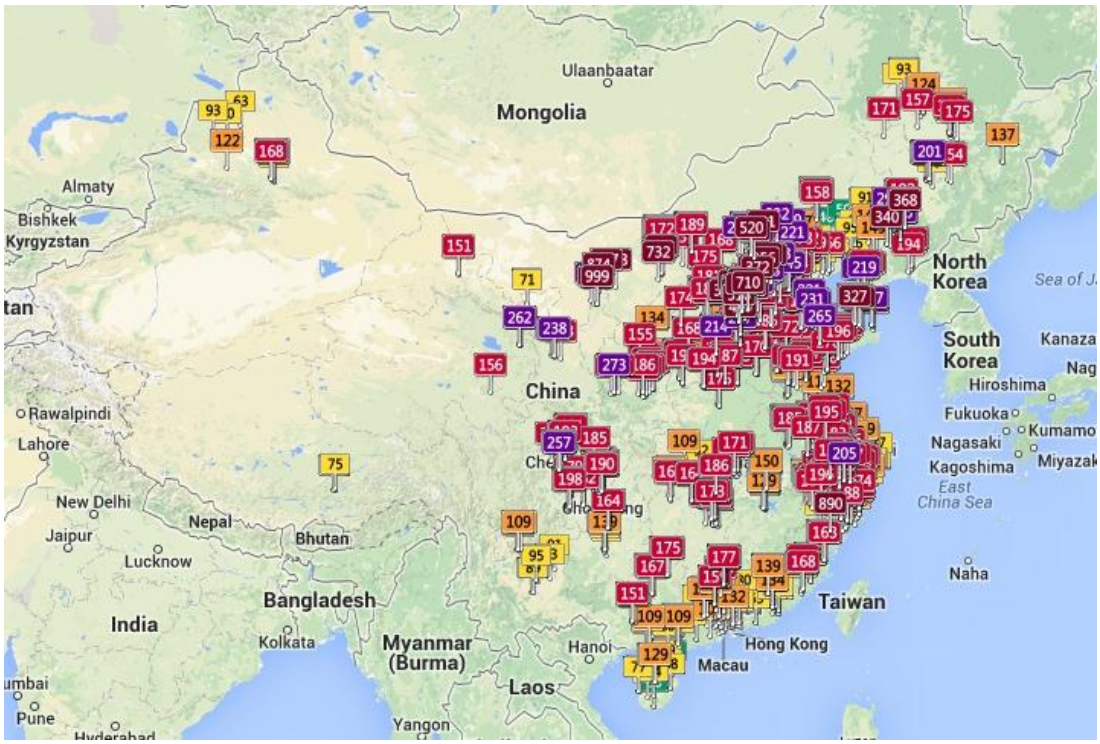

Figure 4.13 Air pollution in China, PM 2.5 intensity (Source: aqicn, 2014)

5 ANALYSIS

This chapter will use the theoretical tools that were introduced in the framework to analyse the empirical findings. In order to maintain structural integrity throughout the report the analysis chapter is divided into three parts, each part belonging to one research question. The first part will analyse the opportunities and challenges that arise due to the Network architecture of Opus Group. The second part will analyse how the offerings of Opus Group can be changed to fit the Chinese vehicle inspection market. The third part analyses how Opus Group can cope with the Chinese context when it comes to different laws and regulations, the protection of intellectual property, due diligence and business culture.

How should vehicle inspection companies like Opus Group approach the Chinese market in order to enter and succeed in the market?

5.1 Network opportunities and challenges for Opus Group in China

Grant (2002) has described a process which can be used to analyse the competition, this can help companies to choose suitable market strategies and is divided into three steps. The first step is to identify the competitors, which can be made by analysing the customer choice or by analysing their offerings. The second step is to outline and define the competitors by studying their offerings and market.

In this project the competitors are defined by their offering, that is, by the products and services they offer in China. From the empirical chapter table 4.3, the top six international vehicle inspection companies in the world which are active in China are listed. From this table it can be seen that all the international companies offer similar services in the same cities, except for some who have acquired Chinese vehicle inspection companies that are active in other locations. The international vehicle inspection companies are mostly active in the big cities such as Shanghai, Beijing, Chengdu, Tianjin, Guangzhou, Hangzhou, Hong Kong and Nanjing, etc.

There are also some important local vehicle inspection companies that can be identified in the same way. These companies pose a threat for vehicle inspection companies that are already active in the Chinese market by competing with them over the market share. But on the other hand they provide Opus Group with a huge opportunity because they can be a way to enter the Chinese vehicle inspection market through acquisition or if not, they can become customers of Opus Equipment instead.

Appendix A and table 4..4 show that the regions in which the international vehicle inspection companies are active in are characterized by large vehicle populations, higher income levels and figure 4.13 shows that the air pollution levels in these regions is very high. As mentioned in the theoretical framework, attractive places to invest in for vehicle inspection companies are places where the inhabitants have a higher standard of living, places with a high vehicle population and a high pollution level. This will enable Opus

Group to have a sound price structure which increases the profit margins and to help the regions to meet the goals for reducing the air pollution set by the central government.

As mentioned in the empirical chapter, the vehicle population has been rising the last couple of years, at the end of October 2013 the vehicle population in China reached 250 million and is expected to increase even more in the future. At the same time there is a big shortage of vehicle inspection stations, and this is inconvenient for the people since they have to wait for a long time to get their vehicles inspected and approved for driving in the traffic. It is mentioned that there is on average one inspection line available for 50 000 vehicles. This leads to high waiting times, sometimes several days for a vehicle inspection, and that many unsafe vehicles are driven around in the traffic which in turn increases the negative environmental effects and the number of road accidents.

In other words, there is a high customer demand for vehicle inspection stations because of this shortage even though many international vehicle inspection stations have already entered the same market through acquisitions of local companies.

Because of these unmet needs, the business potential for Opus Group to enter this market is huge, even in areas in which other vehicle inspection companies are already active. When looking at the market situation like this, it is easily assumed that this automatically decreases the need for Opus Group to put large effort and money on differentiating from the competitors in order to get customers. But it also poses a threat for Opus Group in the future, after having entered the market. Because of the high demand and a small need to differentiate from the competitors, the entry barriers are low, assuming the deregulation has occurred. This will attract more competition, international and local. The exit barriers will depend on how much investment is needed to start up a vehicle inspection station in China. If it is costly, the exit barriers will be high and this will have other implications on the competitive rivalry and profitability of the market. The rivalry will be intense and the profitability will be lower. So the need for Opus Group to differentiate will still exist. More on how Opus Group should change their offering to become more competitive and increase the entry barriers will be elaborated in the offering analysis below.

Since the vehicle inspection business in China is very profitable, the central government is currently reluctant to open it up completely for international companies, it is therefore categorized as a highly regulated business. This makes it almost impossible to get the required certifications and permits to open a vehicle inspection station as a foreign company without acquiring or collaborating with local actors. This makes all the international companies listed in table 4.3 potential competitors when the government decides to open up the market completely. Some international companies such as TÜV SÜD group are offering other services in China and are waiting for the deregulation so that they can open their own vehicle inspection.

As mentioned by Kotler et al., (2008) the type of competitors that are most likely to ruin a company are not the current ones that one can see but rather the potential ones. So, in order to keep away the potential competitors, Opus Group will have to put an effort to differentiate and in that way increase the entry barriers to decrease the threat of potential competitors. How Opus Group can do this will be elaborated in the offering analysis**.**

The third step according to Grant's 2002 process is to evaluate and analyse the competitors. The aspects that need to be considered are the rivalry among the competitors and the threat of new entrants. It is mentioned that the number of companies in the market has an influence on the competitive rivalry. Currently, the number of vehicle inspection companies is not large in the Chinese market and because of the relatively few vehicle inspection stations, the large number of vehicles and the long waiting times, the customer demand is far from satisfied. This means that currently the competitive rivalry is not big enough to have an impact on the entering and offering strategy of Opus Group.

The future threat of new entrants on the other hand is very high in the Chinese vehicle inspection market. According to Grant's 2002 process, new entrants are most likely to appear in markets where the entry barriers are low, the large customer demand is cannot be satisfied, where there is potential for future growth and where it is easy to gain a competitive advantage over the existing companies. This applies to China in every aspect except for the entry barriers. As mentioned above, the vehicle inspection market is highly regulated by the central government, which is an entry barrier for international companies. As soon as this barrier is removed through deregulation, international vehicle inspection companies already offering different kinds of products and services in China will open their own inspection stations. So it is important for Opus group to be among the first entrants and to differentiate from the other inspection companies.

5.2 Adjusting Opus' offerings to China market

The imbalance between the growth of the vehicle population and the shortage of inspection stations has resulted in the promulgation of *Opinions on Strengthening and Improving the motor vehicle inspection work (29th, April, 2014).* This law encourages the socialization of vehicle inspection stations, which means that the market will play a key role in the resource configuration instead of the government. As indicated in Figure 4.7 and Figure 4.9, small passenger vehicles occupy 76.6% of the total increase of the vehicle population, moreover it has the highest growth rate among all the vehicle types. It can be concluded that the inspection service for small passenger vehicles has a large profit potential and Opus Group should focus on this market segment.

In order to help Opus Group to adapt its offerings to the Chinese context, the five product levels that Kotler (2008) has mentioned can be utilized. Positioning the products and/or services on the market is the first step in this approach. The core benefits for the customers when buying the inspection service are to ensure the driving safety, decrease the emissions

and pass the regular compulsory tests. That is why Opus Group needs to transfer these demands into basic products or services. Opus Group owns a technology in advanced equipment and related services, these products and service mix can better satisfy the core benefits. When considering the *expected products* in the vehicle inspection service, the customers would expect that the inspection results are actuate and authoritative. Kotler (2008) points out that the competition usually occurs in this level. As China is among the developing countries, even the expected needs cannot be met to some extent. That is why Opus Group should not ignore the expected needs when designing competitive offerings in China. Regarding the *augmented products,* if Opus Group can offer less bureaucratic services that result in time-savings and that are beyond the customer expectations, then a competitive advantage can be obtained over the local competitors. *The potential products* are what Opus should focus on to retain a competitive advantage and differentiate from the competition. Since the vehicle inspection falls into the equipment based "pure service" category, the service quality mainly depends on the equipment and facilities. Even though Opus Group owns a technology-leading equipment, the service contents and form are very easy to be copied, especially in China. Opus Group needs to continuously analyse the changing demands of the customers, offering them augmented and potential services in order to differentiate in the market.

Considering the current problems that the Chinese vehicle industry is faced with, relevant analyses and recommendations will be provided with focus on the augmented and potential product levels. Because these levels are aimed at differentiating the offerings, cultivate the customer loyalty and often with high competition. Opus should endeavour to solve or mitigate these problems to keep competitive. Regarding the corruption, it occurs due to the lack of supervision of the vehicle inspectors and there are bugs in the inspection system. We advise Opus Group to train inspectors regularly and professionally. The inspector should be responsible for the vehicles he or she has tested, once problem has appeared, the responsible inspector can be trackable. But supervision from the technology aspect is necessary as well. With the help of the complete Data Management Solutions from Opus Group, the inspection results will receive sufficient supervision, which will prohibit illegal behaviors effectively. Issuing the *Opinions* to encourage the privatisation process of the vehicle inspection industry can be seen as a clue of the Chinese government's determination to prevent corruption. It is therefore a valuable chance if Opus Group can negotiate and provide the government with technological support to get rid of the corruption.

Regarding the long waiting times, one reason for this is that the supply of vehicle inspection services cannot satisfy the demand. Opus Group can run vehicle inspection stations in areas that does not have many inspection stations, or in an area with a large vehicle population. From an organizational level, the waiting time is caused by the inefficient processes or the layout of the inspection stations. Time-saving can be seen as an expected demand from the customer side and Opus Group has to offer a complete vehicle inspection program solution to better satisfy these unmet demands. The way Opus Group should design the processes is

not only about providing a product or service. The interaction between the customers and the company should be placed at the same importance. Examples of this can be: to keep the channels of feedbacks smooth, value customer complaints and keep a close relationship with customers by providing some tips on vehicle maintenance, etc.

Regarding the fraud in emission testing, the government has already realized the problem and has started to punish those that are involved. However, only depending on government supervision is far from enough. As for Opus, making use of its technology and experiences and provide the Chinese government with the means to solve this problem will make the entering process easier. As shown in the PM 2.5 map, the environmental pollution is very severe in China, especially in the eastern and middle parts. The current situation forces the government to take actions to solve this problem, which is not only for the face and reputation of the government, but it is also closely related to local officials' promotions. As Opus Group is leading in emission testing, "Remote Sensing Device Technology", "wireless vehicle inspection" and "Tamper Terminator technology", they can be attractive to the Chinese government. Opus Group should keep a close relationship with the government and promote this technology to the market, which helps to achieve a "win-win" situation.

Customers do not judge the offering only based on the products and services, but also the price. Since the vehicle inspection industry is a highly regulated industry and even though the price is set beforehand and controlled by the local bureau of commodity price, it can be seen in figure 4.5, that almost seven out of ten cities have increased the price illegally. Opus Group can still take an initiative to connect the pricing strategy to its marketing strategies, fostering a positive company image. Opus Group can achieve this by keeping the price structure transparent and reliable so as to facilitate the supervision by the public and the government.

In addition to the small passenger vehicles, figure 4.3 and figure 4.4 show that the motorcycle population makes up large percentage of the total vehicle population. In 2003, it occupied 61.4%, the percentage decreased in 2013, but still 46% of the total vehicle population were motorcycles and low speed vehicles. According to *Implementation of the Law of the People's Republic of China on Road Traffic Safety*: "A motorcycle shall be subjected to one inspection every two years during the first 4 years. If it exceeds 4 years, it shall be subjected to one inspection every year". Both the motorcycle population and the regular compulsory test stipulated by the law guarantee the large demand in the market. Opus Group should take this market segment into consideration when designing the offerings, however, due to the time limitation, this area will not be the focus in this thesis.

5.3 Coping with the Chinese context

Successful establishment in the Chinese market is not easy and requires an understanding of the external and internal factors, as mentioned in the theoretical framework. The internal factors that have been analyzed above are *the network possibilities and competitor analysis* and the *offering analysis*. The external factors in relation to the market are those factors that are not a part of the market per se, but have an impact on Opus Group from outside the market. The external factors that will be analyzed below are:

- Laws and regulations
- Business culture
- Intellectual property
- Due diligence

5.3.1 Intellectual property

Even though the intellectual property protection (IPP) system in China has constantly been improving during the last couple of years, the current enforcement of IPP is still a small fraction in comparison to the European countries. So, there is still room for many changes to occur to even come close to the required standards.

China's size, decentralized and hierarchical structure of governance makes it difficult to implement and enforce laws and regulations in general, including IPP. It is common to find instances where the actions taken by the central, provincial, and local governments are different in terms of their interpretation of the laws, also their commitment to enforce the same. As a result, as mentioned above, legal enforceability varies by location and industry.

As stated above, this is a general problem that not only affects the IPP but also other areas. For example, foreign companies wanting to enter the Chinese vehicle inspection market may rely on textual laws regarding investments in the vehicle inspection industry, which is classified as allowed in the *Catalogue of Industries for Guiding Foreign Investment.* But as the empirical chapter has shown through interviews and other research methods, the vehicle inspection market is highly regulated by the Central Government due to their unwillingness to open it up for foreign companies because of its high profitability. So, if Opus Group decides to open a vehicle inspection station somewhere in China and puts in a lot of effort and investment to do so because it is categorized as allowed in the *Catalogue of Industries for Guiding Foreign Investment.* Then it may be shut down by the government and the effort was in vain as well as the investment is lost.

The Chinese market is much more sophisticated than it was in the recent past, this means that Opus Group will have to enter the market with their most advanced technology. It is therefore very important to acquire a solid understanding of Chinas' IPP- laws and the options currently available for protecting the know-how should be identified.

As mentioned in the empirical chapter, there is a way how Opus Group can initially protect its know-how as a first line of defense against patent infringement before filing for an invention patent and that is to file for a utility patent. The invention patent takes quite some time to be granted while the utility patent is usually granted within a year from the filing date. That is why Opus Group needs to file for an invention patent and a utility model patent at the same time, if they decide to bring their know-how to the country in the near future. The utility patent however must be abandoned before the invention patent can be granted. This is important to do because, as mentioned in the empirical chapter, China uses a ‘’first to file’’ system, which means that as long as a company has not filed for a patent in China, even though they have a patent from Europe, it is invalid in China. This is because patents are territorial rights, to ensure that your know-how is protected in China, a patent made by China is required.

It is generally believed that a patent, copyright or trademark is enough to protect the know-how, in China it is not. As mentioned in the empirical chapter, IPP is a constant adjustment and different kinds of threats should be expected every day. A key capability for Opus Group to successfully operate in China is dynamic and proactive management, control of IP leakage and to implement an offensive IPP- strategy.

Schotter & Teagarden (2012) have developed a framework that details a best practice IPP-model, including defensive and offensive activities to protect the IP. These are explained in the empirical chapter. The analysis of what Opus Group specifically needs to consider when they decide to bring their know- how to China is out of the scope of this project and will thus not be subjected to a further analysis.

5.3.2 Due diligence

As mentioned by Yong (2013), the corruption is common in China and it affects the local population as well as the international companies doing business there. According to Transparency’s International’s Corruption Index, China was ranked 80th out of 176 countries and scored as much as 39 out of 100 points. In 2010, 106.000 officials from all provinces in China were accused for some type of corruption. The corruption cases in China range across the private and public sector and it can come in many forms such as graft, bribery, embezzlement, backdoor deals, etc. This is not new in China, but since the transition from a planned economy to a market economy, the corruption has become more profitable and prevalent.

If Opus Group wants to operate businesses effectively in China, they have to understand Chinese investment laws and their implications thoroughly. Even Chinese citizens are skeptical when it comes to putting their trust on the laws and regulations to protect their own rights. To that end, Opus Group, as a foreign company, will find it even more problematic to rely on Chinese laws and regulations. Chinese contracts can be mentioned as an example. They are written in general terms and differ a lot from Western contracts, which specify explicit terms, conditions, and scenarios. In addition to this, the primitive

system of laws and regulations are worsened by a poor enforcement system. Indeed, the best way for Opus Group to mitigate the risks of this poor regulatory system in the enforcement of rules and regulations is by making a thorough due diligence. What Opus Group should do to make a good due diligence is to find a due diligence team that are specialized in this area. The due diligence team should be made up of a diverse team comprising a team leader, industry experts, legal councils and investigators.

Opus Group should be aware that conducting a due diligence in China involves high risks because of the limited public record available. Due to this, Opus Group should be prepared that the due diligence in China will take significant time, effort and costs in order to obtain the information needed. This lack of transparency could result in loopholes that increase the risk of account manipulation or fraud from the potential local vehicle inspection companies Opus Group thinks about acquiring. In addition to this, it is important for Opus Group to know that Chinese companies usually do not have systematic business processes, good documentation or filing systems. For this reason, when Opus Group will conduct a due diligence, it will be difficult to make Chinese companies to give complete and accurate information within a preset timeframe. Moreover, it is common to find that Chinese companies purposely leave out certain key information and do not record them in their books.

As detailed by Young's due diligence model, the due diligence process usually starts with an investor approaching a company with prepared checklists. The target company should prepare the necessary documents these checklists require and provide them to the investor. Opus Group should not solely rely on the information provided by the target company though, because there is a risk that the target company has manipulated or counterfeited the information in order to paint a greener picture of the company's performance than what it actually is.

What Opus Group should think about when approaching a potential local vehicle inspection company with the checklists is to make the approach gradually and respectfully towards the local company. The reason why this is very important is because the local company might be overwhelmed by the checklists, especially if it is their first experience with foreign investors. The potential company may also be cautious and scared because of the amount of information requested and if the first approach is not made in a cautious way, the target company might consider the entire due diligence process as a persecution for fraud and errors in the way they had conducted business in the past. Furthermore, the target company might not want to reveal its important data and secrets to another company when the result and success of the due diligence process is not certain and they might also be suspicious of the intent of Opus Group. A part of the solution for Opus Group can be to directly speak with the senior management about important questions about the company and other unrecorded information that would otherwise not be disclosed.

According to Young's 2013 model, the checklists are divided into two categories, namely the compulsory checklists and the optional checklists and it is important that Opus Group goes through these checklists and through the help of the due diligence team identify all aspects that are important to know when wanting to acquire a local vehicle inspection company.

5.3.3 Laws & regulations and business culture

As have been stated many times throughout the report, China should not be considered as a place with only one prevailing market and culture. Each region in China has its own specifics regarding the culture and hence the way to do business. An example of this can be derived by comparing north of China with south of China, the northerners are perceived as more generous and straightforward but also more conservative and feudalistic. The southerners on the other hand, are perceived as more tender, democratic and enthusiastic. Even the laws, regulations and the enforcement of the laws differ from region to region. In the eastern regions, the laws and the enforcement of the laws as well as the transparency of the same are more emphasized than in the mid-west regions of China. Even though it is better in the eastern regions, it still does not come close to the United States and European countries. A big gap still exists between what the laws claim and the enforcement of these laws. An example of this is mentioned above with the classification of the vehicle inspection industry. The laws state that it belongs to the permitted category while in reality it is highly regulated by local governments.

Based on the unique Chinese business culture, Torres (2010) has mentioned that *guanxi* can act as a bridge so as to often make difficult things easy in China, keeping a close *guanxi* with the government is especially important in the highly regulated industries. The way on Opus Group can utilize this is by combining their know-how with a better understanding of the Chinese business culture. The *guanxi* starts by having both parties willing to create a *guanxi* base through mutual trust. Chinese people prefer to understand their potential business partner as an individual first with regards to character, temper and values, etc. it is thus not enough for Opus Group to show their business plan and reasons why corporation with them is a better option than with others. They want to know if you as a person are trustworthy enough. A common way of building a *guanxi* base is to invite the people to dinner and drink alcohol with them, since Chinese people like to combine business with personal life. Opus Group needs to be aware of this and learn to comprise and respect the custom, refusing an invitation will often make a Chinese business partner lose face. *Guanxi* when dealing with government officials is about being active in adapting to the culture and show sincerity to establish a mutual trust.

Another factor that Opus Group needs to be aware of is the respect towards a business partner. To care about their face and to respect their age and authority is deeply rooted in China from thousand years of history and tradition. When Opus Group will negotiate with the government or a business partner in general, it is important to be seen as someone who is trying

to save the face of the other party by compromising to some extent, Opus Group thus needs to adapt to this culture and avoid misunderstandings that could destroy deals and harm the relationship. Moreover, calling the senior, aged or especially the officials' name directly is regarded as disrespectful behavior. Opus Group can improve its company image by caring about these details in any business negotiation in China by using the honorific titles "Mister", "Miss", "Boss" "Director" etc.

Chinese business culture is evolving and is becoming one of the most important actors in the global market. Chinese businessmen generally accept the cultural differences between China and the western countries and will thus not expect foreigners to be fully familiarized to their tradition. Today, the Chinese are more pragmatic, "if you have something they want, they'll do business with you no matter whether you can hold chopsticks or not." The *guanxi* is more related to retain a mutual profitable relationship. Opus Group needs to figure out how to use their technological advantages to solve the problems within the Chinese vehicle inspection industry, more specifically, how to connect what Opus Group offers to what the officials want. An example of this is that maybe Opus Groups' know-how works better at monitoring and controlling the emissions, which will be considered as an important factor for the officials' future promotion. As long as the government or the responsible officials recognize the practical benefits that Opus Group can bring them, entering China will be much easier. Opus Group also needs to notice that gifts are often expected and appreciated in building the *guanxi*. However, small gifts are regarded as a way to show gratitude and respect, whereas valuable gifts often imply the obligation of the recipient to do something for the giver in return. *Guanxi* is for the long term relationship while bribery is only for short benefits.

6 CONCLUSION

This project started with the formulation of a general aim which was "How should vehicle inspection companies like Opus Group approach the Chinese market in order to enter and succeed in the market?"

In order to make this general aim approachable it was divided into three categories, the network architecture, the offering and the market analysis. Each category was followed by a general research question that included all the important aspects of the respective categories. In order to answer these research questions, theoretical and empirical data was collected and analyzed for each category.

RQ1: What actors constitute the current network architecture in the Chinese vehicle inspection market?

In order to answer this question, the theory belonging to the network architecture was used as a tool to process and analyze the empirical data collected. The conclusion is that there are many actors in the vehicle inspection market that affect the current market situation. Among the actors, some pose a threat to Opus Group while other actors provide Opus Group with huge opportunities. Among the actors that pose a threat are the international vehicle inspection companies that are already active in the Chinese market or are active in other areas in China and are waiting for the deregulation so that they can be among the first entrants in the vehicle inspection market.

Opus Group has three ways and opportunities that can be used in the network to help them enter the Chinese vehicle inspection market. The first way is that it follows the example of the international inspection companies that are offering vehicle inspection in China. That is to acquire local vehicle inspection companies and in that way be active in the inspection market.

The second way is to expand Opus Equipment in China and wait for the deregulation to occur and in that way include the inspection service in the future. This is similar to what TÜV SÜD group is doing. The drawbacks with this approach is that there is a high uncertainty of when this will happen. Even though, as mentioned in the empirical chapter, China is approaching a free market economy, this approach is gradual and takes time.

The third opportunity that Opus Group has is the good relationship they have with Volvo Trucks, who in turn has a very optimistic relationship with the Chinese government and administration of Beijing. If Opus Group plans to enter the Chinese market in the near future, the relationship with Volvo Trucks can be made better use of.

RQ2: How should vehicle inspection companies like Opus group adjust their offerings when entering the China market?

There is an increasing demand for vehicle inspection in China, especially for the small passenger vehicles. According to the interviews that were made, many ambitious global inspection service providers are competing or preparing to compete over the profits in this market. Our recommendation for Opus Group is to focus on the small passenger vehicle inspection market first, and not neglecting that there is a large population of motorcycles in China. The motorcycle inspection market can be seen as a large potential market which needs further investigation.

With regards to the small passenger vehicle inspection market, it is advised for Opus Group to adjust the current offerings to better fit the Chinese context. In order to better understand this market, the "five products level" were used to elaborate different levels of customer demands. Based on the analysis, we suggest Opus Group to put more effort in the augmented and potential services. The service should be time-saving, with less bureaucratic processes and corruption, etc. The service form or contents, however, are very easy to be imitated and Opus Group needs to continually provide premium services in order to fit the changeable market environment and retain a competitive advantage.

Considering the current bottlenecks in the Chinese vehicle inspection industry, we discussed these phenomena and provided some solutions that Opus Group can implement when entering China. Regarding the corruption, the Chinese government have taken measures and are trying to have it under control. Opus Group has the complete Data Management Solutions and Tamper Terminator technology, which should be attractive to the Chinese market in fighting the corruption. If Opus Group can cooperate with the government so that the technology can be promoted in this industry, both Opus Group and the Chinese government can benefit from it.

Other solutions, like training the inspectors regularly and keeping the inspection results trackable can be applied together with the technology. When it comes to the long waiting times, Opus Group can apply their experiences from other countries to optimize the vehicle inspection processes in China. Interacting with the customers is also very important when redesigning the process, to value the customer voices and keeping the communication channel smooth are some suggestions on how to achieve this.

Regarding the fraud in the emission testing, Opus Group needs to think in the same way as when trying to solve the corruption in the inspections, that is, to keep a close relationship with the government and to cooperate with the same. When it comes to the inspection prices, we advise Opus Group to make better use of the pricing strategy to foster a positive company image. As a starting point, Opus Group can try to keep the price structure transparent and reliable to facilitate the supervision by the public and the government.

RQ3: What socio-economic factors need to be considered when trying to do business in China?

As can be seen from the analysis on the third research question, the socio-economic factors are divided into three parts. The intellectual property, due diligence, laws and regulations and business culture.

When entering China, Opus Group has to always keep in mind that the reality differs from what the laws have claimed. Understanding the laws related to this industry is necessary, but still far from enough in order to establish a successful business in China. Another important aspect that should be emphasized is *guanxi*, especially in the highly regulated industries. Therefore, we suggest Opus Group to be active in developing and retaining a close *guanxi* with the government before entering the Chinese market. Developing a healthy *guanxi* in China, requires the following three factors; trust; face and respect for age and authority; reciprocity and long-term orientation.

Chinese businessmen prefer to build a mutual trust before any serious business relationship. They primarily want get to know you as an individual and not only about your ambitious business plans. Besides, Chinese people are sensitive about their "face" and they want others to respect age and authority. Moreover, the business culture is becoming more pragmatic nowadays and the business relationship is based on a mutual beneficial *guanxi*. Opus Group needs to be aware of some behaviors in real life when trying to get along with Chinese businessmen: Chinese people like to build the trust by inviting you to a dinner and drink with you, to refuse the invitation will make them feel " lose face"; call the senior, aged or especially the officials' name directly is impolite and disrespectful and should be avoided; Gifts-giving plays a very important role in retaining long term business relationship but one should be careful not to cross the line so that it is categorized as bribery.

As has been mentioned throughout the report, the interpretation and enforcement of the laws and regulations in China are weak. This automatically leads to a weak protection on intellectual property rights. Opus Group should have a solid understanding of the legal system in China before any attempts of entering the market are made.

A first step that Opus Group should make is to file for a utility patent and an invention patent at the same time. This will provide Opus Group with a first line of defence against IP- theft, but the utility patent must be abandoned before the invention patent can be granted.

A key capability for Opus Group to successfully operate in China is dynamic and proactive management, control of IP leakage and to implement an offensive IPP- strategy. They should consider the IPP as something that needs modification every day and that doing it one time does not mean that the know-how is secured forever.

It has been mentioned that the corruption is widespread in China and it affects the local population as well as the international companies doing business there. It can come in many forms such as graft, bribery, embezzlement, backdoor deals and many others.

The only way for Opus Group to mitigate the risks of this poor regulatory system in the enforcement of the laws and regulations is through a due diligence. What Opus Group should do to make a good due diligence is to find a due diligence team that are specialized in this area. The due diligence team should be made up of a diverse team comprising a team leader, industry experts, legal councils and investigators.

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APPENDIX:

Possession of Civil Motor Vehicles (Source: *China Statistical Yearbook 2013*) (10 000 units)

Year / Region	Total	Passenger Vehicles					Trucks	Trucks				Others
			Large	Medium	Small	Minicar		Heavy	Medium	Light	Mini	
2002	2053.17	1202.37	75.48	104.80	789.74	232.34	812.22	148.28	218.69	360.58	84.66	38.58
2003	2382.93	1478.81	75.76	115.96	1017.21	269.88	853.51	136.79	243.70	390.79	82.22	50.61
2004	2693.71	1735.91	78.06	124.54	1248.89	284.42	893.00	153.90	233.94	425.74	79.43	64.80
2005	3159.66	2132.46	82.13	131.65	1618.35	300.32	955.55	168.07	236.66	484.51	66.31	71.66
2006	3697.35	2619.57	87.34	137.00	2083.40	311.83	986.30	174.01	235.39	532.13	44.76	91.49
2007	4358.36	3195.99	93.82	140.52	2646.47	315.18	1054.06	186.74	243.46	587.22	36.63	108.31
2008	5099.61	3838.92	100.39	143.19	3271.14	324.19	1126.07	200.84	249.73	644.96	30.54	134.62
2009	6280.61	4845.09	107.95	145.80	4246.90	344.44	1368.60	315.08	262.21	765.33	25.97	66.92
2010	7801.83	6124.13	116.44	146.07	5498.36	363.25	1597.55	394.80	269.75	911.88	21.12	80.14
2011	9356.32	7478.37	126.54	147.41	6827.54	376.88	1787.99	460.58	267.80	1042.07	17.54	89.96
2012	10933.09	8943.01	128.13	131.78	8302.63	380.47	1894.75	472.51	229.20	1179.65	13.40	95.33
Beijing	493.56	464.86	5.00	10.78	432.90	16.19	23.70	5.05	3.23	15.42	-	5.00
Tianjin	221.12	197.30	2.26	1.77	182.45	10.82	22.19	4.09	1.46	16.56	0.07	1.63
Hebei	728.51	568.13	5.07	4.14	510.17	48.75	153.42	53.85	11.29	87.39	0.89	6.96
Shanxi	329.95	270.80	2.74	2.10	245.72	20.24	56.78	21.28	4.04	30.67	0.79	2.37
Inner Mongolia	266.08	215.94	2.29	1.15	202.90	9.60	47.72	16.69	1.71	28.94	0.39	2.41
Liaoning	414.88	328.63	6.67	9.61	303.68	8.67	82.22	23.68	7.04	51.21	0.28	4.03
Jilin	209.49	170.94	2.89	1.87	158.14	8.03	36.99	10.57	3.68	22.55	0.20	1.56
Heilongjiang	259.87	201.42	4.42	2.97	184.81	9.21	55.86	17.90	6.68	30.76	0.51	2.60
Shanghai	212.66	185.71	4.49	5.26	172.51	3.46	20.73	5.63	8.35	6.73	0.02	6.22
Jiangsu	802.20	706.27	8.89	10.54	666.26	20.58	89.29	30.29	17.81	40.98	0.20	6.64
Zhejiang	773.56	664.08	6.00	7.00	633.06	18.03	105.02	12.88	9.20	81.16	1.77	4.46
Anhui	303.13	225.98	3.91	3.29	211.46	7.32	74.23	24.06	5.95	43.84	0.37	2.92
Fujian	283.92	224.45	2.81	3.89	211.62	6.13	57.49	8.22	4.55	44.04	0.68	1.98
Jiangxi	201.64	152.73	2.26	1.84	143.81	4.83	47.01	13.83	5.53	27.49	0.17	1.90
Shandong	1027.16	860.89	9.33	8.40	790.92	52.23	159.88	44.81	12.43	102.05	0.60	6.39
Henan	581.95	467.49	6.14	5.05	429.87	26.44	109.61	36.99	10.72	61.26	0.64	4.85
Hubei	293.64	227.76	4.64	4.28	215.04	3.79	62.69	11.84	9.58	41.10	0.17	3.19
Hunan	308.14	247.99	3.81	4.59	233.54	6.05	58.17	10.23	10.19	37.56	0.19	1.97
Guangdong	1037.42	861.60	15.84	19.42	814.22	12.13	169.86	20.77	19.28	126.58	3.22	5.96
Guangxi	227.44	175.77	3.53	2.52	159.90	9.82	49.20	11.79	8.02	28.63	0.76	2.46
Hainan	55.46	43.75	1.25	0.89	41.05	0.55	11.12	1.25	1.28	8.55	0.04	0.60
Chongqing	159.36	125.42	2.70	1.53	118.83	2.36	31.56	6.97	6.17	18.42	0.01	2.37
Sichuan	493.22	406.08	6.48	3.32	363.12	33.16	83.77	16.27	17.53	49.70	0.27	3.37
Guizhou	164.36	126.47	1.69	2.08	116.76	5.94	36.72	4.74	5.73	26.12	0.13	1.17
Yunnan	328.53	248.76	2.34	3.26	227.05	16.12	77.88	11.07	16.62	50.05	0.14	1.89
Tibet	22.77	14.16	0.71	0.95	11.47	1.04	8.33	2.79	1.56	3.83	0.15	0.28
Shaanxi	284.64	235.61	3.18	3.06	217.63	11.74	45.54	13.37	6.89	25.04	0.24	3.48
Gansu	129.14	92.32	2.01	1.47	86.63	2.20	35.42	8.12	4.73	22.51	0.07	1.40
Qinghai	49.13	36.65	0.65	0.62	34.59	0.80	11.77	2.59	1.09	8.04	0.05	0.70
Ningxia	66.35	45.94	0.95	0.69	43.38	0.92	19.41	5.51	1.54	12.26	0.09	1.00
Xinjiang	203.82	149.08	3.19	3.42	139.14	3.34	51.18	15.39	5.31	30.19	0.29	3.57

a) Cars are included in passenger vehicles.

b) Since 2002, there has been adjustment to the statistical coverages of some detailed items of passenger vehicles and trucks and other vehicles, the data are hence not comparable with those in previous years.