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# Business Opportunity of Platform-based Automotive Consultancy Bridging the European and the Chinese Markets

A Master's Thesis submitted for the degree of
“Master of Business Administration”

supervised by
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Vienna, 12.06.2020

# Affidavit

I, **DR. LIN DONG**, hereby declare

1. that I am the sole author of the present Master's Thesis, "BUSINESS OPPORTUNITY OF PLATFORM-BASED AUTOMOTIVE CONSULTANCY BRIDGING THE EUROPEAN AND THE CHINESE MARKETS", 70 pages, bound, and that I have not used any source or tool other than those referenced or any other illicit aid or tool, and
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# Abstract

The complementarity between the European and the Chinese automotive markets brings about considerable amount of business exchange with each other. However, the market participants suffer from low communication efficiency and high transaction cost, which indicates new entry opportunities for consulting firms to create customer value for the clients by making the inter-market deals easy and inexpensive.

The present thesis work aims at putting the particular scenario of such opportunities into the theoretical framework of resource-based competitive advantage and tries to determine the optimal resource bundle for supporting the generation and exploitation of the new entry opportunities. Based on that, it further addresses a number of practical issues for the new entry exploitation, such as market entry strategy, marketing strategy, organizational scheme, operational issues, risk reduction strategy, firm performance evaluation and feedback, etc.

The investigation reveals that the resource bundle shall contain not only knowledge resources but also several other specific resources like personal network and cultural adaptability, among others. It suggests a narrow-scope market entry strategy with which a service portfolio consisting of three different categories of consulting service shall be implemented in two developing phases of the firm. The marketing- and operation strategies of the firm are designed accordingly in order to be adapted to the two phases. An open innovation platform connecting consulting firms with technical specialists is discussed and recommended to solve the organizational dilemma between revenue and fixed cost for consulting business. Bootstrapping and resource planning are determined as the effective approaches for risk reduction. Iterative firm performance evaluation and feedback create further loops of new entry generation and exploitation for the firm.

The present work contributes to the automotive consultancy community to the extent that it analyzed the specific situation between the European and the Chinese markets and suggested the possibility of adopting open innovation platform in human resource management in automotive industry.

**Keywords:** automotive consultancy, new entry generation and exploitation, resource bundle, open innovation platform, European and Chinese markets, market entry strategy, risk reduction strategy, portfolio management

# Preface

The present work is dedicated to the victims of the crisis of SARS-CoV-2 around the world.

# Contents

# List of Abbreviations

| | |
|---|---|
| ABA | Austrian Business Agency |
| AD | Autonomous Driving |
| ADAS | Advanced Driver-assistance Systems |
| B2B | Business-to-business |
| BAIC | Beijing Automotive Industry Holding Co., Ltd. |
| BEV | Battery Electric Vehicle |
| BMW | Bayerische Motoren Werke AG |
| CAN | Controller Area Network |
| CNH | Case and New Holland Industrial N.V. |
| DFAM | Changzhou Dongfeng Agricultural Machinery Group Co., Ltd. |
| EBITA | Earnings before Interest, Taxes, and Amortization |
| ECU | Electronic Control Unit |
| EO | Entrepreneurial Orientation |
| EU | European Union |
| FAW | First Automobile Works Group Corporation |
| GAC | Guangzhou Automobile Group Co., Ltd. |
| GDP | Gross Domestic Product |
| GE | General Electric Company |
| GM | General Motors Company |
| GPS | Global Positioning System |
| HEV | Hybrid Electric Vehicle |
| IP | Intellectual Property |
| JAC | Anhui Jianghuai Automobile Co., Ltd. |
| LIN | Local Interconnect Network |
| M&A | Mergers and Acquisitions |
| MAN | Maschinenfabrik Augsburg-Nürnberg AG |
| NDA | Non-disclosure Agreement |
| OEM | Original Equipment Manufacturer |
| OIE | Open Innovation Ecosystem |
| PSA | Peugeot Société Anonyme (PSA Group) |
| R&D | Research and Development |
| SAIC | Shanghai Automotive Industry Corporation |

| | |
|---|---|
| SARS-CoV-2 | Severe Acute Respiratory Syndrome Coronavirus 2 |
| SIMON | Structured Investment Marketplace and Online Network |
| SME | Small and Medium Enterprises |
| SWOT | Strengths, Weaknesses, Opportunities, and Threats |
| USA | United States of America |
| XCMG | Xuzhou Construction Machinery Group |
| YTO | China First Tractor (*Yi-Tuo*) Company |

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# 1. Introduction

The late twentieth century has witnessed the emergence and rapid development of the modern economic globalization facilitated by a series of technological breakthrough such as internet, GPS, and advanced transportation techniques, among others (*Beck, 2018; Steger, 2017*). The trend is further confirmed and reinforced in the present century to date, although the resistance, questioning and challenging to it have never been absent (*Rodrik, 2018, p. 12; Banerjee & Duflo, 2003, p. 267*). With the term "modern", we distinguish the economic globalization process that we are currently experiencing from the globalization process in its conventional sense dating back to a much longer time ago. In contrast to the "old-world" global trading system aiming at the exchange of production surplus among counties, the modern economic globalization represents the novel tendency where countries and economies over the world are consciously seeking the way not only for the trading of goods and services but also for the access to broader market, the acquisition of complementary resources, and the economical division of labor (*Kozlenkova, 2015, p. 586; Nagurney, 2006*).

One of the most significant examples for the modern economic globalization is the business connection and exchange between the European and the Chinese automotive markets. One side is the birthplace of motor vehicles with the richest reservation of the state-of-the-art automotive technologies as well as the managerial and engineering human resource, but needs to face with a relatively saturated consumer market and high labor cost. The other side has the worldwide most promising market potential for automobile consumption and inexpensive labor rate, and is longing for developing the know-hows and techniques.

The founding of the joint venture between the largest German OEM Volkswagen and its counterpart in China, SAIC Motor, in 1984 symbolized the commencement of the cooperation between the two markets (*Wikipedia, 2020, SAIC Volkswagen*). Till today, the business exchange between Europe and China in automotive industry has been expanding into multiple dimensions and great extent. It is observed not only that most of the major European automotive OEMs have established their joint ventures in China, but also that the Chinese OEMs started to

acquire and hold shares of European automotive firms. The suppliers from Europe and from China are serving their customers in both markets with a full spectrum of products on different price levels. Besides the sourcing on products, the acquisition on engineering services constitutes another important part of content of the commercial activities between the two automotive markets.

The complementarity between the European and the Chinese automotive markets brings the companies from both sides together and creates enormous amount of business opportunities and transaction volume for the market participants. However, it does not mean that the transactions are without their own costs. On the contrary, due to a number of barriers intrinsically erected between the two markets, such as the distance, the language difference, the cultural barrier, to name a few, companies oftentimes find that they need to expect and plan an additional budget for finding the business partner from the other market, going through the long and complex negotiation process, and finally closing the deal. The transaction cost for such inter-market deals is significantly higher than that of the deals within the same market. It indicates new entry opportunities for consulting firms or similar to step in between and to create substantial customer value for automotive companies as clients by enhancing the communication efficiency and reducing the transaction cost in inter-market business.

The theory of resource-based competitive advantage (*Peteraf, 1993, p.179; Grant, 1991, p. 114; Barney, 2001, p. 643)* implies that each specific combination of resources that is accessible by an entrepreneur or a firm, the so-called resource bundle, endows the entrepreneur or the firm with an unique set of competitive advantages which makes the entrepreneur or the firm to be in an advantageous position for certain business area. Logically, it implicates in the opposite direction that for each specific business area, there should be an optimal resource bundle which empowers the entrepreneur or the firm to outperform other competing firms in this business area. To date, those firms who provide "information broking" services to the European and Chinese automotive companies in purpose of transaction cost reduction take such services merely as the natural extension of their existing service portfolio. Very little is known or investigated about what kind of resource bundle is the most suitable one for this specific business area and purpose and how the resource bundle shall be optimized and utilized. Due to the lack of such knowledge basis, very few firms, if any, dedicated to bridging the European and Chinese automotive markets can be found in the market till now. As a result, the market demand from the potential clients is not fully catered for and the remarkably high potential of this unique but lucrative business area is not exploited to the largest extent yet.

The present work is devoted to addressing and solving the open problem as mentioned above. The investigation is based on the framework of a new entry opportunity in its life cycle from generation and exploitation till evaluation and feedback of the opportunity, taking an imaginary consulting firm as the executing entity of the opportunities, so that the results and conclusion can be applied and implemented in practice in a more pragmatic manner. It starts with defining the new entry opportunities that are available for the entrepreneur to exploit. On one hand, it elaborates which resource bundle is necessary and optimal to the entrepreneur to generate and exploit the new entry opportunities. On the other hand, it elucidates in the strategic aspects how the entrepreneur shall exploit the new entry opportunities so as to maximize the yield out of them. Firm performance evaluation and feedback is another important topic which completes the evolving process of the new entry opportunities as well as the research of the present work. The target of the work is to combine entrepreneurial theories on new entry opportunity with empirical observation and experience and to find out the optimal resource bundle which supports the most efficient and effective exploitation of the business opportunities on transaction reduction between the European and the Chinese automotive markets. At the meantime, the basic principles and strategies in different aspects, such as market entry, marketing, operation, organization, risk reduction, performance evaluation and feedback, etc., of the exploitation of the new entry opportunities are discussed. The initial exploration on the possibility of implementing an open innovation platform to further increase the exploitation efficiency of the opportunities is carried out.

The rest of the thesis is structured as follows.

Chapter 2 introduces the new entry opportunity rationale in modern entrepreneurial theory. The definition of new entry and the three stages comprising the evolving process of a new entry opportunity are presented. The analysis approach of the present work is illuminated and justified.

In Chapter 3, an overview of the world automotive industry with the focus on the European and the Chinese markets and their complementarity to each other is given. The issues of low business efficiency and high transaction cost between the two markets are brought into discussion. The root causes for the issues are described. The market demand for elimination of the root causes indicates substantial business opportunities for the entrepreneur.

Chapter 4 focuses on the resources that the entrepreneur needs to have for market entry. It includes the knowledge resources, both technological knowledge and market knowledge of the automotive industry in Europe and in China, and other unique resources for the inter-market

consulting business. It is clarified why such a specific resource bundle is valuable, rare and inimitable, which represent the indispensable features for new entry generation.

Chapter 5 investigates on one of the most important topics for the new entry exploitation: market entry strategy. Based on the resource bundle determined in the previous chapter, it firstly proposes the service portfolio of the consulting firm consisting of three categories of services and then elucidates the choice of the market scope strategy. A competitor analysis with the advantages and disadvantages of each competitor in the market closes the chapter.

Three critical aspects in the new entry exploitation, i.e. marketing, organization, and operation, are discussed in Chapter 6. In the marketing section, a SWOT analysis of the consulting firm is carried out. Goals and objectives of the firm are defined in a two-stage approach. Marketing strategies in terms of market focus, promotion, distribution, and pricing are analyzed in details. Subsequently, the organizational issues in the two phases of the firm are illuminated. Focus is put on the feasible implementation of an open innovation platform to resolve the classical organizational trade-off of consulting firms. In the end of the chapter, the bootstrapping strategy and the operational guidelines for the three service categories are elaborated, respectively.

Chapter 7 focuses on the risk reduction strategy. Four different types of risk that the consulting firm is expected to experience are addressed, which are financial risk, economic risk, operational risk and legal risk. Possible consequences of the risks are predicted and the counter measures that the entrepreneur shall take to prevent the risks and to mitigate the adverse consequences are recommended.

In Chapter 8, the evaluation criteria and focus of the firm performance evaluation are enumerated and explained, followed by the discussion on the feedback loop to the beginning of the new entry evolving process which enables the entrepreneur to adjust and refine the resource bundle for further rounds of generation and exploitation of new entry opportunities.

The summary and conclusion of the present work are given in Chapter 9. Contribution of the work is summarized and further research directions are suggested.

# 2. New Entry Opportunity Rationale

The main objective of the present work is to explore and assess the consultancy-based business opportunities between the European and the Chinese automotive markets from an entrepreneur's perspective. In its nature, it represents the typical process of new entry generation and exploitation in an established market, which has been extensively investigated and elaborated by the academia of entrepreneurship research.

## 2.1. Definition of New Entry

With the term *new entry* it refers to three alternative scenarios: (1) to offer a new product to an established market or to a new market, (2) to offer an established product to a new market, or (3) to create a new organization to cater to the market needs. (*Hisrich et al., 2020, p. 56*). It is worth noting that within the third scenario neither the product nor the market has to be new to the customers. The newness resides in the organization itself which builds its competitive advantage upon a unique combination of necessary resources. It will be seen later in the work that the business opportunities discussed here are mainly corresponding to the third scenario.

The concept of new entry has been put in the focus of entrepreneurship research by scholars, not only because it is commonly accepted that new entry represents the definition of entrepreneurship and its essential act (*Lumpkin & Dess, 1996, p. 135*), but also due to its close connection and interaction with entrepreneurial orientation (EO), another important concept referring to the firm-level strategic orientation (*Anderson et al., 2009, p. 220*) which is entrepreneurial in nature due to innovativeness, proactiveness, risk-taking (*Rauch et al., 2009, p. 761; Wales & Gupta et al., 2013, p. 357*), competitive aggressiveness, and autonomy (*Lumpkin & Dess, 1996, p. 138*).

It is widely recognized that EO and new entry are two main determining factors for the performance of the company and they play a critical role in the outcome and achievement of

the business. However, researchers hold different opinions about the structure of the casual chain which is made up of the EO, the new entry, and the firm performance.

Covin and Slevin (*1989; 1990*), based on the path-breaking work of Miller (*1983*), advocate that new entry constitutes an integral part of the entrepreneurial orientation of a company. According to their conceptual model (Figure 1), entrepreneurship, as an organizational-level phenomenon, is described in the same dimensions of EO, and new entry is captured within the construct of EO. As a result, the differences in the firm performance are directly originated from the strategic posture of EO (*Covin & Slevin, 1991*). Enlightened by this view, a series of research works are dedicated to the investigation on the implications of EO on the firm performance (*Rauch et al., 2009; Wang & Altinay, 2012; Messersmith & Wales, 2013*; *Dada & Watson, 2013; Lechner & Gudmundsson, 2014*).

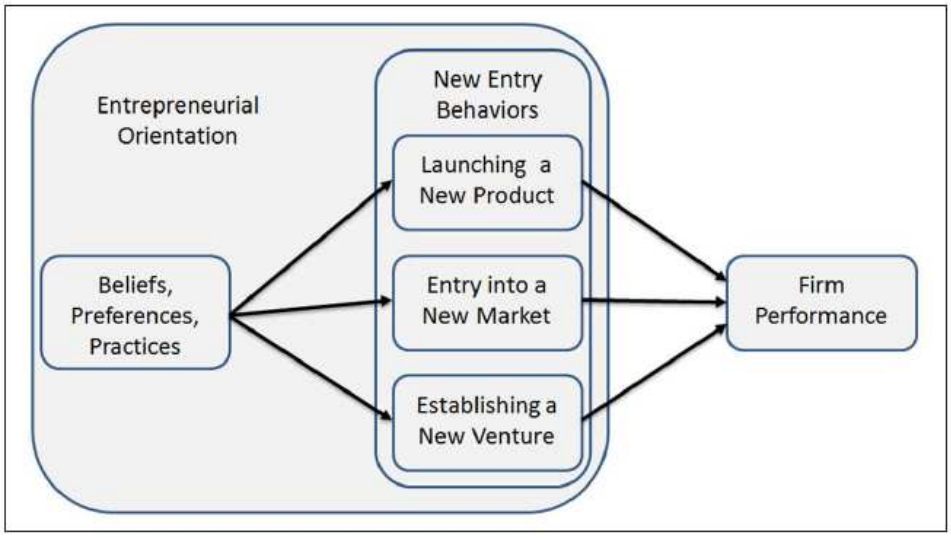



**Figure 1. Connection and interaction of EO, new entry, and firm performance according to the model of Covin and Slevin (*1989, p. 75*). Reproduced from (*Wales & Wiklund et al., 2013, p. 7*).**

In contrast, Lumpkin and Dess (*1996*) argue that new entry is the outcome of the entrepreneurial orientation of a company rather than the constituent of the EO (Figure 2). They further state that "an EO refers to the processes, practices, and decision-making activities that lead to new entry" (*p. 136*), which emphasizes the importance of new entry and its limiting effect on the EO. According to Lumpkin and Dess, only those corporate strategic postures which result in new entry in the market can be defined as EO. Based on such conceptualization, the number of dimensions for characterizing a firm's entrepreneurial orientation is extended from three (*Covin & Slevin, 1988*) to five with autonomy and competitive aggressiveness as the two additional ones.

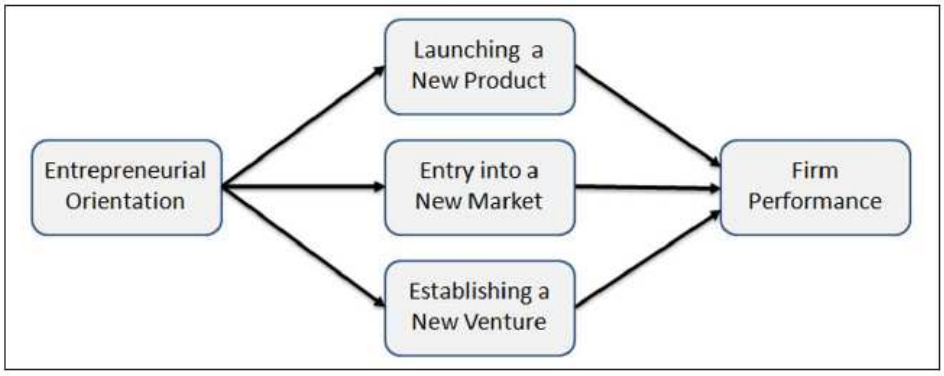



**Figure 2. Connection and interaction of EO, new entry, and firm performance according to the model of Lumpkin and Dess (*1996, p. 136*). Reproduced from (*Wales & Wiklund et al., 2013, p. 7*).**

The two conceptual models mentioned above are further compared and analyzed by other works (*George & Marino, 2011, p.989; Wales & Wiklund et al., 2013, p. 1*) and the model of Lumpkin and Dess are accepted as better reflecting the nature of entrepreneurship. It highlights and consolidates the central position of new entry in the theoretical framework of entrepreneurship. Lumpkin and Dess (*1996, p. 136*) even directly define entrepreneurship as new entry, and elaborate that "new entry explains *what* entrepreneurship consists of, and entrepreneurial orientation describes *how* new entry is undertaken."

## 2.2. New Entry Evolving Process

Almost all the new entries in the entrepreneurial practice follow certain pattern in common over time. In the life cycle of a new entry, it shows an evolving process comprised of a group of specific components aligned with each other in the manner of time and logic. Investigating on each of these components allows us to analyze and evaluate a new entry in a systematic way so that the strength and weakness of the business and its owner can be accurately identified and the probability for its success can be more precisely assessed.

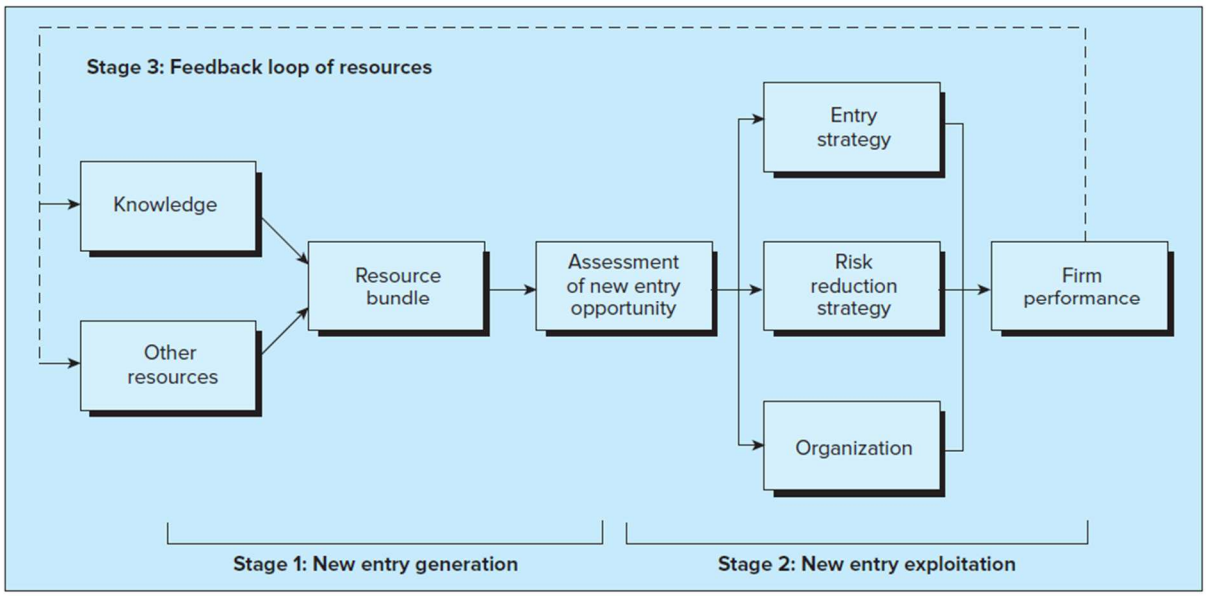



**Figure 3. The evolving process of a new entry opportunity. Reproduced from (*Hisrich et al., 2020, p. 57*).**

The life cycle of a new entry is illustrated in Figure 3 with the boxes representing the main components. The new entry evolves (as the arrows show) in a closed circle including three stages which take place one after another:

- Stage 1: New entry generation – At this stage, the entrepreneur generates the new entry opportunity based on the resources which he or she gets access to. The full set of resources that an entrepreneur has constitute the basis of his or her own competitive advantage (*Grant, 1991, p. 114*) in the market, which enables the entrepreneur to serve the customers in a favorable way that the competitors are not able to imitate. An important part of the resource set includes the entrepreneur's knowledge to the market and to the relevant technologies. Along with other resources such as network, language, capital, personnel, etc., a resource bundle which is valuable, rare, and inimitable is made up. The entrepreneur is then able to generate the new entry opportunity based on the resource bundle. The decision on whether to exploit the new entry needs to be made after the assessment by the entrepreneur considering his or her own error preference (omission or commission) and risk tolerance.

- Stage 2: New entry exploitation – After the entrepreneur decides to go with the new entry and develop it further, it comes to the second stage of the process, namely the new entry exploitation. It is the critical phase where the new entry is turned from an abstract idea into real business. During this process, the entrepreneur needs to choose the appropriate entry strategy by taking into account the uncertainties of market demand, technological trend, customer behavior as well as the enterprise's market positioning

and capability of adaptation. He or she also needs to work out strategies for reducing the risks and downside loss associated with the new entry. For example, well-designed market scope strategies could help the entrepreneur to keep an ideal balance between market uncertainties related risks and exposure to competition with established strong competitors. Furthermore, the organization of the business and the company is another important factor to consider, this is especially the case for a new organization. It directly impacts on the utilization efficiency of the resources, the profitability of the firm, and the team morale. The entrepreneur has to spend time, cost, and effort on hiring, team building, employee training, corporate culture construction, communication channel maintenance, and so on.

- Stage 3: Feedback loop of resources – The generation and exploitation of a new entry does not take place only once. In this further stage of the evolving process, the feedback of the firm performance is sent back to the starting point of the process to form a closed loop. It is meaningful in two aspects. On the one hand, it provides information to the entrepreneur about how the resources ought to be updated and improved to serve the current opportunity. On the other hand, it inspires the entrepreneur with even more potential new entry opportunities. Therefore, this stage should not be underestimated compared to the other two stages of the process.

## 2.3. Different Approach to New Entry Analysis

The approach adopted in this work to new entry analysis does not follow the natural sequence of the new entry evolving process starting from the resource analysis. Instead, it chooses the center component of the process, i.e. assessment of new entry opportunity, as the starting point. It does not start with the review of the resources in the hand of the entrepreneur and then find out which new entry can be generated. On the contrary, it asks the question: if certain kinds of opportunities are already there in the market, what specific resource bundle does the entrepreneur need to have in order to seize the opportunities? And how shall the entrepreneur run the business in terms of making market entry strategy, reducing the risks, and tackling the organization issues so that the new entry opportunities can be best exploited?

The reason for applying this approach in the analysis lies in the following facts. First of all, the boundary conditions for this work are relatively clear and stable. The new entry discussed here belongs to the third scenario of its definition. There is neither new product nor new market involved, but a new organization. The background of the analysis is the automotive market,

which is one of the most matured and established markets in the world. The situation and stakeholder information of the automotive market are well known to the outside. The analysis results out of it are likely to be accurate and reliable, which provides solid basis for the subsequent steps of the analysis. Secondly, starting the analysis from a large scale industrial market rather than from the resource bundle of a specific individual or organization makes the outcome and conclusion of the analysis of more universal significance. It is more in line with the original purpose and principle of scientific research, i.e. to find out the rules behind the phenomena and apply it in future activities of the human society, than merely a business plan alike manual only valid for one person or one company.

# 3. Business Opportunity between European and Chinese Automotive Markets

The world automotive industry is believed to be with a history of more than 130 years dating back to the invention of the first automobile by Carl Benz in 1885. Today, it has become one of the largest industrial and economic sectors worldwide in terms of revenue and headcount. It is classical and modern at the same time.

Europe, the place of birth of the automobile, and China, presently the largest country in units of vehicle production and sales, represent the two major automotive markets of the world. The business connection and exchange between the two markets are increasingly close and active. Due to a variety of tangible and intangible barriers between the two, however, high transaction costs are induced to companies from both sides, which leaves considerable room of margin for consultants and brokers to step in between to make a profit. In this chapter, the business opportunities within the framework of transaction cost reduction between the European and the Chinese automotive markets are introduced and discussed.

## 3.1. Overview of World Automotive Industry

The modern automotive industry is one of the largest branches of the manufacturing industry. It is comprised of companies and organizations involved in design, development, manufacturing, marketing, and selling of motor vehicles and their components (*Binder & Rae, 1999*). It serves worldwide as an important element of the society for employment and economy growth and contributes with total revenue equivalent to the GDP of world's sixth largest economy United Kingdom. Automotive industry has become the pillar and index of the economy of almost all industrialized countries.

Beyond its substantial economic impact, the automotive industry has enormously influenced the society in many different aspects as well, such as environment protection, urbanization, wholesale and retailing, banking, social life, energy security, technological progress, etc.

In the global scale, the automotive industry has its footprint spreading into different continents. Major automotive production and sales countries and regions include USA, China, Japan, Korea, and EU, followed by emerging economies like Russia, India, Brazil, Mexico, etc.

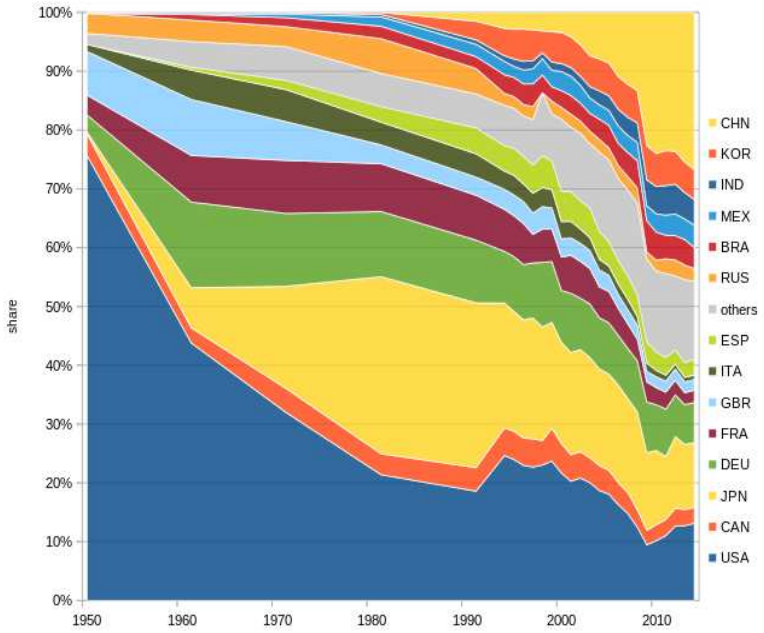



**Figure 4. List of countries by share of automobile production since 1950. Reproduced from (*Wikipedia, 2017, Automotive Industry*)**

It is shown in Figure 4 how the share of automobile production of each country evolves over time since 1950 till the current decade (*Wikipedia, 2017, Automotive Industry*). It can be seen that the European countries, especially Germany, have been keeping their portion in the market on a relatively stable level, while China started its presence late since 1980s but grabbed the market share aggressively within 30 years.

The division of automotive industry is demonstrated in Figure 5. In the core of the business are the vehicle OEMs who eventually produce and assemble the vehicles. More detailed, the vehicles can be divided into on-road vehicles and off-road vehicles according to the application occasion. They can also be divided into commercial vehicles (including bus, truck, agricultural machinery, construction machinery, etc.) and passenger cars according to the type of end users and vehicle weight. Outside of the OEMs are the suppliers with different tier levels. Tier 1 suppliers deliver the parts and service to the OEMs directly and tier 2 suppliers deliver the parts and service to the tier 1 suppliers, and so on. It is to be noted that large automotive companies are not necessarily OEMs, like Volkswagen, Toyota, etc., but could also be suppliers, like the companies Bosch and Continental.

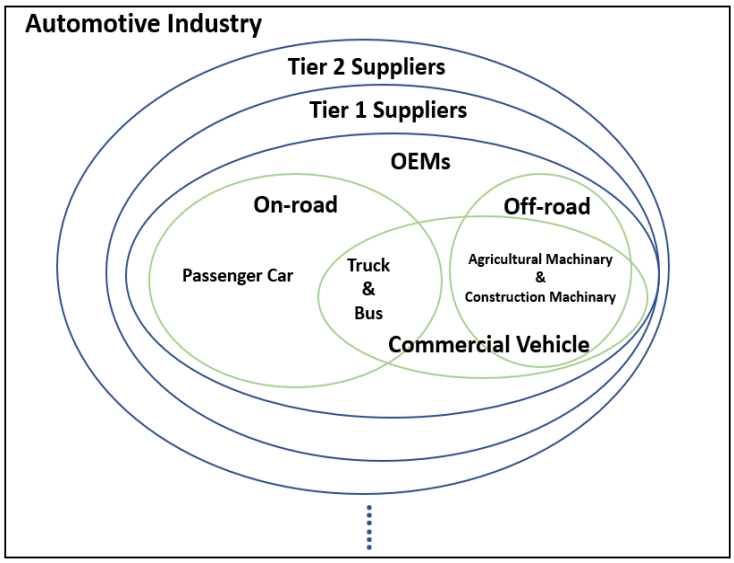



**Figure 5. Division of automotive industry.**

## 3.2. The Two Poles of the Automotive Industry

Europe and China are considered as two important automotive markets in the world in terms of market scale and industrial completeness. Nevertheless, the two markets and the companies involved show remarkably different characteristics than each other.

The first motor vehicle was born in Europe. Since then, the place of birth has kept its critical status in developing and producing automobiles. The leading countries in this respect are Germany, France, United Kingdom, Italy, Spain, Austria, among others. The two countries from the German speaking area, Germany and Austria, have shown strong performance and competitiveness in particular.

It is well known that automotive industry is the traditional economic sector in the German speaking area. Germany and Austria are the two strongholds in this area. On the one hand, the scale of automotive industries in both countries are relatively large with respect to the whole economy scale. The total revenue of automotive industry accounts for 14% of the GDP in Germany and 6% in Austria. The industry turnover of the automotive industry of Germany in 2017 amounts to €423 billion with export turnover of €272 billion (*Germany Trade & Invest, 2019, p. 3*). The same figure of Austria in 2018 amounts to €25.5 billion with an export ratio of 90% (*Austrian Business Agency, 2019*). The automotive companies in these two countries have a net profit margin of around 10%. The number of people working in this industry is more than 10% of the whole employed population in both countries. On the other hand, Germany and Austria not only possess the most advanced automotive technologies but also have the complete

knowledge system and talent reserve. The R&D expenditure of the two countries combined accounts for more than 50% of the total R&D investment of the automotive industry worldwide.

On the other side of the globe, China plays an equally important role in the automotive industry. China has become the world's largest vehicle production and sales country since 2009 (Figure 4). In the year 2018, there were more than 28 million vehicles manufactured and sold in China. The market segments are ranging from passenger cars to commercial vehicles, with a full spectrum of OEMs and suppliers.

The OEMs in China are of two types, the domestic OEMs and the joint ventures between domestic OEM and foreign OEM. Till very recent time non-Chinese vehicle manufacturers were not allowed to operate independently in China. They must find one local partner to form a 50%-50% joint venture.

Although China and German speaking countries are both strong players in the automotive industry, they have clear difference in the market positioning and operate in different sections of the industry. Due to the accumulation of technologies from the history and the advanced manufacturing capability, German and Austrian automotive companies, both OEMs and suppliers, are focused on high-end products as well as core parts with high added value, while Chinese automotive companies are more working on the low added value but labour intensive sections, such as low-end vehicles and standard mechanical and electronic parts. Vehicles usually consist of both core parts and standard parts, which creates the necessity for business exchange in massive volume between the two markets. Chinese OEMs need to source from Germany and Austria for core components and technical solutions which are not available domestically. German and Austrian OEMs, on the other hand, would like to purchase the standard parts from the Chinese suppliers to keep down the overall cost of their vehicles. This makes the first type of business relationship between the two markets, namely the purchasing-supplying relationship.

Furthermore, German and Austrian OEMs are inclined to launching production in China. This way, they are able to procure from the Chinese suppliers locally and meanwhile sell the vehicles in China directly after manufacturing, both reducing the costs significantly. However, there are restrictions for such activities because of the specific policy of the Chinese government on the domestic automotive industry. Since it is stipulated that foreign OEMs cannot run their factories in China alone, every OEM from outside of China has to find a local partner to form a joint venture if they plan to setup the production in China.

In the other direction, Chinese automotive companies are actively searching for opportunities of partnership and acquisition in Germany and Austria in order to get access to the state-of-art technologies and the engineering expertise. The commercial activities mentioned above, which are accomplished by direct investment, form the second type of business relationship between the two markets.

## 3.3. Business Opportunity for Inter-Market Consultancy

Based on the two major types of business relationships described in the previous section, transactions in the total volume of tens of billions of euro per year between the European and the Chinese automotive markets nowadays are common to see. As an example, the EU 27 states exported 351,000 units of vehicles (accounting for 43% of China's total vehicle import) and over €6.9 billion worth of auto parts to China in 2010 (*EU SME Centre, 2012, p. 5-6*). See Appendix 1 to 3 for figures and market segments in details. The commercial activities between the two markets are both frequent and intensive. However, it is not the case that these activities do not have their costs. On the contrary, the business partners from both sides often find they have to bear additional expenditures on communication, negotiation, travel, legal issues, to name a few, to close the deal. The considerable amount of transaction costs not only increases the price level that the companies quote to the market (hence decrease the competitiveness) but also encumbers the efficiency in which they are able to serve the customers.

The root cause for the transaction costs and low efficiency are several intrinsic barriers, tangible or intangible, which are standing between the two markets. The most important ones are listed as follows.

- *Geographical distance* – The two markets are located more than 7000 kilometers away from each other. Travelling from one to another takes at least 10 hours and thousands of euro travel cost. Although modern communication instruments such as email and telephone make remote contact feasible and convenient, they cannot replace the conventional face-to-face approach in business activities to the extent that efficiency and trustfulness are of vital importance. This is especially the case when the business partners come with different cultural background and speak different mother languages.

- *Time difference* – The time difference between Europe and China is six hours in the summer time and seven hours in the winter time (Central European Time is considered). This greatly limits the possibility of people from the two markets to work together,

because the overlap of the office time remains as only four to five hours. Suppose a project team consisting of members both from Europe and from China. The members in China need to wait till afternoon so that the colleagues in Europe step into the office. On the other hand, when the members in Europe would like to ask a question after lunch, they find that their teammates in China already left the work and went home.

- *Language barrier* – The official languages used in the two markets are remarkably different. The Chinese language is not categorized in the same language family with any European languages. Moreover, it is one of few languages in the world whose spelling and writing are not Latinized yet, making it difficult for non-native speakers to learn and to use. Meanwhile, the use of English is not really well prevailing in China. The majority of the population in China are still not able to communicate in English freely. Due to reasons of regulation, most of the governmental agencies and state-owned companies of China explicitly require that the commercial documents, contracts, letters be in Chinese language. The formulation and translation of these documents bring in significant amount of additional costs and efforts.

- *Cultural barrier* – It is well known that the Chinese culture is relatively far away from the European culture. They are different from each other in a variety of indicators such as tolerance for uncertainty and ambiguity, task/relationship orientation, egalitarian or hierarchical, low context or high context in communication, to name a few. If the language barrier is still tangible somehow and can be overcome by using translation and interpretation services, the barrier of culture is apparently on a much higher level of difficulties to be tackled. The real cultural "insider" for both sides needs to be get involved for achieving mutual understanding.

- *Mindset barrier* – The term mindset barrier is used here to refer to the discrepancy between Europe and China in the way of thinking as well as in value orientation. One typical example is the prioritization between quality and efficiency. In Europe, quality is in most of the cases prioritized over efficiency. For this reason, detailed development process including a number of iterations of design and validation are strictly followed by the European companies. The preference is right the opposite in China. There the efficiency is highly appreciated as the most important indicator of the delivery, for which the standard of quality is sometimes compromised. The mismatch in the basic mindset often makes the European companies to lose the market competition in China even though they provide product with better quality than the competitors'. It is worth

noting that the mindset barrier is relatively short-term compared to the cultural barrier. It is greatly dependent on the current situation of the market and the economy. The new entrants of the market are able to exert the influence on the mindset of the existing players or even to change it.

Wherever there are pain points of the market, there are chances for business. The huge amount of transaction costs between the European and the Chinese automotive markets induced by the aforementioned barriers provide the perfect entrance point for the inter-market consultancy to come into play. The consultancy services are expected to create substantial customer value by helping the clients to go over the different barriers erected between the two markets with a service price significantly lower than the transaction costs.

In the following chapters of the work, we start from the resource-based competitive advantage theory and try to find out the best possible combination of resources as a resource bundle that the consultancy service shall acquire and possess. We investigate, based on the optimal resource bundle, what kind of service portfolio to be offered and what would be the appropriate strategy and organization form to be taken.

# 4. Resources for Market Entry

In the previous chapter, we have illuminated the new entry opportunities to be pursued for exploitation, i.e. the consultancy services facilitating companies from the European and the Chinese automotive markets to reduce the transaction costs and to increase the business efficiency by crossing over the inter-markets barriers. From the entrepreneurial perspective, it is both interesting and valuable to investigate in a next step, which resources are necessary to support the generation and exploitation of the new entry opportunities and how this unique bundle of resources endures the entrepreneur with the competitive advantage in market competition.

## 4.1. Resource of Knowledge

For an entrepreneur working on new entry generation, the necessary knowledge to the technology and to the market lays the foundation to success. Such knowledge becomes especially relevant because it provides the entrepreneur with the insight into the market, the customers, and the technological innovation.

### 4.1.1. Technological Knowledge of Automotive Industry

An automobile is a complex system integrating thousands of large and small parts according to their physical and logical connection based on mechanical, electrical, electronic, and thermal principles.

In automotive industry, the customary partition of a vehicle results in three sub-systems, the powertrain system, the chassis system, and the vehicle body system. The powertrain system consists of engine, transmission, drive shaft, differential, and rear axle. It provides the propelling power to the vehicle. The chassis system includes the bottom frame, the suspension and the tires and is responsible for the shock absorption and the mechanical support of the vehicle. The vehicle body system is comprised of the upper body of the vehicle, the cabin, the

steering, and the infotainment system. It is directly interfaced with the driver and the passengers of the vehicle.

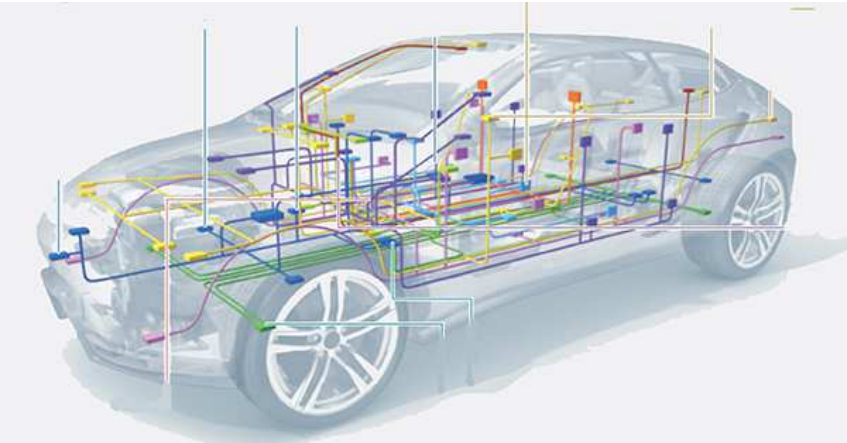


**Figure 6. Electronic control units connected via various buses in a modern vehicle. Reproduced from (*Donovan, 2014*).**

If the vehicles in the early years carry mostly the sophisticated mechanical and thermal designs, the modern vehicles show a significantly increased content of electronic devices. Today, a passenger car takes with it averagely 50 to 100 electronic control units (ECUs) such as the engine control unit, transmission control unit, headlamp control unit, body control module, to name a few (*Donovan, 2014*). The ECUs are connected via different types of communication buses (Figure 6) including the CAN bus, the LIN bus, the FlexRay, and the Ethernet. The *functional safety* of the electronic devices regulated by the norm ISO26262 has become a prevailing and relevant topic that the automotive industry need to comply with.

As the ADAS (Advanced Driver-assistance Systems) and AD (Autonomous Driving) topics become more and more popular, the software design in the car has drawn much attention of the industry. Nowadays, the number of functions realized by software in a car has surpassed the number of functions realized by hardware. As the lines of code used in vehicle development explode, the configuration management and the re-use of the software code get increasingly imperative.

Besides autonomous driving, another important future direction of the automotive industry is the electrification of the vehicle. This is due to the pressure from both energy security and environmental protection. Government of different countries imposes more and more regulations in this aspect. BEV and fuel cell vehicles are two promising solutions for vehicle electrification. Limited by today's technological state-of-art, however, hybrid electric vehicles (HEV) are currently used as a transition solution.

### 4.1.2. Market Knowledge of Automotive Industry

In the European automotive market, the major players include the OEMs like Volkswagen, Daimler, BMW, PSA, Renault, Volvo, MAN, Scania, CNH, etc. and suppliers like Bosch, Continental, ZF Friedrichshafen, Valeo, Magna, etc. These are the large companies with high reputation and visibility in the whole world.

On the other hand, there are many so-called “hidden champions” in Europe which are middle or small scale companies but take the leading position in a small market niche. Many of these companies, both OEMs and suppliers, are family-owned and have a long history behind. They are concentrated in one category of components, e.g. gears, bearings, pumps, among other, or one specific type of vehicle, e.g. special purpose vehicles, and plow deep to achieve a high quality level so that no other companies are able to compete with them in the niche market. As one example, the Austrian company Rosenbauer is among the three largest manufacturers in the world for fire and rescue vehicles and has a yearly revenue of around €800 million which is a relatively small amount compared to the large OEMs. These companies play an extremely important role in the European automotive market to the extent that they constitute the solid basis of the European automotive industry and guarantee the high technical standard of the market over a long period of time. As many of such “small-but-fine” companies are actively searching for the opportunity of business expansion into the Chinese market in order to overcome the saturation of the local market, they are considered as important potential customers of the consulting firm discussed in the present work.

In the Chinese automotive market, there are two types of passenger car OEMs, i.e. the domestic OEMs and the joint venture OEMs. The leading Chinese passenger car OEMs together with their units of sales and market share in 2019 are listed in Table 1 and illustrated in Figure 7. The first eight OEMs together hold 52% of the total market share, and the first fifteen OEMs hold 75%. The largest domestic state-owned OEM (including the joint ventures) is SAIC, while the largest domestic private OEM is Geely.

It is to be noted that although the European OEMs cannot setup production in China independently, they are still allowed to export their vehicles which are manufactured outside of China to the Chinese market. However, these vehicles are listed with high price because of the freight and the tariff. They are able to compete merely in the high-end market section (due to low price sensitivity of the end users) and the share in the whole market is rather low.

On the other hand, it happens nowadays that vehicles produced in China are imported to the European market, even though it is not common yet. One example is that Geely brings its Lynk&Co branded cars to Europe in 2020 which is jointly developed with its daughter company Volvo sharing the same R&D platform.

**Table 1: Top passenger car OEMs in China and their units of sales and market share in 2019.**

| No. | OEM | Unit of Sales | Market Share |
|---|---|---|---|
| 1 | FAW-Volkswagen | 2,071,888 | 10.0% |
| 2 | SAIC-Volkswagen | 1,968,077 | 9.5% |
| 3 | SAIC-General Motor | 1,481,724 | 7.2% |
| 4 | Geely Motor | 1,303,578 | 6.3% |
| 5 | Dongfeng-Nissan | 1,292,871 | 6.2% |
| 6 | SAIC-GM-Wuling | 987,863 | 4.8% |
| 7 | Great Wall Motor | 867,889 | 4.2% |
| 8 | Dongfeng-Honda | 788,916 | 3.8% |
| 9 | Chang'an Motor | 769,479 | 3.7% |
| 10 | GAC-Honda | 765,025 | 3.7% |
| 11 | FAW-Toyota | 724,734 | 3.5% |
| 12 | BAIC-Hyundai | 703,785 | 3.4% |
| 13 | GAC-Toyota | 665,660 | 3.2% |
| 14 | SAIC Passenger Car | 574,365 | 2.8% |
| 15 | BAIC Benz | 559,758 | 2.7% |

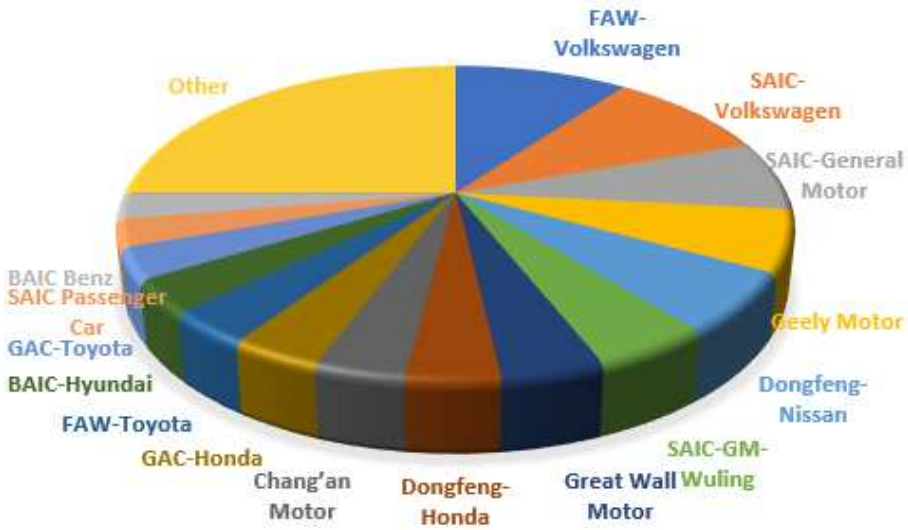



**Figure 7. Market share of Chinese passenger car OEMs.**

When it comes to the commercial vehicle sector, the situation is noticeably different. The presence of foreign OEMs in China, even in the form of joint venture, is hardly seen. On reason is that the gap of know-how reservation between Chinese OEMs and European OEMs in the commercial vehicle sector is relatively small in comparison with that in the passenger car sector. Both Chinese and European commercial vehicle OEMs are highly dependent on the R&D input from the suppliers. Another reason is that the European commercial vehicle OEMs are focused on high-end products due to better market affordability and more stringent regulations in Europe, which do not match the market demand in China at the current stage. A third reason is that the end customers of commercial vehicles are companies and organizations as opposed to individuals for passenger cars. In this case, closer connection to the customers, better after-market support, and more prompt response play a key role, which makes domestics OEMs in an advantageous position relative to their competitors from outside China.

The top ten heavy-duty truck manufacturers in China are listed in Table 2, all of which are domestic OEMs. The whole market is dominated by the four largest OEMs whose total market share accounts for 75.3%.

**Table 2: Top heavy-duty truck OEMs in China and their units of sales and market share in 2019.**

| No. | OEM | Unit of Sales (×1000) | Market Share |
|---|---|---|---|
| 1 | FAW | 276.3 | 23.7% |
| 2 | Dongfeng | 241.1 | 20.6% |
| 3 | Sinotruk | 187.0 | 16.0% |
| 4 | Shaanxi | 175.3 | 15.0% |
| 5 | Foton Motor | 86.1 | 7.4% |
| 6 | SAIC Hongyan | 58.1 | 5.0% |
| 7 | JAC | 37.8 | 3.2% |
| 8 | Dayun | 32.3 | 2.8% |
| 9 | XCMG | 20.6 | 1.8% |
| 10 | Hualing | 20.2 | 1.7% |

The tractor market shares of China are relatively equally distributed among more than 100 manufacturers. The domestic ones which take the leading positions include YTO, Lovol, DFAM, Changfa, etc. Foreign OEMs with substantial market penetration in China are John Deere from the USA and Kubota from Japan, both of which are not from Europe.

Thanks to the huge amount of infrastructure investment in China, the Chinese domestic construction machinery OEMs grow rapidly during the recent years and play an important role in the global market. In 2019, nine construction machinery OEMs from China ranked among the top 50 around the world, taking a total global market share of 16%. The names of these OEMs and their respective global shares are illustrated in Figure 8.

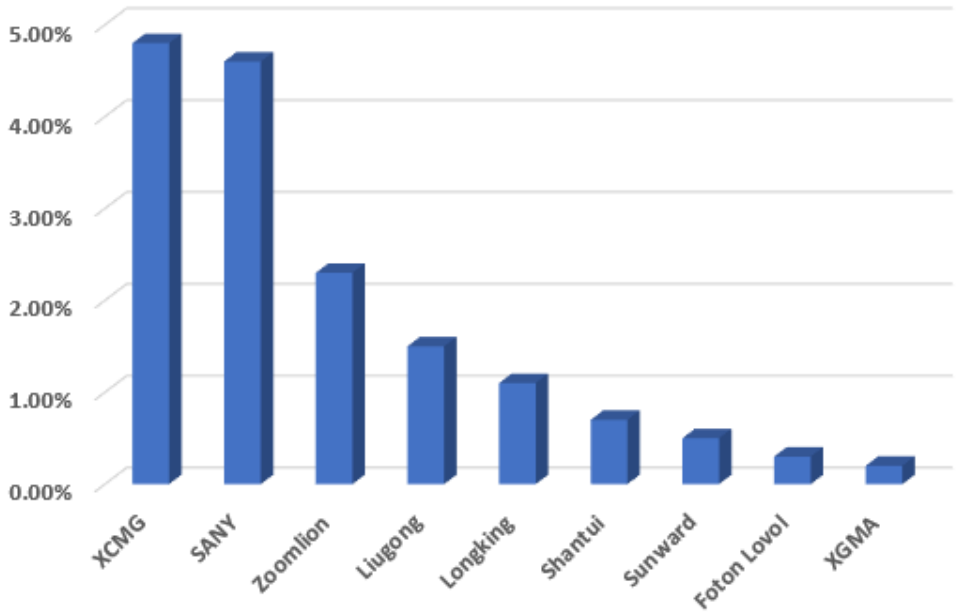



**Figure 8. Global market share of top Chinese construction machinery OEMs in 2019.**

## 4.2. Other Resources

The resources of knowledge described in the preceding section lay the necessary foundation for generating the new entry. Yet they are not sufficient to make the new entry generation happen in the absence of other complementary resources. Some other important resources needed in this process are discussed as follows.

- *Personal network* – In order to bring companies from the two markets together and help them to reduce the transaction costs, the entrepreneur firstly needs to have extensive personal network in the automotive industry both in Europe and in China. It enables the entrepreneur to find out the potential demand from both sides and to match the relevant ones with each other. More importantly, personal network means the existing trust from the prospective clients which is essential for business. The best approach of developing the personal network is long time working for business and projects between the two markets. It provides the entrepreneur with opportunities to know the potential customers with first-hand experience.

- *Language skill* – The entrepreneur needs to have language skills for both the European languages (mainly German and English) and the Chinese language (Mandarin) so that he or she is able to cross over the language barrier without using external translation or interpretation services. It would be ideal if the entrepreneur is the native speaker to one of the languages mentioned above and is able to communicate using the other languages on business fluent level.

- *Cultural adaptability* – The entrepreneur also needs to be a complete insider for both European culture and Chinese culture. He or she should not only be able to understand what the people from these cultures are thinking and feeling but also have the capability of adapting him- or herself into these cultures both in thought and in behavior. In this way, it is possible for the entrepreneur to build up the comfort and trust in communication with clients from both sides and be ready to resolve any misunderstanding or cultural conflicts at any time. Similar to the language skill, it is better that the entrepreneur has grown up in one of the cultures and lived for a long time in the other culture.

- *Geographic location* – The geographic location of the consulting firm, Europe or China, depends on at which side there are more prospective customers. Considering the purchasing power of customers, the convention of using consultancy service, the accessibility to information, Europe is the preferred location of the firm than China. The entrepreneur shall be based in Europe, more precisely in Austria or Germany, and visit China on a monthly or bi-monthly basis.

- *Starting capital* – Naturally, starting capital is the indispensable resource for generating any new entry opportunity and for founding any new business. It is an advantage of consulting firms that they normally do not require large amount of starting capital in comparison with founding other business like manufacturing, retailing, or banking. The starting capital for the present new entry opportunity can be prepared from the previous private savings of the entrepreneur. Bootstrapping shall be applied during the initial stage of the business to avoid possible financial issues like low liquidity and so on.

## 4.3. Resource Bundle

The modern entrepreneurial theory suggests that the combination of available resources into a bundle represents by itself a unique resource to the entrepreneur, provided that this resource

bundle is valuable, rare, and inimitable. Based on the analysis in the current chapter, the resource bundle in the present work can be depicted as an Austria-based consulting firm in the mission of bridging companies from the European and the Chinese automotive markets together and helping them to reduce the transaction costs. The owner of the firm is originally from China and permanently resides in Austria. He or she used to work in the automotive industry for many years and has solid knowledge about the technologies and the markets. Extensive personal network with the major OEMs and suppliers both in Europe and in China is the strength of the owner. He or she speaks English, German, and Chinese fluently and can adapt him- or herself into the European culture and the Chinese culture easily, being able to switch among different languages and cultures with high flexibility.

Such a resource bundle is *valuable* to the extent that the entrepreneur not only knows (from his or her network and experience) where the market demand for transaction cost reduction might arise, but also knows how to react and communicate so that the market demand will be catered to.

The resource bundle is *rare* because competitors with similar profile as described above are not commonly seen in today's market. The point will be further illuminated in the competitor analysis in the following chapter.

This specific resource bundle is *inimitable* in that several elements of it can only be attained through long time accumulation. This is especially the case for the language skill and the cultural adaptability which are impossible to gain in short-term.

# 5. Market Entry Strategy

In the previous chapters, we reviewed the attractive new entry opportunity to be generated between the European and the Chinese automotive markets, namely the inter-market consultancy, and discussed subsequently the unique resource bundle which is necessary and advantageous in generating the new entry opportunity. In the current chapter, we will make the first step of new entry exploitation and investigate on the suitable strategy for market entry.

The market entry strategy is closely related to the resource bundle that is available to the entrepreneur. It directly influences the speed, depth and smoothness of the market penetration of the business and determines which competitors and how strong competition the company has to face in its initial phase.

We start with enumerating a variety of consulting services in a service portfolio and then discuss which services to be taken as entry point to the market based on the theory of market scope strategy. In the end, we perform the competitor analysis to see which direct and indirect competitors exist in the market and what are their advantages and disadvantages in comparison with the resource bundle that we have.

## 5.1. Service Portfolio

With the market demand and the resource bundle combined together, the service portfolio of the present new entry opportunity consists of three main categories of services: information service, marketing service, and engineering service.

*Information service* refers to a variety of services which empower the clients to get access to more actual, holistic, informative and transparent information. The demand for information service is due to the non-transparency, latency and asymmetricity of information between the two markets. Eliminating these obstacles will help the clients to make more accurate judgement, take more correct decision and achieve more favorable deal.

Following concrete items are listed in the category of information service:

- Market trend and strategy consultancy
- Product portfolio consultancy
- Market newsletter subscription
- Supplier searching and screening
- Homologation consultancy and service
- M&A consultancy
- Written and oral interpretation
- Culture training
- Business visit organizing and coordinating
- Travel booking assistance

With *marketing service* the consulting firm will represent the clients to promote their products and services in front of their potential customers in occasion of exhibition, conference, or on the customer's premises. It stems from the concept of manufacturers' representative in which independent sales professionals or sales agents collectively represent manufacturers of similar products to sell the products to the customers. The manufacturers benefit from the service of the representative because the overhead of the sales work is shared with other manufacturers together. By using the marketing service of the consulting film, the clients enhance their presence and exposure in the other market with lower marketing budget than they run the promotion by themselves.

The third category in the service portfolio of the consulting firm is the *engineering service*, in which the consulting firm hire technical specialists and engineers from the job market and support the clients in the R&D and innovation activities. The deliverables to the clients are not the manufactured products but the technical solutions and design proposals. It is also called technical consultation.

Among the three categories of services, the engineering service is the one with the highest costs and risks. Correspondingly, the revenue and margin of engineering service projects are also on the highest level. It requires that the entrepreneur have considerably profound understanding of the market and the technologies. Meanwhile, the entrepreneur shall have rich experience and skills in human resource management and organization and is able to take high risks and pressure.

## 5.2. Market Scope Strategy

Entrepreneurs who are going to enter the market with new entry opportunities need to make the choice between the two typical market scope strategies: the broad-scope strategy and the narrow-scope strategy. With broad-scope strategy the firm offers products and services to a broad range of customer groups and market sectors at the same time. It helps hedge the risks induced by market uncertainties by "putting the eggs in more than one baskets". The negative side of this strategy is that it lets the firm be exposed to many different competitors simultaneously, especially to those big ones who aggressively defend their market share in the sectors where they are dominating. On the other hand, the narrow-scope strategy gives the entrepreneur the chance to operate in a market niche and to avoid untimely direct competition with the strong competitors. However, if the market uncertainty is high, the entrepreneur cannot be sure that the chosen market sector will be profitable and will be able to survive possible economic fluctuation.

When it comes to the context of the present work, it is well known that the automotive industry is an established industrial branch with remarkably large scale and relatively less market uncertainties. Meanwhile, there are plenty of "big fish" (including large consulting firms) in the market which are not easy to directly compete with. It indicates that the narrow-scope strategy would be the appropriate choice for the entrepreneur. Moreover, taking the narrow-scope strategy also allows the entrepreneur to launch the business with limited financial and personnel resources, keeping the firm less dependent on outside capitals during its initial phase.

The following criteria need to be taken into consideration in the selection of the market niche that the entrepreneur will enter. Firstly, it has to be an area with which the entrepreneur has deep knowledge and comprehensive understanding, so that clear competitive advantage over the competitors can be built up within this specific area. Secondly, the demand in this market niche needs to be strong and stable. Constant positive cash flow can be expected. Thirdly, the costs for serving the market niche need to be low. In case things will not work as anticipated, it will not get the firm into irreversibly difficult financial situation.

Based on the preceding criteria, the firm shall start with the information service due to its low costs and focus on the market trend and strategy consultancy, culture training, written and oral interpretation. These services provides the opportunities for the entrepreneur to build up the first contact with the clients and then get to know more details about the customer needs. More importantly, it brings in the relatively stable cash inflow, upon which other services can be

operated. After the firm has accumulated certain amount of working capitals, it can step further into the marketing service and the engineering service which are more cost-intensive activities. It is worth noting that the firm is likely to come across strong competition in offering the engineering service because it is a highly lucrative business which attracts a large number of technical consulting firms. In this case, the firm has to pick up one market niche or two to implement the narrow-scope strategy. For example, the functional safety engineering is a topic currently with high demand from the Chinese market. Such project requires merely a small engineering team and basic equipment like laptops to carry out. In contrast, the communication with customer takes a large part of the work content of the project. It can be a perfect market niche in which the firm based on its resource bundle shows strong competitive advantage over the competitors.

## 5.3. Competitor Analysis

In today's market, competitors with profile which is the same or similar to the resource bundle described in the present work are not commonly seen. Nevertheless, several different types of competitors from various branches deserve close attention. The comparison of strength and weakness with the competitors is beneficial to the entrepreneur in strategy making.

- *Automotive consulting firms in Europe* – This type of competitors are advantageous in their organizational maturity and deep roots into the European automotive industry. They usually have long-term business relationship with the European OEMs and suppliers and tend to get the trust from these customers because of the common language and culture. But their connection with the clients from China is relatively weak due to the geographical and cultural barriers. Their information about the Chinese market is not the most up-to-date as they usually don't have access to the data published in Chinese language. The expensive service price is another weak point of these competitors. It is the main limiting factor for them to work with clients from China because of the high price sensitivity of the clients.

- *Automotive consulting firms in China* – This type of competitors have the opposite strength and weakness to their European counterpart. They have the highest availability and accessibility to the clients in China and are able to work with these clients closely together. But they lack the direct contact and cultural intimacy to the clients in the European market. The efficiency and cost for the European clients to cooperate with

these competitors are not much better than that when they deal with the Chinese OEMs and suppliers directly.

- *Lawyers and legal service firms* – There are lawyers and legal service firms who are specialized in law and regulation and could help the clients in the legal procedures with high effectiveness. But their weakness is also clear. They are short of the necessary knowledge about the automotive industry and the personal network within it. In the meantime, they are taking business orders also from other clients who are not related to automotive industry. Automotive industry is only one part of their business and usually not the main focus.

- *Austrian Chinese professionals* – The competitors covered by this category refer to those ethnical Chinese who speak the Chinese language and reside in Austria. They are engaged in occupations like lawyer, insurance broker, real estate broker, travel agent, and so on, and have the motivation and possibility to help companies from both markets to find their business partners from the other side. These competitors share the same strength with the aforementioned resource bundle in the sense that they also speak both languages and know both cultures well. Their weakness is the less knowledge about the automotive industry and the personal network.

- *Own employees of the clients* – There is one important category of competitors which deserves full attention to, i.e. the own employees of the automotive companies. As we know, almost all the automotive companies have their own sales and purchasing department. For those large international corporations, they also have sales force, business development team, and liaison managers located in different countries. Although these employees of the automotive companies are not organized as an independent legal entity, their work and the new entry opportunity discussed in the present work are highly mutually replaceable. They can be in a *de facto* competing position because these internal employees are advantageous in internal efficiency and confidentiality. But the main difficulties for them are still the geographical and cultural barriers. Cost can be another drawback depending on the concrete case and context.

- *Governmental Investment Agencies* – Governmental investment agencies like ABA in Austria are also actively participating in the business development between the European market and the Chinese market. In most of the cases their service are free of charge, which is counted as a significant advantage in competition with commercial

consulting firms like the new entry opportunity here. Moreover, the governmental background provides them with access to broader public resources which the clients prefer to have. But the geographical and cultural distance of these organizations to the Chinese market is quite obvious. However, since they are not profit driven, the governmental investment agencies are open to communication and cooperation with commercial firms and thus could become important cooperating partners with the entrepreneur.

In principle, all the aforementioned competitors can be in competition with the consulting firm of the present work in the information service and in the marketing service. For the engineering service, however, the automotive consulting firms in Europe are considered as the main competitors. Although the competitive advantage of a firm is fundamentally determined by its own resource bundle, the entrepreneur shall need to consider utilizing and borrowing resources expediently to build up short-term competitiveness which enables the firm to compete in the market. In some cases, this could even be achieved by outsourcing or cooperation with the competitors.

# 6. Marketing, Organization and Operation

Till now we have made the first step of the new entry exploitation by mapping out the market entry strategy with competitor analysis. While a well-defined market entry strategy functions as an intelligent brain of the firm, steering the correct direction to go, yet it is necessary to investigate how to build up the bones and muscles of the firm to support the exploitation of the new entry in the preferred direction. The bones and muscles of the firm are the marketing, the organization and the operation.

## 6.1. Marketing

Marketing plays an extraordinarily important role in business. This is especially true for new entry opportunities which are not well-known to the customers yet. Under the topic of marketing, three fundamental questions need to be solved by the entrepreneur:

1) What is the current position of the firm in the market?
2) Where is the firm going to?
3) How does the firm get there?

The first question can be answered by doing a SWOT analysis (*Hill & Westbrook, 1997, p. 47*) which is a useful tool for determining where the firm is located in the market landscape. The second question is about the goals and objectives of the firm. Establishing the promising but realistic goals and objectives helps the entrepreneur to set up the reference for strategy making and budget planning. The third question is more tactical than strategical. It addresses the concrete and detailed measures that the entrepreneur needs to take to achieve the goals and objectives, starting from the position that the firm is standing in. To answer this question, the entrepreneur needs to formulate the specific and applicable plan for market focus, promotion, distribution and pricing.

### 6.1.1. SWOT Analysis

The acronym SWOT stands for “Strengths, Weaknesses, Opportunities, and Threats”. It is a technique commonly employed in business assessment to give an overview of internal and external factors which are favorable or unfavorable to the business. A SWOT analysis of the present new entry opportunities is illustrated in Figure 9. It shows the current position of the new entry in the market and provides the starting point for making the marketing strategy. The strengths and weaknesses are covered in the previous chapters, while other critical points included in the other two quadrants will be addressed later in this work.

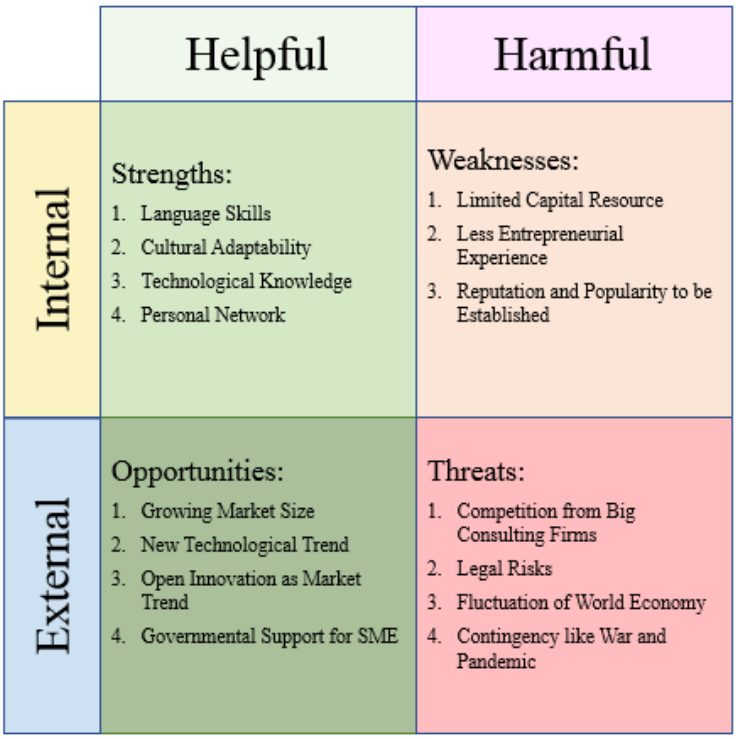



**Figure 9. SWOT analysis of the new entry opportunity.**

### 6.1.2. Goals and Objectives

The goals and objectives of a firm are closely related to its competitive advantage which is determined by the resource bundle that the firm possesses. As the resource bundle can be developed over time, it is practical that different goals and objectives are set in different phases of the business.

In the present work, the entrepreneur is recommended to set the goals and objectives in two phases which are corresponding to two cycles shown in Figure 3. In the first phase, the firm is newly founded. Due to its nature as consulting firm, it is difficult to attract equity or debt financing from outside. More realistic is to start the business with the private savings of the

entrepreneur and to apply the bootstrapping policy in operation. The goals and objectives of this phase shall be to bring in stable positive cash flow for internal capital accumulation, to gather first entrepreneurial experience, and to erect the reputation and popularity among the clients. The information service in the service portfolio is perfectly suitable for such goals and objectives.

In the second phase when the firm is capable of competing in the market with more capital resource and higher reputation, the goals and the objectives shall be amended as to exploit the new entry for better profitability. To this end, the marketing service and engineering service shall be implemented because of the high margin of them.

### 6.1.3. Marketing Strategy

Taking into account the current position of the consulting firm in the market and the goals and objectives which are to be pursued, the concrete market strategy is as follows.

- *Market Focus* – The market focus shall be based on the goals and objectives of the firm in its two phases. In the first phase, due to the limited financial resources and the experience under development, the entrepreneur shall closely focus on the information service in both European and Chinese automotive markets, in order to make the firm well-known among the clients and to get their trust.

  In the second phase, the market focus shall be moved to the more profitable marketing service and engineering service. The first type of business relationship between the two markets, the purchasing-supplying relationship, shall be prioritized. To be more concrete, the marketing service of the firm at this phase will be focused on helping Austrian automotive companies to promote their products and services in the Chinese market. This is due to the relatively low operation cost thanks to the shorter geographical distance to the Austrian companies, the high purchasing power of the Austrian companies, and the previous working experience of the entrepreneur. In contrast, the engineering service shall be focused on the automotive companies from China because these clients have the strong demand for R&D and innovation support from outside and they have the tradition and budget for engineering service procurement.

- *Promotion* – The promotion of the business shall be started via the entrepreneur's personal network already before the firm is founded. The entrepreneur shall be aiming at obtaining the first paying clients among the automotive companies which he or she

has connection with during the previous work experience. The established trust from these potential customers will keep the cost of the firm on a low level and enable the firm to achieve positive cash flow as soon as possible.

In order to build up further contact with other potential customers, the entrepreneur shall visit them collectively by attending automotive exhibitions and conferences. This is in accordance with the bootstrapping strategy of the firm during its start-up phase: to promote the business efficiently with the lowest cost.

Even so, the entrepreneur will still need to pick out several key accounts to make personal visit and on-site promotion. The long-term good relationship with premium customers will be the key for the firm to maintain its financial health and core competence.

- *Distribution* – As the new entry opportunities in this work represent the typical business-to-business (B2B) form, the most efficient way of distribution is to approach the customers directly. In the first phase of the business, the sales representative of the firm will be most of the time the entrepreneur him- or herself. Phone call, email, teleconference shall be exploited to keep down the cost. Onsite promotion and customer support shall also be planned. However, the costs of such activities shall be closely monitored.

  In its second phase, the firm shall expand its distribution network by using professional automotive salespersons to contact more clients at the same time. However, the way of employment shall be kept flexible. Full-time employment of sales force shall be avoided if it is not absolutely necessary. Ideally, the work of the salespersons shall be paid in the form of commission on closed deals.

- *Pricing* – Because of its unique competence profile well differentiated from the competitors and the considerable customer value that it creates for the clients, the firm shall not compete for market share by offering lower price. All kinds of price war shall be avoided. On the contrary, it shall set the price on the standard price level of the automotive consultancy market or appropriately higher to achieve a better margin. Good profitability and healthy financial situation are likely to assist the business development and venture expansion. For each client, the purchasing power and willingness, the urgency of the demand, and the tradition of working with consultancy shall be individually assessed in order to implement the differential pricing policy.

## 6.2. Organization

The three different scenarios per definition of new entry have been introduced in Chapter 2. The new entry opportunities discussed in the present work are associated with neither new products nor new markets. Instead, they are based on the creation of a new organization which aims to integrate the resources in a possibly broad sense to cater to the market demand in a way which is different and advantageous to the competitors. In this sense, the investigation on the organization method of the firm is of specifically great importance.

The way how the firm is organized evolves as the firm is going through its various phases. In the first phase, the capital resource is one of the most important limiting factors to the business. The entrepreneur shall consider keeping the headcount of the firm on the lowest possible level. Even the one-person show is not uncommon in the consulting industry. Before recruiting more employees to support, the entrepreneur shall concentrate on the generation of positive cash flow and the accumulation of initial experience with the business.

In the second phase, when marketing service and engineering service are offered to the market, it is obvious that the entrepreneur alone cannot handle the daily operation of the firm anymore. Extra human resources are needed to support the expansion of the business. However, there is an intrinsic dilemma for the consulting industry. On the one hand, as the revenue of a consulting firm is in strictly positive correlation with the total effective man-hours of its employees (the consultants), the upscaling of the consulting business is depending on almost the same proportional increase in the headcount of the firm. On the other hand, the cost of human resource is normally much more expensive than the cost of other resources. Keeping a large number of employees in the firm could be of high financial risk when the external environment including the market trend and demand, the economic and political environment, etc. is under violent fluctuation. The requirement of both increasing and decreasing the number of employees of the firm at the same time represents the basic contradiction of the consulting industry. Due to this reason, the consulting firms have never been the focus of interest of capital investors.

In spite of the classical dilemma mentioned above, the novel organizational forms of innovation activities emerging in the recent decade may show the possibility for the entrepreneur to overcome the intrinsic contradiction in the consulting industry and to enhance the business model to a higher level which is never seen before. The key to the solution of the problem is the open innovation (Figure 10).

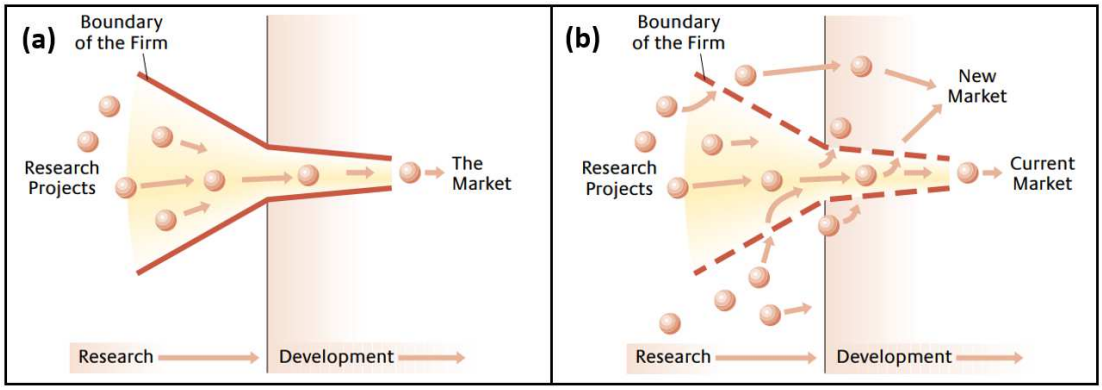



**Figure 10. Comparison of (a) the closed innovation model and (b) the open innovation model. Reproduced from (*Chesbrough, 2003, p. 36-37*).**

Open innovation (*Chesbrough, 2003, p. 37*) refers to the paradigm in corporate R&D activities that companies and organizations either seek ideas and solutions from outside or commercialize their own in-house ideas to the market via the ways out of their main business. Basically, the technical consultancy service (engineering service in the current work) by itself is one example of open innovation. However, the focus of the discussion here is the possibility of extending the open innovation partnership from the pairs of consulting firms with their clients to the pairs of the consulting firms with the ultimate technical solution providers, namely the engineers or specialists, as illustrated in Figure 11.

Conventionally, the specialists administratively belong to the consulting firms as employees. During the whole period of employment, one specialist contributes his or her working hours exclusively to one consulting firm and is blocked from working for other consulting firms. When the employer cannot acquire enough projects from the clients to fill up the working schedule of the specialist, there will be a problem of under-utilization of the resource capacity of the firm, which is of no advantage for all the parties. On the one hand, the talent of the specialist is wasted during his or her idle time, while other consulting firms, which have more projects but lack human resources, still have unfulfilled demand from the market. On the other hand, the consulting firm which employs the specialist has to pay for the idle time, even though no commercial value is created out of it to the firm. The current solution to this problem is to use hire-and-fire of the specialist as way of adjustment of the human resource. However, such solution is both of significant cost and with unfavorable time latency.

Open innovation provides the possibility of solving the problem from another perspective. It dissolves the long-term and fulltime employment relationship between the consulting firms and the specialists and lets them work with each other within the framework of each single project. One specialist is able to work for various consulting firms in different projects at the same time.

The relationship between consulting firms and specialists is no longer employer and employee, but project organizer and participant. From the clients' perspective, what they get from the consulting firms in the technical consulting projects is not "engineer-leasing" anymore but "engineer-freelancing". The consulting firms are still responsible for the time and quality of the deliverables of the projects. But they are relieved from the duty as employer and can concentrate on the business development and project execution.

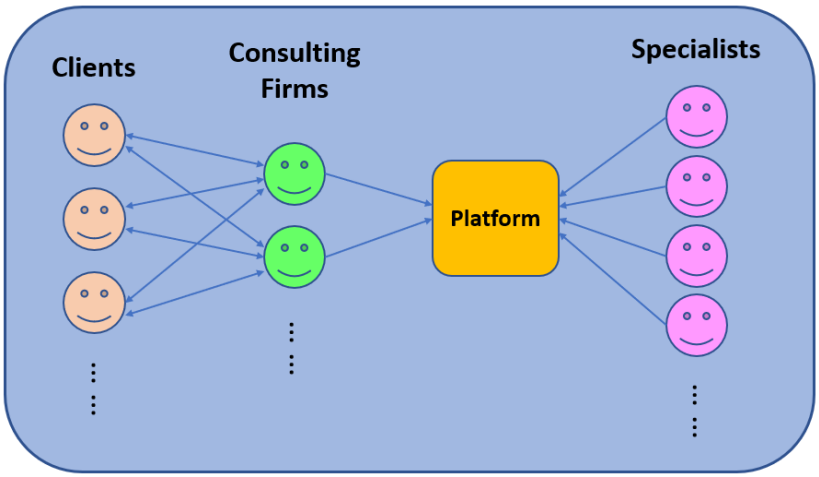



**Figure 11. Organizational scheme of platform-based open innovation.**

The freelancing of the specialists may realize a win-win-win situation for the consulting firms, for the specialists, and for the society. The consulting firms get rid of the financial burdens of human resources and are more flexible and affordable in exploiting new entry opportunities in the market. The specialists have more freedom in choosing the technical subjects that they are most interested in and best at. They get more flexibility in controlling their own working hours so as to achieve a better life-work balance. Most importantly, the society benefits from the enhanced granularity of the human resources so that the total idle time of the talents as a whole can be minimized.

Nevertheless, the new organizational scheme between the consulting firms and the specialists brings about its own problems, such as the stability of quality, the confidentiality and intellectual property issues, the income of the specialists during down period of the market, the costs arising from the team-organizing and -dissolving in each project, and so on. To solve these problems, a platform (*Parker et al., 2016*) needs to be established between the consulting firms and the specialists as shown in Figure 11.

The platform is functioning as a hub for all the consulting firms and specialists where supply and demand information can be exchanged. As the registered users of this online community,

the consulting firms and the specialists are being rated and reviewed so that any positive and negative happenings in the past will be recorded as reference for the formation of future partnership. The consulting firms need to pay a fee to the platform which is proportional to the project turnover generated via the platform. The collection of the fee will be used to cover the minimum income insurance for the specialists during the down period of the economy.

It is to be noted that the platform can be owned and operated by entrepreneur who is independent on any of the consulting firms. But it can also be owned and operated by one of the consulting firms. In this case, the owner invites other consulting firms (its competitors) to join and use the platform together. The seemingly counter-intuitive operation model is actually not uncommon in the era of digitalization and open innovation. Famous examples include the company GE which opened up its Predix platform to non-GE customers and the company Goldman Sachs which shared its online structured-notes platform SIMON (Structured Investment Marketplace and Online Network) with competitors (*Gupta, 2018, p. 68*). It is due to the fact that the platform in its nature is an online "market" where buyers and sellers come together to make the deals. The increase of the number of dealers on any side (buyers or sellers) will make the platform more valuable and more attractive to the other side. As a result, the activeness and the trading volume of the platform will be enhanced. Similar open innovation ecosystems (OIE, *Fasnacht, 2018, p. 131*) have been widely observed within different industries such as software industry (*Wood & West, 2008*), food industry (*Traitler et al., 2015; Chesbrough et al., 2014*), telecom industry (*Rohrbeck et al., 2009, p. 420*), smart cities (*Ratten, 2017*), etc.

One commonly adopted approach to the operation of such platforms is to charge one side of the platform and to exempt the other side from the payment. The choice of the unbalanced paying scheme depends on the comparison of the two sides in the willingness to join the platform and in the attractiveness to the other side. In the present case, it is recommended that the platform owner charge the consulting firms while allow the specialists to use the platform free of charge, because the consulting firms are keen on reducing the fixed cost, meaning substantial amount of customer value brought to them by the platform. The specialists are offered to join the platform for free. They obtain not only the chance for extra income, the flexibility in project topic, but also the insurance for minimum income. Thus, it can be anticipated that the platform will be embraced by the specialists, whose presence will further enhance the interest of the consulting firms in the platform. Moreover, if the platform is operated by independent third-party entrepreneur, a free-of-charge policy on both sides can be applied at the beginning, in order to gather a significantly large number of users in a short time, which is essential for the

fundraising in the capital market for the further development of the venture. If the platform is operated by a consulting firm, the focus shall be on encouraging the specialists to join. The fee can be charged to other consulting firms which use the platform.

## 6.3. Operation

Although operation is a highly individualized topic depending on the concrete context of each firm, we provide in this section a number of general principles and suggestions for the whole business and for each category of the service portfolio based on the resource bundle under investigation and on the new entry opportunities in exploitation in the present work.

### 6.3.1. The Bootstrapping Strategy

As a consulting firm founded on the private savings of the entrepreneur without external financing support, the firm shall follow the bootstrapping strategy as its guideline during the first three to five years. One important advantage of a consulting firm is that it is exempt from costs of sales and has no inventory which often causes liquidity problem to non-consulting firms. At the beginning, the entrepreneur may use private living place as company office and private laptop as office equipment.

It is recommended that the entrepreneur will live on his or her savings and will not take salary from the firm during the first two years. During the first five years, all the earnings shall be retained in the firm. No payments of dividends or owner pay-outs shall take place. The firm shall avoid taking any kinds of short- or long-term debts. All sources of cash shall come from equity capital.

Customers who are willing to pay in advance shall be given discounts. The accounts receivable shall be kept as low as possible.

### 6.3.2. Information Service

Information service is the first category of service in the service portfolio which the firm will bring into operation from the beginning of the first year. Detailed types of information service are as listed in Chapter 5.1.

A database of automotive companies in the European market and in the Chinese market shall be set up and updated on a regular basis. After screening, all the suppliers with appropriate

qualification will be marked to form a supplier pool. The suppliers will not be charged for being sorted into the supplier pool. Instead, the clients who have successfully found qualified suppliers using the service of the firm will be charged for a flat rate or a ratio of the transaction amount.

A second database shall be built up to store the market information and industry statistics, as well as laws and regulations relevant to automotive industry. A monthly or quarterly market newsletter will be issued. It is comprised of the free part and the non-free part. Paying subscribers get access to the non-free part of the newsletter.

The firm shall stay in long-term cooperation with travel agencies, translation companies, legal firms, in order to work with these partners together in different types of information related business.

Culture training is another very important type of information service. For cost reason, it mainly refers to the training of Chinese culture with Austrian and German clients. More important than the revenue out of the training itself, it offers the opportunity for the entrepreneur to get face to face contact with the clients, to get to know their further needs, and to obtain their trust. Therefore, it is a valuable approach for marketing and promotion.

### 6.3.3. Marketing Service

The firm could offer two types of marketing service to its clients. One is to represent the clients in front of their potential customers for direct sales and promotion, i.e. the manufacturers' representative approach. The entrepreneur will go for regular sales tours in the two markets and combine the commission of several different clients in one tour to reduce the operation cost. The other type of market service is exhibition assistance and representative. The firm will assist the clients to participate in the exhibitions or conferences which are held in the other market and to overcome the communication and culture barriers with local customers.

### 6.3.4. Engineering Service

Engineering service is recommended to be brought into operation from the third year of the venture. With engineering service, the firm will offer to the clients the technical design proposals and the engineering solutions for their present and future products and support the clients in their R&D activities.

As mentioned before, for automotive industry the knowledge and talent reserve in Austria and Germany is more advanced than in China. Thus, the engineering service will be focused on hiring engineers from German-speaking countries to work on development projects for Chinese clients.

For cost reason, the firm shall not employ engineering staff with fulltime positions. Instead, it will hire engineers based on temporary employment contract according to the project needs. The engineers come from different channels such as private network, LinkedIn talent reservoir, and recommendation of head hunters. A good alternative would be the open innovation platform described in Chapter 6.2.

At the beginning, two topics are recommended to be the focus of the engineering service, i.e. the vehicle functional safety design and the ECU (Electronic Control Unit) system engineering. These two topics are chosen due to the high market demand in China and the previous experience of the entrepreneur. It is in line with the narrow-scope market entry strategy. As the business of the firm develops further, projects on other technical topics will be considered and undertaken.

# 7. Risk Reduction Strategy

One essential topic in new entry exploitation is the risk reduction strategy. The term risk here refers to the possibility and uncertainty that certain elements in the exploitation process is malfunctioning or goes wrong so that negative consequences and impairments on the normal operation of the business will be incurred. In the worst cases, it will endanger the subsistence of the firm and lead to bankruptcy.

Risks cannot be eliminated completely. However, they could be reduced and suppressed down to a reasonably low level by taking certain well-designed measures and strategies. Risk management is an indispensable part of business administration. Every successful entrepreneur shall have the ability to handle and live with risks.

In this chapter, we list the possible risks that the new entry opportunities discussed in the present work contain and investigate the appropriate strategies for the reduction of the risks. Risks can arise from different aspects of the firm as well as the environment that it is situated in. The main risks that can be foreseen for the current new entry opportunities include the financial risk on the initial stage of the firm, the economic risk from the market, the operational risk due to the form of workforce employment in particular, and the legal risk because of intellectual property issues.

## 7.1. Financial Risk

We assume in this work that the new entry opportunities are exploited within the framework of a start-up company. Latest statistics show that the failure rate of start-up companies are astonishingly high, with only around 56% of them surviving till the fifth year after being founded (*Mansfield, 2019*). Among the main causes of start-up failures, financial problem, or "ran out of cash", is ranking at the second place and accounts for 29% of the failed companies. Although the present work is based on a consulting firm without new technologies where the financial risk is relatively milder in comparison with the classical tech-startups, it is still worth

paying sufficiently much attention to the financial issues because it is a fundamentally important topic for each start-up company. How to manage the financial risk and to maintain a stable and healthy cash flow during the initial phase of the company stands on the top position of the entrepreneur's task list.

Financing of a company depends on both the internal and the external funds. The careful planning and operating on both funds help the entrepreneur to achieve effective reduction of the financial risk.

Internal funds include the profits of the company, the account receivable, the extended payment to suppliers, the working capital reduction, the sales of assets, etc., (*Hisrich et al., 2020, p. 298*), which are all pointing to the most scarce and valuable resource for a start-up company, the cash. During the starting years of the firm, the entrepreneur shall retain most or even all of the profits within the venture as re-investment. He or she shall rent the assets whenever possible rather than own them in order to keep the high liquidity of the venture. In the present case, the entrepreneur is recommended to take a bootstrapping strategy to keep the outward cash flow as low as possible. Since there is only one person in the consulting firm at the beginning, the entrepreneur shall try to use his or her living place as office and use private laptop for work. Extending the payment terms with suppliers is another effectual way of generating internal funds. The entrepreneur shall try to negotiate with the suppliers for latest possible payment deadlines and get the bills paid right before the due dates, unless discounts are offered for earlier payment. On the other hand, the entrepreneur shall encourage the clients to pay earlier as long as they are not getting irritated.

Similar to internal funds, the external funds of corporate financing consist of various sources as well. The commonly-seen external funding sources range from self-financing, family and friend, to government grants, bank loans, from crowdfunding, private angel investors, to venture capital, public equity offerings. But as mentioned before, a consulting firm at its start-up phase is not likely to attract either debt-financing from bank or external equity investment. The only feasible external funding sources are self-financing and family and friend. The entrepreneur shall consider using his or her private savings to start the business. Since the capital requirement for starting up a consulting firm is relatively low in comparison with other types of business like retailing, manufacturing, etc., personal savings should be enough to cover the initial costs of the firm. A venture with investment from the own money of the owner looks more attractive and reliable to the external creditors and investors in a later phase of the company (e.g. the second phase with marketing service and engineering service). Moreover,

the entrepreneur could moonlight by working for other companies as employee and for the own firm at the same time. It secures the living costs of the entrepreneur so that he or she would not be distracted by feeling of insecurity. All the approaches above could help reduce the financial risk at the initial phase of the firm significantly.

## 7.2. Economic Risk

Here the economic risk mainly refers to the possibility and uncertainty of the deterioration of the automotive industry as a result of the periodical fluctuation of the world economy and market. The automotive industry in Europe and in China is following the overall economic cycle of the world. Abrupt revenue drop or cash flow issue might happen when the economic climate is down. For example, from the beginning of 2020, the crisis of the lethal virus SARS-CoV-2 broke out in China and then rapidly developed into a pandemic in the global scale with most of the countries affected. Its negative impact on the automotive industry is unprecedently enormous. Only in a few weeks, the global supply chain got into the paralyzed condition due to the lockdown of the society. The OEMs are not able to keep the production running because of the interrupt of component delivery. A huge amount of orders and commissions have to be cancelled on short notice. Apart from the pandemic, the financial crises which happened almost every ten years in the recent decades have also shown greatly destructive impact on the automotive industry and the markets.

Finding out the appropriate approaches to mitigating the economic risk in an unstable world market environment and making preparation accordingly should be on the top of the entrepreneur's daily task list. First of all, the entrepreneur shall try to enhance the financial liquidity of the firm wherever it is possible. For example, he or she shall try to avoid long- and short-term debts and give discount to clients who are willing to pay the bills earlier. With cash in the pocket, the firm is able to go into hibernation mode without panic during the crises and wait for the next growing phase of the economy to come. Secondly, the firm shall try to avoid projects which require heavy early investment. Otherwise, in case the crisis breaks out during the project is ongoing, the entrepreneur would need to face unaffordable losses which could jeopardize the existence of the firm. Thirdly, although the firm will take a narrow-scope market entry strategy by limiting the service portfolio within a small range, the entrepreneur shall keep the flexibility to change the direction and focus of the firm in a nimble and agile manner. Sometimes the perspective of one market sector turns gloomy while opportunities in other market sectors start to emerge.

## 7.3. Operational Risk

In addition to the financial risk and the economic risk, the entrepreneur also needs to deal with risks originated from the operation of the business. The operational risk is partly due to the lack of experience of the entrepreneur. On the other hand, it also stems from the intrinsic contradictions and trade-offs in company operation. For example, the firm shall hire fewer full-time employees and more part-time employees in order to keep the fixed cost low. Nevertheless, greater percentage of part-time employees implies to the firm a higher human resource turnover rate and more difficulties in construction of a successful corporate culture, since part-time employees usually have less personal stake in the firm and show less commitment to their role and to the business (*Hisrich et al., 2020, p. 377*). An effective solution to this trade-off is to build up and utilize the open innovation platform described in Chapter 6.2 which connects the consulting firms and the free-lancing specialists with each other. Because of the competition introduced by the platform among the specialists as well as the minimum income guarantee which it brings to the specialists, the specialists will be more committed to the firms that they are working for, although they are not administratively belonging to any of these firms on a full-time basis. In the meantime, the entrepreneur shall maintain long-term good relationship with the specialists and communicate with them about the culture and the goals of the firm.

Moreover, the entrepreneur is likely to run into another type of operational risk that due to lack of experience, he or she might over-promise to the clients during the quotation phase about the quality and maturity of the deliverables and meanwhile underestimate the costs and efforts that are required to achieve such deliverables. It turns out later on in the project operation that either the customer requirement defined in the technical agreement cannot be fulfilled at all or the costs exceed the planned budget and the project deadlines are overdue. To reduce such risk, the entrepreneur shall involve at least one experienced specialist in the communication and negotiation with clients during the quotation phase and obtain the professional opinion from the specialist regarding the estimated workload as important reference. During the project operation, interim milestones and quality gates need to be set. Regular review and release of these check-points shall be carried out.

## 7.4. Legal Risk

Another important type of risk for consulting firms is the legal risk. Under most circumstances, it mainly refers to three types of risks. The first one is the legal issues associated with intellectual property infringement. The second one is the legal issues related to the employment

relation of the specialists. The third risk is the unwanted disclosure of confidential information of clients by negligence.

As an industrial branch based on solid technical development and innovation, the automotive industry shows its attention and focus on intellectual property protection. The number of patent filings in the automotive industry is steadily increasing in the recent years as demonstrated in Figure 12. In 2018 there were more than 20,000 automotive patents filed worldwide.

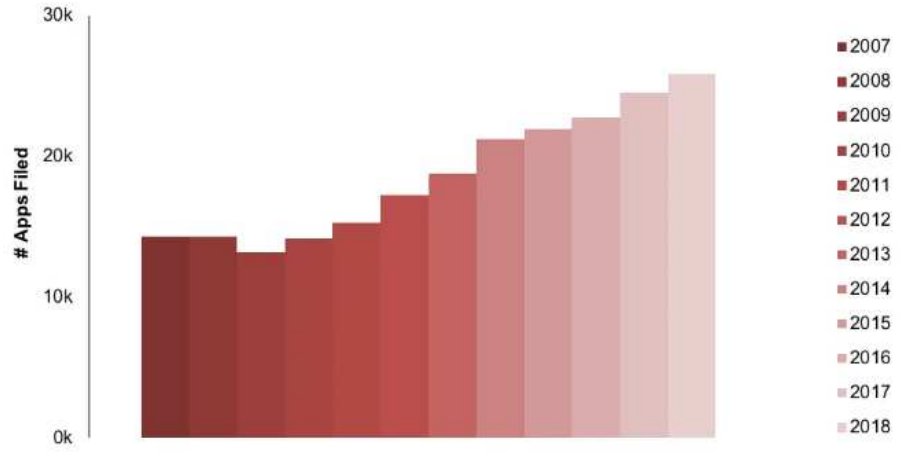



**Figure 12. Number of automotive patent filings in 2007-2018. Reproduced from (*Franklin & Gaudry, 2019*).**

In the project operation of the consulting firm, especially for the engineering service projects, there is the possibility that existing patents of other companies are breached unintentionally. It could induce serious legal consequence to the consulting firm with considerable financial losses. Thus, the entrepreneur shall check carefully in the patent databases about possible intellectual property conflicts with other companies before and during each project. The IP conflicts check has another advantage to the entrepreneur because it can be utilized as an effective way of getting an overview of the R&D strength and even the assets evaluation of other automotive companies (*Breitzman & Thomas, 2002, p. 28*).

The cooperation with specialists indicates another type of legal risk to the consulting firm. In Germany and Austria, it is common that the automotive companies require by the employment contract that the employees are not allowed to work for other companies in the automotive industry at the same time. When the consulting firm is hiring the specialists on a part-time basis for specific projects, the specialists might hide the employment relationship with other companies in purpose in order to join the projects and obtain additional income. To avoid such risk, the entrepreneur shall carefully review and inquire the background information of the

specialists before signing the employment contract. Meanwhile, it shall be defined in the contract that the specialist is personally liable to any legal consequences of breaching the existing employment contract with other employers.

In the daily business, the consulting firm has the chance to get access to certain confidential information of the clients. Since the information is extremely critical to the technical and commercial success of the clients, the consulting firm is obliged to prevent it from being disclosed. It is normally regulated by the non-disclosure agreements (NDA) between the firm and the clients. However, it is possible that the information is unintentionally disclosed by the entrepreneur or by the employees of the consulting firm, representing the risk for legal consequence for violating the NDA. In order to reduce such risk, all the staff of the firm including the entrepreneur shall take regular trainings on the topic of information security. Meanwhile, they shall be prudent in the communication with clients and media and keep the confidentiality issue in mind all the time.

# 8. Firm Performance and Feedback Loop

The preceding chapters of the present work have covered the first two stages of the evolving process of a new entry opportunity, namely the new entry generation and the new entry exploitation. Yet there is a third stage which makes the evolving process as a closed loop. The third stage starts with the evaluation of the firm performance, based on which the feedback on the resources is sent back to the very beginning of the new entry generation stage so that the constituents of the resource bundle can be adjusted accordingly and further new entry opportunities can be generated (Figure 3).

The stage of feedback loop is of specific importance to the consulting firm that is investigated in this work. As the firm takes a narrow-scope market entry strategy and a lean-and-mean operational style, it is both possible and necessary to perform rapid and timely review of the interim results of the current new entry opportunity under exploitation and make adaptation of the resources in order to generate additional new entry opportunities in new loops.

## 8.1. Firm Performance Evaluation

The evaluation of the firm performance is one of the most critical procedures in business administration. It reviews the short- and middle-term achievement of a company with respect to certain evaluation criteria and provides the input for the feedback loop for further new entry generation.

The evaluation criteria shall be carefully defined prior to the exploitation of the current new entry opportunity both in the terms on which the evaluation will be performed and in the qualitative or quantitative target value which the firm is aiming to achieve. The best approach to defining the evaluation criteria is to make a business plan. Although a business plan normally serves as one key document for the firm to communicate with outside on occasions like fundraising, it is of equally great value for internal use in the fields of quality management, objective management, strategic planning, etc.

There are two important parts in the business plan which are closely related to the firm performance evaluation, i.e. the market plan and the financial plan. In the market plan, the goals and objectives of the firm are clearly defined (as discussed in Chapter 6.1), which mainly answer the question in marketing: “Where is the firm going to?” The realization of the goals and objectives shall be reviewed and assessed by the entrepreneur as a major step of the evaluation.

The financial plan projects the development of the key financial figures of the firm in the planned period of time. It is comprised of three tables, namely the pro forma income statement, the pro forma cash flow statement, and the pro forma balance sheet. The healthy and controllable financial situation is vital to a new firm or a new entry opportunity to the extent that it objectively reflects the profitability of the firm or the new entry opportunity and predicts the chance that it will develop further. Several critical criteria in financial assessment include the time to achieve positive cash flow, the time to reach break-even point, the growth rate of the revenue, the EBITA, the net profit rate, the liquidity of the firm, etc. The thorough analysis on these figures helps the entrepreneur to get a comprehensive picture over the business and to find out the weak points and warning signs that need to be improved and dealt with.

Moreover, the firm performance in the domains of operation and organization also deserves the attention of the entrepreneur. In the present new entry opportunities, the entrepreneur shall review whether the service portfolio of the consulting firm has been implemented according to the operational plan and how effective the implementation is. The entrepreneur shall also see whether the qualified staff, in this case the specialists which match the demand of the firm, have been recruited and how committed they are to the projects as well as how adaptive they are to the organizational culture of the firm.

## 8.2. Feedback Loop

Based on the conclusion out of the firm performance evaluation, the entrepreneur shall close the loop of the evolving process of new entry opportunities by feeding the evaluation results back to the beginning of the process for resource adjustment and refinement. With the modified resource bundle, it is possible for the entrepreneur to generate further new entry opportunities and then exploit them in new loops.

It is worth noting that the feedback loop can be on different levels of scope. It could refer to the situation where after accomplishing the whole exploitation process of a new entry opportunity,

the entrepreneur turns back to re-construct the resource bundle for new loop of new entry generation. It could also refer to the situation where the entrepreneur makes refinement on the resource bundle during the exploitation of one new entry opportunity in order to achieve better performance with the same opportunity. In regards to the present work, it may indicate that the entrepreneur evaluates the firm performance of the first phase of the firm with information service and then brings in additional elements to the resource bundle, e.g. hiring specialists and renting office space, so as to exploit new opportunities like marketing service and engineering service in the second phase of the firm. However, it may also indicate that the entrepreneur adjusts the resource within the first phase of the firm to exploit the information service better, e.g. to investigate the new automotive regulation in the markets to offer more up-to-date information to the clients for the homologation consultancy service.

It is important that the firm performance evaluation and the feedback loop are not merely limited to the financial figure interpretation and the subjective judgement by the entrepreneur. The entrepreneur shall actively collect feedback and opinions from customers, suppliers, and even competitors, as well. In many cases, the voice from outside represents more objective and comprehensive assessment of the situation which the firm is currently facing with.

Furthermore, it is not wise for the entrepreneur to wait till the end stage of the new entry exploitation before he or she starts to perform the evaluation and feedback tasks. Instead, the entrepreneur shall set up several intermediate milestones and control points within the exploitation process, as commonly seen in the practice of project management, in order to measure and monitor the execution of the business plan in smaller time granularity. As soon as delay and deviation are observed, measures shall be taken by the entrepreneur to make refinement of the resource and the strategy. The business plan shall be updated accordingly. With the iterative process, the entrepreneur can make sure that the business is going in the correct direction. Additionally, the entrepreneur shall make contingency plan to define the reactions to extraordinary situations such as rapid change of market trend and so on. The contingency plan shall be coupled to the milestones for defining the triggering conditions.

# 9. Conclusion and Discussion

In summary, the present work has studied the business opportunities of a consulting firm in bridging the companies from the European and the Chinese automotive markets with each other by enhancing the communication efficiency and reducing the transaction cost. The research was conducted within the framework of the new entry opportunity rationale and has covered all the three stages of a new entry opportunity in its life cycle, namely the new entry generation, the new entry exploitation, and the feedback loop of resources.

As two major constituents of the world automotive industry, the European and the Chinese automotive markets are to a large extent complementary to each other. The European side, especially the German-speaking area, represents the most advanced technological standard and the richest engineering human resource reservation, while China has the largest consumer market and production capacity for automobiles. It creates huge amount of transaction volume between the two markets. However, the participants of the inter-market business suffer from efficiency and cost issues due to a number of barriers between the two markets such as geographical distance, time difference, language barrier, cultural barrier, and mindset barrier. The pain points of the potential clients leave considerable space for qualified consulting firms to make a profit by providing "information-broking" services among others.

According to the resource-based competitive advantage theory, a resource bundle which is valuable, rare, and inimitable is required as the prerequisite for the generation and exploitation of the new entry opportunity. For the current opportunities under discussion, the entrepreneur needs to have the knowledge resource including the technological knowledge of the motor vehicles and the market knowledge about the European and the Chinese automotive markets. In addition, the entrepreneur needs to possess a unique combination of other resources like the extensive personal network with companies in the two markets, the language skill to use English, German, and Chinese freely in communication, the high adaptability to the European and the Chinese cultures and the ability to switch between them, the Germany- or Austria-based

geographical location for the purpose of cost optimization, and the sufficient starting capital to get the business off the ground.

A service portfolio comprised of three categories of service is proposed for the consulting firm as the basis of its market entry strategy, including the information service, the marketing service, and the engineering service. Due to the high maturity of the automotive market and the strength comparison with the competitors, a narrow-scope strategy is determined as the appropriate market scope strategy for the firm. As a result, the three service categories shall be implemented one after another as the resources of the consulting firm are developing. Main competitors to the consulting firm are identified as automotive consulting firms in Europe and in China, law firms, Austrian Chinese professionals, own employees of the clients, and governmental investment agencies, whose strengths and weaknesses as well as the possibility for cooperation are analyzed.

A SWOT analysis shows that the consulting firm is weak in the capital resource and the entrepreneurial experience at its start-up stage. Accordingly, a two-phase marketing strategy is chosen. In the first phase, the firm shall focus on the information service and aim for rapid capital and experience accumulation. In the second phase, the focus shall be moved to the highly profitable marketing service and engineering service. Specific promotion and distribution strategies are proposed to match the two developing phases of the firm according to different objectives and financial situation. Because of the unique competence profile of the consulting firm, a differential pricing policy with relatively high profit margin shall be adopted.

While the organizational scale of the firm can be kept down to only the entrepreneur him- or herself in the first phase of the firm for cost saving reason, technical specialists need to be hired in the second phase for the engineering service. An open innovation platform among the consulting firms and the specialists is expected to solve the classical dilemma between business expansion and financial risk on high fixed cost for consulting business. The platform facilitates the freelancing of the specialists and benefits the consulting firms, the specialists, and the society at the same time. It can be owned and operated either independently or by one of the consulting firms, with different pricing strategy.

The bootstrapping strategy shall be adopted throughout the operational activities of the consulting firm. For information service, two databases containing information of automotive companies and automotive markets shall be set up and regularly maintained. Culture training can be chosen as the entry point to build up the initial contact with new clients. Two types of

marketing service can be offered by the consulting firm, i.e. the manufacturers' representative and the exhibition assistance. For engineering service, technical specialists from Germany and Austria will be hired on a part-time basis through different channels including the open innovation platform. The technical topics of vehicle functional safety design and the ECU system engineering can be chosen at the beginning to fulfill the high market demand in China and to match the narrow-scope strategy of the consulting firm, with the possibility to absorb other topics into the portfolio as the business is expanding.

The entrepreneur shall need to manage and minimize different types of risks that the firm is facing with, mainly referring to the financial risk, the economic risk, the operational risk, and the legal risk. The financial risk can be mitigated by tapping both the internal funds like profit retaining, asset renting, bootstrapping, payment term management, to name a few, and external funds like private savings and moonlighting. The economic risk due to unstable market environment shall be minimized by increasing financial liquidity of the firm, avoiding projects with heavy early investment, and keeping the flexibility in portfolio management. To reduce the operational risk, the entrepreneur shall keep long-term good relationship with the specialists and stay in close cooperation with them throughout the whole process of the projects. Last but not least, the entrepreneur shall carefully review and analyze possible conflicts in intellectual properties and in employment relation of the specialists, and discreetly manage the confidential information of the clients, in order to avoid legal risk.

The firm performance evaluation shall be based on pre-defined and detailed evaluation criteria. The goals and objectives defined in the market plan, the key financial figures, and the targets and achievements in operation and organization are the suitable reference points for the evaluation criteria. The judgement by the entrepreneur and the customer voice shall be combined to give a more comprehensive evaluation. The entrepreneur shall set milestones in the new entry exploitation process to realize iterative feedback loops for resource adjustment and refinement. Contingency plan shall be made and triggered by extraordinary conditions with the milestones.

In conclusion, the intrinsic barriers between the European and the Chinese automotive markets together with the consequent high transaction cost provide substantial and lucrative new entry opportunities for consulting business. To best support the generation and exploitation of the opportunities, the consulting firm needs to hold a valuable, rare and inimitable resource bundle consisting of technological and market knowledge, personal network, language skill, cultural adaptability, geographical location, and starting capital, and to take a narrow-scope market

entry strategy with a three-category service portfolio and a two-phase implementation process. Possible risks shall be minimized by bootstrapping, cooperating with specialists via open innovation platform, carrying out iterative firm performance evaluation and feedback loop, etc. By fulfilling the above-mentioned principles, the consulting firm is expected to outperform the competitors and to harvest promising achievement in the market niche of European-Chinese automotive markets bridging.

The main contribution of the present work to the entrepreneurial and managerial research is that it embodied the new entry opportunity theory on a concrete scenario which is contemporarily taking place and showing increasing amount of business opportunities to be exploited. Due to the rareness of the required resource bundle, however, the new opportunities are still treated in practice with conventional approach which is not corresponding to the specific requirement of the opportunities. Thus, the exploitation has been neither efficient nor thorough. The research here inspired the industrial community from theoretical point of view about the prerequisites and strategies for the effective generation and exploitation of such new entry opportunities.

Yet another significant contribution of the work resides in the fact that it initially suggested the possibility of applying an open innovation platform to connect the consulting firms with the specialists so that the traditional employment relationship is replaced by a more flexible and more efficient scheme and the overall resource allocation of the society is further optimized. Open innovation is actually not a brand new topic both in theoretical research and in practice. A variety of open innovation platforms can be found on the internet nowadays, based on which a large community of freelancers are realizing their occupational value and contributing to the economy growth. It is a prevailing phenomenon in the German-speaking countries as well. Nevertheless, when it comes to the relatively conservative automotive industry, open innovation mainly serves as the approach to match the OEMs with the suppliers only. The engineers, who represent the ultimate impetus for innovation, still have to “belong” to a single firm within a specific length of time. This particularly induces the aforementioned dilemma and it is exactly the situation where open innovation shall come into play.

Meanwhile, problems and negative effects can be expected and foreseen when the innovative and revolutionary organizational scheme is initially introduced to the automotive industry where patterns and norms have prevailed for decades. The investigation in this area is out of the scope of the present work. Further research is recommended to address these interesting and critical topics.

# Bibliography

Anderson, B. / Covin, J. / Slevin, D. (2009): Understanding the Relationship between Entrepreneurial Orientation and Strategic Learning Capability: An Empirical Investigation. *Strategic Entrepreneurship Journal*, 3(3), 218–40.

Austrian Business Agency (2019): Mobility Industry in Austria. https://investinaustria.at/en/sectors/automotive-industry/ - retrieved on 29 April 2020.

Banerjee, A. V. / Duflo, E. (2003). Inequality And Growth: What Can The Data Say? *Journal of Economic Growth*, 8(3), 267–299.

Barney, J. B. (2001): Resource-based theories of competitive advantage: A ten-year retrospective on the resource-based view. *Journal of Management*, 27(6), 643–650.

Beck, U. (2018): What is Globalization? Cambridge: Polity Press.

Binder, A. K. / Rae, J. B. (1999): Automotive Industry. https://www.britannica.com/technology/automotive-industry - retrieved on: 3 June 2020.

Breitzman, A. / Thomas, P. (2002): Using Patent Citation Analysis to Target/Value M&A Candidates. *Research-Technology Management*, 45(5), 28-36.

Chesbrough, H. W. (2003): The era of open innovation. *MIT Sloan Management Review*, 44 (3), 35–41.

Chesbrough, H. W. / Kim, S. / Agogino, A. (2014): Chez Panisse: Building an Open Innovation Ecosystem. *California Management Review*, 56(4), 144-171.

Covin, J.G. / Slevin, D.P. (1988): The influence of organization structure on the utility of an entrepreneurial top management style. *Journal of Management Studies*, 25(3), 217–234.

Covin, J. G. / Slevin, D. P. (1989): Strategic management of small firms in hostile and benign environments. *Strategic Management Journal*, 10(1), 75–87.

Covin, J.G. / Slevin, D.P. (1990): New venture strategic posture, structure, and performance: An industry life cycle analysis. *Journal of Business Venturing*, 5, 123–135.

Covin, J. G. / Slevin, D. P. (1991): A conceptual model of entrepreneurship as firm behavior. *Entrepreneurship: Theory and Practice*, 16(1), 7–25.

Dada, O. / Watson, A. (2013): The effect of entrepreneurial orientation on the franchise relationship. *International Small Business Journal*, 31(8), 955-977.

Donovan, D. J. (2014): What Engineers Need to Know When Selecting an Automotive-Qualified MCU for Vehicle Applications. https://www.digikey.be/nl/articles/what-engineers-need-to-know-when-selecting-an-automotive-qualified-mcu-for-vehicle-applications - retrieved on 10 May 2020.

EU SME Centre (2012): The Automotive Market in China. http://ccilc.pt/wp-content/uploads/2017/07/mercado_automovel_en_eusmecenter-1.pdf - retrieved on 29 April 2020.

Fasnacht, D. (2018): Open Innovation Ecosystems - Creating New Value Constellations in the Financial Services. 2nd Ed., Cham: Springer.

Franklin, T. / Gaudry, K. (2019): Patent Trends Study Part Five: Automotive Industry. https://www.ipwatchdog.com/2019/05/07/patent-trends-study-part-five-automotive/id=108960/ - retrieved on 22 May 2020.

George, B. A. / Marino L. (2011): The epistemology of entrepreneurial orientation: Conceptual formation, modeling and operationalization. *Entrepreneurship: Theory and Practice*, 35(5), 989–102.

Germany Trade & Invest (2019): Industry Overview – The Automotive Industry in Germany. https://www.gtai.de/resource/blob/64100/817a53ea3398a88b83173d5b800123f9/industry-overview-automotive-industry-en-data.pdf - retrieved on 29 April 2020.

Grant, R. M. (1991): The Resource-Based Theory of Competitive Advantage: Implications for Strategy Formulation. *California Management Review*, 33(3), 114-135.

Gupta, S. (2018): Driving Digital Strategy – A Guide to Reimagining Your Business. Boston: Harvard Business Review Press.

Hill, T. / Westbrook, R. (1997): SWOT analysis: It's time for a product recall. *Long Range Planning*, 3(1), 46-52.

Hisrich, R. D. / Peters, M. P. / Shepherd, D. A. (2020): Entrepreneurship. 11th Ed., New York: McGraw-Hill Education.

Kozlenkova, I. V. / Hult, G. T. M. / Lund, D. J. / Mena, J. A. / Kekec, P. (2015): The Role of Marketing Channels in Supply Chain Management. *Journal of Retailing*, 91(4), 586–609.

Lechner, C & Gudmundsson, S.V. (2014): Entrepreneurial orientation, firm strategy and small firm performance. *International Small Business Journal*, 32(1), 36-60.

Lumpkin, G. T. / Dess, G. G. (1996): Clarifying the Entrepreneurial Orientation Construct and Linking It to Performance. *The Academy of Management Review*, 21(1), 135-172.

Mansfield, M. (2019): Startup Statistics – The Numbers You Need to Know. https://smallbiztrends.com/2019/03/startup-statistics-small-business.html - retrieved on: 20 May 2020.

Messersmith, J.G. / Wales, W.J. (2013): Entrepreneurial orientation and performance in young firms: The role of human resource management. *International Small Business Journal*, 31(2), 115–136.

Miller, D. (1983): The correlates of entrepreneurship in three types of firms. *Management Science*, 29(7), 770–791.

Nagurney, A. (2006): Supply chain network economics: dynamics of prices, flows and profits. Cheltenham, Edward Elgar Publishing Limited.

Parker, G. G. / Van Alstyne, M. W. / Choudary, S. P. (2016): Platform Revolution: How Networked Markets are Transforming the Economy and How to Make Them Work for You. 1st Ed., New York: W.W. Norton & Company, Inc.

Peteraf, M. A. (1993): The cornerstones of competitive advantage: A resource ‐ based view. *Strategic Management Journal*, 14(3), 179-191.

Ratten, V. (2017): Entrepreneurship, Innovation and Smart Cities. Abingdon, Oxon & New York: Routledge.

Rauch, A. / Wiklund, J. / Lumpkin, G. T. / Frese, M. (2009): Entrepreneurial Orientation and Business Performance: An Assessment of Past Research and Suggestions for the Future. *Entrepreneurship Theory and Practice*, 33(3), 761–787.

Rodrik, D. (2018): Populism and the Economics of Globalization. *Journal of International Business Policy*, 1, 12-33.

Rohrbeck, R. / Hölzle, K. / Gemünden, H. (2009): Opening up for competitive advantage – How Deutsche Telekom creates an open innovation ecosystem. *R&D Management*, 39 (4), 420–430.

Steger, M. B. (2017): Globalization – A Very Short Introduction. 4th Ed., New York: Oxford University Press.

Traitler, H. / Coleman, B. / Hofmann, K. (2015): Food Industry Design, Technology and Innovation. Chicago: John Wiley & Sons, Inc.

Wales, W. / Gupta, V. / Mousa, F. (2013): Empirical research on entrepreneurial orientation: An assessment and suggestions for future research. *International Small Business Journal*, 31 (4), 357–383.

Wales, W. / Wiklund, J. / McKelvie, A. (2013): What about new entry? Examining the theorized role of new entry in the entrepreneurial orientation–performance relationship. *International Small Business Journal: Researching Entrepreneurship*, 33(4), 1-23.

Wang, C.L. / Altinay, L. (2012): Social embeddedness, entrepreneurial orientation and firm growth in ethnic minority small businesses in the UK. *International Small Business Journal*, 30(1), 3–23.

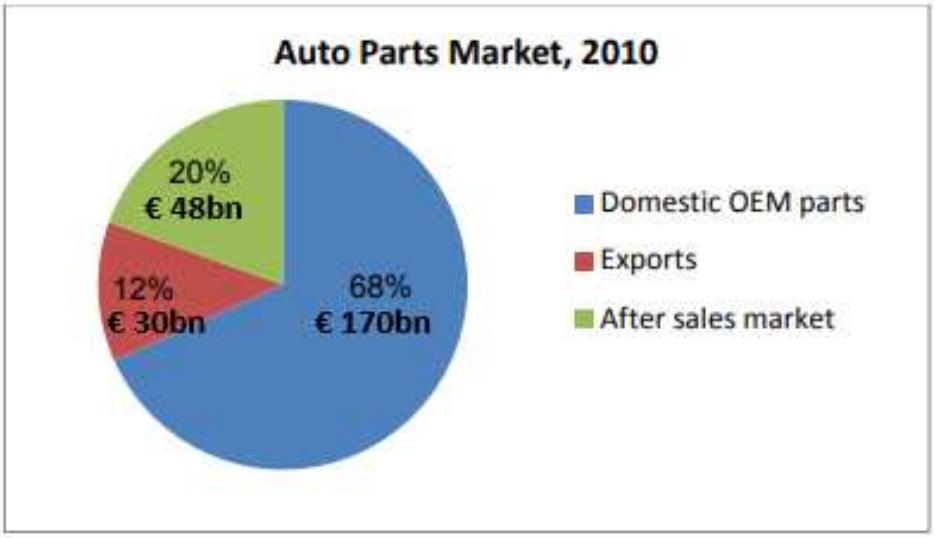
Wikipedia (2017): Automotive Industry. https://en.wikipedia.org/wiki/Automotive_industry - retrieved on 28 April 2020.

Wikipedia (2020): SAIC Volkswagen. https://en.wikipedia.org/wiki/SAIC_Volkswagen - retrieved on 20 April 2020.

Wood, D. / West, J. (2008): Creating and Evolving an Open Innovation Ecosystem: Lessons from Symbian Ltd. Rochester: SSRN.

# Appendix

## Appendix 1 – Auto Parts Market in China by Segment, 2010




Source: EU SME Centre (2012).

## Appendix 2 – Key Auto Parts imported by China by Category, 2010

| | Value (million USD) | Share |
|---|---|---|
| Transmission | 8,335 | 30.5% |
| Body and accessory | 5,382 | 19.7% |
| Engine parts | 3,551 | 13.0% |
| Engine | 2,639 | 9.6% |
| Others | 2,125 | 7.8% |
| Auto electronics | 1,629 | 6.0% |
| Driving system | 1,271 | 4.6% |
| Steering system | 1,243 | 4.5% |
| Braking system | 1,190 | 4.3% |
| Total | 27,366 | 100% |

Source: EU SME Centre (2012).

# Appendix 3 – Vehicle Imports of China by Variety, 2010

| Variety | | Volume (unit) | % change | Value (USD) | % change |
|---|---|---|---|---|---|
| **1. Buses** | | 95,011 | 152.72 | 2,088,338,237 | 173.97 |
| a. Airport shuttle bus | | 11 | -- | 4,441,041 | -- |
| b. Large bus（seats >=30） | | 203 | -- | 10,842,774 | -- |
| c. Medium bus (10<= seats <= 29) | | 4,878 | 157.96 | 216,400,887 | 163.39 |
| d. Small bus (seats <=9) | | 89,919 | 151.92 | 1,856,653,535 | 173.25 |
| Petrol engine | ED <= 1000 ml | 6 | -- | 93,452 | -- |
| | 1000 ml <ED<= 1500 ml | 7 | -61.11 | 181,267 | -55.22 |
| | 1500 ml <ED<= 2000 ml | 19,323 | 26.67 | 248,491,301 | 32.39 |
| | 2000 ml <ED<= 2500 ml | 51,645 | 234.40 | 1,107,958,110 | 211.44 |
| | 2500 ml <ED< =3000 ml | 11,440 | 341.02 | 225,040,296 | 386.75 |
| | 3000 ml <ED< =4000 ml | 5,703 | 151.01 | 240,355,208 | 185.38 |
| | ED > 4000 ml | 121 | 26.04 | 5,533,705 | 32.22 |
| Diesel engine | 1000 ml <ED<= 1500 ml | 0 | -- | 0 | -- |
| | 1500 ml <ED<= 2000 ml | 1,001 | -- | 13,894,923 | -- |
| | 2000 ml <ED<= 2500 ml | 639 | -- | 12,922,529 | -- |
| | 2500 ml <ED< =3000 ml | 32 | 166.67 | 2,087,201 | 180.79 |
| | 3000 ml <ED< =4000 ml | 0 | -- | 0 | -- |
| | ED > 4000 ml | 2 | 100.00 | 95,543 | -49.71 |
| **2. Cars** | | 343,653 | 108.48 | 14,147,734,762 | 115.47 |
| Petrol engine | ED <= 1000 ml | 4,047 | 39.74 | 46,362,000 | 17.02 |
| | 1000 ml <ED<= 1500 ml | 7,063 | 212.94 | 152,663,779 | 221.45 |
| | 1500 ml <ED<= 2000 ml | 117,325 | 153.75 | 3,005,017,782 | 185.58 |
| | 2000 ml <ED<= 2500 ml | 59,061 | 132.16 | 1,552,526,950 | 133.34 |
| | 2500 ml <ED< =3000 ml | 99,765 | 93.00 | 5,193,733,914 | 93.68 |
| | 3000 ml <ED< =4000 ml | 42,274 | 37.41 | 2,548,371,077 | 70.45 |
| | ED > 4000 ml | 14,085 | 155.12 | 1,646,846,685 | 182.36 |
| Diesel engine | ED <= 1000 ml | 6 | -- | 102,403 | -- |
| | 1000 ml <ED<= 1500 ml | 3 | 50.00 | 72,013 | 161.47 |
| | 1500 ml <ED<= 2000 ml | 3 | 50.00 | 79,542 | 146.82 |
| | 2000 ml <ED<= 2500 ml | 0 | -100.00 | 0 | -100.00 |
| | 2500 ml <ED< =3000 ml | 6 | 50.00 | 261,015 | 108.68 |
| | 3000 ml <ED< =4000 ml | 1 | -83.33 | 36,800 | -73.48 |
| | ED > 4000 ml | 14 | 7.69 | 1,660,802 | 61.81 |
| **3. Off-road vehicles** | | 351,408 | 69.45 | 12,711,408,243 | 79.57 |
| Petrol engine | ED <= 1000 ml | 0 | -- | 0 | -- |

| | | | | | |
|---|---|---|---|---|---|
| | 1000 ml <ED<= 1500 ml | 2,936 | 18.53 | 35,892,444 | 31.60 |
| | 1500 ml <ED<= 2000 ml | 36,011 | 50.72 | 877,572,764 | 72.90 |
| | 2000 ml <ED<= 2500 ml | 87,644 | 128.54 | 1,924,691,702 | 131.60 |
| | 2500 ml <ED< =3000 ml | 83,493 | 46.21 | 3,699,903,449 | 75.90 |
| | 3000 ml <ED< =4000 ml | 98,095 | 44.75 | 3,495,009,983 | 34.87 |
| | ED > 4000 ml | 26,508 | 132.59 | 1,843,338,672 | 141.05 |
| Diesel engine | 1000 ml <ED<= 1500 ml | 0 | -- | 0 | -- |
| | 1500 ml <ED<= 2000 ml | 776 | -23.55 | 12,953,634 | -13.91 |
| | 2000 ml <ED<= 2500 ml | 3,651 | 94.00 | 129,087,831 | 112.66 |
| | 2500 ml <ED< =3000 ml | 11,239 | 240.27 | 608,706,336 | 274.35 |
| | 3000 ml <ED< =4000 ml | 896 | 558.82 | 73,089,892 | 603.07 |
| | ED > 4000 ml | 159 | 174.14 | 11,161,536 | 141.86 |
| **4. Other passenger vehicles** | | 6,083 | 376.72 | 181,274,457 | 857.20 |
| **5. Unspecified passenger vehicles** | | 53 | 65.63 | 1,977,498 | -82.14 |
| **6.Trucks** | | 13,350 | 86.90 | 1,004,822,767 | 96.23 |
| a. Diesel engine | GVW <= 5 t | 65 | -45.38 | 3,041,057 | 20.04 |
| | 5t < GVW <= 14t | 146 | -31.46 | 12,342,933 | 0.68 |
| | 14t < GVW < 20t | 60 | -57.14 | 4,797,795 | -53.18 |
| | GVW > 20t | 11,454 | 89.70 | 911,444,105 | 99.32 |
| b.Petrol engine | GVW <= 5t | 1,599 | 163.43 | 69,131,938 | 175.21 |
| | 5t < GVW < 8t | 8 | -11.11 | 506,410 | 46.12 |
| | GVW > 8t | 14 | -- | 647,788 | 749.27 |
| c. Unspecified trucks | | 4 | -75.00 | 2,910,741 | -30.83 |
| **7. Tow tractors** | | 1,752 | 66.22 | 126,904,011 | 66.55 |
| **8. Dump trucks** | | 124 | -8.15 | 38,425,743 | -21.85 |
| **9. Special vehicles** | | 333 | -11.20 | 257,626,368 | 17.13 |
| **10. Chassis** | | 1,817 | 82.98 | 81,282,900 | 74.87 |
| **Grand Total** | | 813,584 | 93.33 | 30,639,794,986 | 99.73 |

Source: EU SME Centre (2012).