

THE RISE AND COMPETITIVENESS OF SOUTH KOREAN
AUTOMOBILE MANUFACTURERS –
A COMPARATIVE STUDY WITH GERMAN AUTO
PRODUCERS

By
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ATTESTATION OF AUTHORSHIP

I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person (except where explicitly defined in the acknowledgements), nor material which to a substantial extent has been submitted for the award of any other degree or diploma of a university or other institution of higher learning.



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ABSTRACT

With the recent ascend of Korean car manufacturers to major competitors in the global automobile market in less than three decades, questions arise how these car producers succeeded to rise in such a mature industry and what competitive strategies they follow. It furthermore shows a change in direction from late entrants impelled to catch-up with established firms in terms of technology, design and other inalienable business skills, to threatening innovative rivals. By analysing the pre-conditions for the rise and the competitive strategies applied by Korean car manufacturers in comparison to their German counterparts, this dissertation provides suggestions in mainly three areas: the continuing competitiveness of Korean car manufactures; the future survival of European car producers and last but not least for the rise of new competitors from emerging markets.

I. INTRODUCTION

I.1. The rise of Korean automobile manufacturers

The Republic of Korea (in the following referred to as Korea) is one of the most prosperous economies in the world and has enjoyed remarkable growth from one of the poorest countries in the world to an industrialised economy in less than 50 years. In the literature, a large part of Korea's economic success is ascribed to the huge Japanese-like business conglomerates (Chang, 2006; Choe & Pattnaik, 2007). With strong governmental support since the 1960s, these so-called *chaebols*,¹ such as Samsung, LG and Hyundai, succeeded in establishing themselves in the international business environment (Green, 1992). In 2009 fourteen of these firms ranked among the world's top 500 Fortune companies (*Fortune*, 2010).

South Korea is considered a key global player in steel, shipbuilding, textiles and consumer electronics. Another major economic pillar is the automobile industry (Central Intelligence Agency, 2009). As of 2004, the industry including supporting industries employed 250,000 employees and generated a turnover of USD 78 billion² (International Organization of Motor Vehicle Manufacturers [OICA], 2006). Despite the emergence of the Korean automobile industry over the last 40 years, the country quickly became one of the leading auto producers in the world and is currently ranked fifth behind Japan, China, Germany and the USA (OICA, 2009). The South Korean car manufacturers comprise Hyundai, Kia, GM Daewoo, SsangYong Motor Company and Renault Samsung Vehicles, with the Hyundai-KIA Automotive Group being the largest producer and dominator of the domestic market (Economist Intelligence Unit [EIU], 2009b). The total annual output of the industry in 2009 added up to 3.2 million passenger vehicles of which 2 million were exported (Korea Automobile Manufacturers Association, 2010). The main export markets are the US, Europe and increasingly emerging markets such as India and China (EIU, 2009b). Together Hyundai Motors and its affiliate KIA accounted for 4.6 per cent of Korea's total exports in 2006 (*Economist*, 2007b).

The specialty of South Korean auto producers is to provide affordable entry-level cars, which are considerably cheaper than their competitors' offerings (Greenlees, 2004). Recently Korean car producers have started to move upmarket. With the launch

¹ Korean *chaebols* are defined as large diversified business groups that consist of formally independent firms and are controlled by the family members of the founder (Lee & Yoo, 1987).

² All foreign currency amounts in this document have been translated at the USD exchange rates ruling at 27 June 2010.

of the Hyundai Genesis - the first Asian luxury sedan to be awarded 'The North American Car of the Year' in 2008, Hyundai introduced its very first luxury model after four years of development time, aiming to compete against the dominant European brands in this market segment (Choi & Bok, 2009). In addition, the immense problems with the poor quality reputation of Korean cars have also gradually dissipated. According to the U.S. J.D. Power Initial Quality survey that rates the satisfaction of customers with their newly purchased cars, Hyundai has ranked among the top three brands in 2006 ahead of Toyota for the second time in three years (*Economist*, 2007b).

As a result, Korean car manufacturers increase their sales and market share globally and enjoy record profits in recent years, even during the latest recession, while competitors from the US, Japan and Europe are concerned with declining sales (*Economist*, 2009c). Hyundai, for example, was able to increase its market share in the US market to 4.4 per cent up from 3.1 per cent in the previous year and hit new sales records by September 2009. Though, some experts argue that the company's success was mainly attributed to governmental scrappage incentives in many developed countries, as well as a weak Korean won, industry insiders see South Korean carmakers prosper further (Song & Simon, 2009). According to the Global Auto Executive Survey 2010 conducted by KPMG, over 73 per cent of the respondents (mainly middle to top-level managers) see Hyundai and KIA's market share further increasing over the next few years. Prospects for Chinese and Indian brands, as well as for Toyota and Volkswagen are perceived as similarly positive, while market shares of other European competitors' are expected to be stable and US competitors' to significantly decrease (KPMG, 2009b).

All these recent developments and events are indicators of the rise of the Korean car manufacturers to major competitors in the future global automobile market. Moreover, they show a change in direction from late entrants impelled to catch-up with established firms in terms of technology, design and other inalienable business skills, to threatening innovative rivals.

I. 2. Why is the comparison with Germany useful?

Despite the author's sound knowledge and ongoing interest in the German car industry, a benchmark with German competitors is useful for several reasons.

First, similarly important as to South Korea's national economy, is the German automobile industry for the German economy. In 2008, the German automobile industry employed around 750,000 employees and generated revenues over USD 400 billion.

Germany constitutes the fourth largest auto producer in the world ahead of South Korea and produced over ten million cars worldwide in 2008, which is equivalent to 17,4 per cent of the world automobile production. Of the six million vehicles produced in Germany almost 75 per cent were exported. The major producers in Germany are Volkswagen AG (including Audi), BMW, Daimler AG and Porsche AG. The main export markets represent Western Europe, the US and China (EIU, 2009a; German Association of the Automotive Industry [VDA], 2010b). Hence, German carmakers represent a major competition for Koreans in most markets. Second, there is evidence of South Korean car manufacturers increasingly encroaching on the competitive space of larger German car manufacturers. With Hyundai's move upmarket and the refocusing on its mainstream business with less expensive, small and fuel efficient models characterising the future trend in demand, the company provides fierce competition to German car manufacturers that are dominating these two market segments (premium and small compact models) (*Economist*, 2007a, 2009e). Moreover, South Korea's biggest auto manufacturer Hyundai is also planning to foster its market presence in the German car manufacturers stronghold, the European market, where Hyundai's market share so far has been a mere 2.2 per cent (Ihlwan, 2008b; Warburton & Pretorius, 2009). At the same time, its latest efforts in the development of clean diesel technologies will increase its competitiveness against German competitors who are committed to these technologies (Frink, 2008; Hyundai Motor Company, 2009a). German car producers are furthermore aiming to get a foothold in the emerging markets where the Koreans have a strong market presence (EIU, 2009a; Ihlwan, 2008a).

Last but not least, with Korean Hyundai surpassing Ford's global sales in the first half of 2009, the company will consequently strive to overtake Volkswagen's third place in the near future (Song & Simon, 2009).

I.3. Purpose and organisation of the dissertation

Given the remarkable achievements over a short period of time, the question inevitably arises how Korean car manufacturers succeeded to rise in such a mature and highly competitive environment where until recently consolidation was imperative in order to deal with ever falling profit margins and increasing costs (*Economist*, 2005). A lot of research was conducted on the late industrialisation of Korea (e.g. Amsden, 1989, 1991, 1995; Thompson, 1996; Kang, 2002) and its successful late entry into various industries, in particular semiconductors and electronics (e.g. Cho & Rhee, 1998; KunMo & KongRae, 1999; Choung & Hwang, 2000; Gil, Bong & Lee, 2003; Lee,

2005). However, literature on the late entry of Korean automobile firms and their competitive strategies used to establish themselves internationally is rather sparse. With the aim to provide a more complete picture on the rise and competitiveness of the Korean automobile industry, this dissertation analyses the competitive strategies applied by Korean car manufacturers in comparison to their German competitors. An interesting point beyond that will be the role of governments with many governments around the world setting ever more stringent emission standards (KPMG, 2009a) and signalling their willingness to safeguard their national car industries through protectionist measures in light of the recent recession (Chaffin, 2009).

In the end, this dissertation aims at answering the following questions:

- What were the driving forces behind the growth of the South Korean automobile industry?
- What kind of strategies do the Korean car manufacturers pursue in order to increase their competitiveness and catch-up with established firms? Hereby special emphasis will be given to the technology strategy.
- Are Korean car producers following the same or divergent strategic paths in comparison to their German competitors?
- What present and future impacts will governments have on the competitive environment and the competitiveness of firms and industries?
- What implications does the rise and growth of the Korean automobile producers have on the rise of new competitors from emerging economies like China and India?

This dissertation will thereby contribute to three main areas by deriving tentative recommendations and implications for the continuing competitiveness of Korean car manufacturers, for the future survival of European car producers, and for the rise of new competitors from emerging economies like China and India.

By reviewing the literature on the concepts of competitiveness theory, late industrialisation paradigm, as well as general strategic implications of late entry; a theoretical foundation for the analysis will be presented. Moreover, the development of the Korean automobile industry and its peculiarities will be depicted. Since the Korean car manufacturers are latecomers, whereas German firms have been established in the industry far longer, it is necessary to understand the pre-conditions for the rise. In the next step, an analytical framework will be proposed for the subsequent case study analyses, followed by the methodology used. In the main part of the dissertation, the

competitive strategies of the Hyundai-KIA Automotive and Volkswagen Group will be analysed individually. The findings will then be synthesised and evaluated. In the concluding part, findings will be summarised and implications for the future of the automobile industry and other emerging latecomer firms will be derived. It should be noted hereby that the focus of this dissertation is solely directed towards the passenger vehicle segment without the consideration of light trucks or commercial vehicles. Last but not least, the dissertation will conclude with the account of limitations encountered during this study and their implications for further research.

II. LITERATURE REVIEW

II.1. The competitiveness theory

A great body of research is available dealing with the theory of competitiveness and competitive advantage of nations, industries and firms (e.g. Barney, 1986; 1991, 1995; Buckley, Pass, & Prescott, 1988; Moon & Peery Jr., 1995; Moon, Rugman, & Verbeke, 1998; Porter, 1990; Prahalad & Hamel, 1990; Schuller & Lidbom, 2009). In order to gain a more comprehensive understanding of competitiveness, this chapter introduces different definitions of competitiveness, followed by a description of different theoretical approaches to conceptualise and measure competitiveness. In the end, the multiple theories are combined and incorporated into one framework, which builds the foundation for the analytical framework and the subsequent case study analyses. It should be noted here that the integrative framework is solely focusing on the analysis at the firm level, since the two case studies involved in this dissertation refer to two organisations.

II.1.1. Definitions of competitiveness

Despite the common use of the term competitiveness, it is rarely defined in literature and varies depending on the level-of analysis at the country, industry or firm level. Thus, any analysis dealing with competitiveness has to clearly state at which level measurement is taking place (Buckley, et al., 1988; Moon & Peery Jr., 1995; Snowdon & Stonehouse, 2006).

In the Report from the Select Committee of the House of Commons on Overseas Trade (1985), commonly known as the Aldington Report, national competitiveness is described as *“the degree to which [a nation] can, under free and fair market conditions, produce goods and services that meet the test of international markets while*

simultaneously expanding the real incomes of its citizen. Competitiveness at the national level is based on superior productivity performance“ (Buckley, et al., 1988, p. 176). Put differently, *“national competitiveness refers to a country’s ability to create, produce, distribute and/or service products in international trade while earning rising returns on its resources”* (Scott, Lodge, & Bower, 1985, p. 3).

While national competitiveness encompasses the entire economy of a country, Porter, one of the greatest advocates of the competitiveness of nations, claims that the basic unit of analysis for the competitiveness of a nation is the industry seeing that nations as a whole do not compete in international markets, but their firms (Moon & Peery Jr., 1995). He further adds that it is rather unlikely that a country can compete successfully in all industries. Instead countries gain international success in different industries or segments (Porter, 1990), which in turn depends on firms’ *“competitive advantage relative to the best worldwide competitors”* (Porter, 1990, p. 76).

Since the competitiveness of nations and industries ultimately depends upon firms; the field of strategic management traditionally focuses on the analysis at the firm level. In general, a firm’s competitiveness relates to *“the ability to increase in size, market share and profitability”* (Clark & Guy, 1998, p. 364). Other definitions emphasise the means to gain competitiveness, which are the firms’ capabilities to produce and market goods whose price and non-price qualities exceed the offers of domestic or foreign competitors. The concept of competitiveness is thereby closely related to the concept of efficiency (i.e. achieving desired goals at a minimum possible cost), but further encompasses the concept of effectiveness, which involves the configuration of the most appropriate objectives (Buckley, et al., 1988). Moreover, competitiveness is also often confounded with the term productivity. While the latter alludes to internal capabilities of organisations, the term competitiveness refers to the relative position of an organisation in comparison to its competitors. Hence, competitiveness is a relative concept whose analysis always requires a competitor as a benchmark (Moon & Peery Jr., 1995).

II. 1.2. Theoretical foundations

Given the tremendous complexity and the lack of a universal conceptual framework for competitiveness, different theoretical approaches identify distinct determinants and measures for competitiveness. In general, literature can be divided into three different streams to conceptualise competitiveness: the industry-based, the resource-based and the institution-based view. These concepts are not rationally contradictory and

combining them allows for a more complete picture of the competitive forces shaping the competitive environment firms are confronted with (Barney, 1986; Peng, Sunny Li, Pinkham, & Hao, 2009).

II. 1.2.1. The Industry-based view

The first approach, which was mainly popularized by Michael Porter since the 1980s, is Industrial Organisation theory. According to this concept, returns of a firm are determined by the structure of an industry, which in turn is shaped by several forces like the existence and value of barriers of entry, the number and size of competitors in the industry, the existence and degree of product differentiation and the overall demand elasticity in the industry (Barney, 1986). By terming the industry's structural attributes slightly differently and adding the bargaining power of suppliers, Porter (1980, 2008) developed the model of five forces that shape the competition in an industry (see Figure 1). According to this model, industries that demonstrate large entry-barriers (i.e. the threat of new entrants is low), small number of competing firms, a large degree of product differentiation (meaning few substitutes for a product or service are available), or low demand elasticity (i.e. low bargaining power of buyers), are characterised by higher returns and less competition. Alternatively, industries with low-entry barriers, a high number of competing firms, low differentiation potential and high demand elasticity tend to imbed fierce competition (Barney, 1986; Porter, 1980; 2008).

Figure 1: The five forces that shape industry competition

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(Source: Porter, 2008, p. 80)

As a result, these forces determine firms' conduct (i.e. its strategy) and performance, leading to a structure, conduct and performance paradigm. The strategy or conduct of a firm defines the means the firm uses to achieve their goals or the maximisation of the firms economic returns and performance (Porter, 1980). Industrial Organisation theory urges firms to exploit, create and alter the structural attributes in order to increase their returns and to protect themselves from return-reducing competitive entry (Barney, 1986).

In his work "*The competitive advantage of nations*", Porter (1990, 1998) extends his five forces model, by introducing a diamond model with four determinants of national competitive advantage (see figure 2). According to this approach, the most important attributes influencing the competitive environment in which companies operate, are factor conditions (e.g. labour, resources, infrastructure etc.), demand conditions (i.e. powerful and sophisticated buyers that force innovation and set standards worldwide), related and supporting industries (e.g. R&D institutes, globally competitive suppliers) and firm strategy, structure and rivalry (i.e. conditions influencing how the organisations in a country are formed, structured and managed). While a nation does not necessarily inherit these important factors, it is argued that nations have to create, enhance and continuously upgrade each of those factors in order for their firms to gain and sustain their competitive advantages. Likewise Porter states that the diamond constitutes a system where every factor is self-reinforcing. A good example for the systemic nature of the diamond constitutes vital domestic rivalry. Rivalry, not only encourages the development of unique specialised factors such as highly-skilled labour, but also the formation of high-class suppliers which in turn leads to more sophisticated products and customers on the demand side. This phenomenon, for example, can be observed in the Italian furniture and footwear industry or the Japanese semiconductor industry. On the other hand, Porter argues that the diamond promotes the formation of clusters of competitive industries with firms from the same industry being linked together through vertical or horizontal relationships, and which are usually geographically agglomerated (e.g. Silicon Valley, Hollywood etc.) (Porter, 1990).

Figure 2: Determinants of national competitive advantage

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(Source: Porter, 1990, p. 77)

While Porter's diamond model finds approval among many scholars; several researchers (e.g. Cartwright, 1993; Dunning, 1993; Grant, 1991a) criticise its narrow scope. One of its greatest weaknesses, especially in times of globalisation, is the home-based perspective. The model neglects multinational activities that mainly elucidate the success of small-scale economies such as Korea and Canada in previous empirical studies. Instead Porter's global firm functions just as an exporter and underestimates the organisational complexities of multinational firms. To deal with this shortcoming Rugman and D'Cruz (1993) and later Moon, Rugman and Verbeke (1995) introduced the double diamond by adding an outside layer to the diamond, which represents the global competitiveness in the form of multinational activities (Moon, et al., 1998).

Another deficiency of the model is the treatment of the exogenous variable government as a secondary driver (Ketels, 2006). Even though Porter acknowledges the role of the government, he argues that its role is rather menial, as it cannot generate a competitive advantage for a nation (Porter, 1980). In this point many scholars disagree, often pointing to the important role that governments play in emerging economies (e.g. Peng, Wang, & Jiang, 2009; Peng, et al., 2008).

II.1.2.2. The resource-based view

In contrast to Industrial Organisation theorists, favourers of the Chamberlinian concept or resource-based view (RBV) focus on the firms' assets and unique capabilities as the defining factors of their pursued strategies and competitiveness (e.g. Barney, 1991; 1995; Barney, Wright, & Ketchen, 2001; Grant, 1991b; Hamel & Prahalad, 2005;

Prahalad & Hamel, 1990; Teece, Pisano, & Shuen, 1997; Wernerfelt, 1984). While similar and overlapping resources and capabilities enhance competition among firms, firm heterogeneity may be an important source of firms' competitive advantages. Consequently, differences in assets and resources allow firms to employ strategies that alter the industry structure and exploit their individuality and uniqueness. Differences in firms' assets and resources evolve through e.g. different levels of technical know-how, diverse skills of their human resources, differences in brand images and reputations, as well as patents and trademarks (Barney, 1986). In order to create a sustainable competitive advantage it is argued that firm resources must be rare, valuable, imperfectly imitable, durable, immobile, little transparent and transferable, as well as non-substitutable (Barney, 1991; Grant, 1991b).

Resources can be either classified as tangible (explicit; codified and can be easily transferred) or intangible (tacit; uncodified and difficult to transfer) (Barney et al., 2001; Lu, Tsang, & Peng, 2008). Although Barney (1991) considers all assets, attributes, capabilities, organisational processes, knowledge and information of a firm as their resources; many scholars plead for the distinction between resources and capabilities (e.g. Amit & Shoemaker, 1993; Grant, 1991b; Prahalad & Hamel, 1990; Teece, et al., 1997). In their view resources form the source of firm's capabilities, while the latter represent the firm's ability to deploy those resources in the most efficient and effective way (Amit & Shoemaker, 1993; Grant, 1991b; Moon & Peery Jr., 1995). In other words, resources are rarely productive on their own, but organisations have to transform them through productive activities using their capabilities or competences (Grant, 1991b).

Given the fast changing business environment in the past decades, scholars more recently extended the capabilities concept by adding a dynamic component to it. Dynamic capabilities are defined as the firm's ability to adjust, integrate and reconfigure its internal and external competences in congruence with the changing business environment (Ambrosini & Bowman, 2009; Teece, et al., 1997). In a broader sense dynamic capabilities encompass the concepts of core competences (Prahalad & Hamel, 1990), combinative capabilities (Kogut & Zander, 1992), distinctive capabilities (Snow & Hrebiniak, 1980), organisational capabilities (Collis, 1994), as well as the knowledge-based view of a firm³ (Grant, 1996). This approach is further closely linked to the Schumpeterian view of economics in which creative destruction in the form of revolutionary product, market or technological innovations shapes the industry's

³ Grant (1996), for example, refers to organisational capabilities as the outcome of knowledge integration.

competition as it defines which organisational resources, capabilities and knowledge are strategically valuable (Barney, 1986). Accordingly, *“the value of a particular set of capabilities must be evaluated in the market context within which a firm is operating”* (Barney, et al., 2001, p. 631). Firms who inherit the required competences and resources are likely to succeed from early on, whilst firms lacking those resources and skills have to respond by modifying their capabilities and assets. In the same context, Nonaka (1994), Nonaka and Takeuchi (1995) and Barney et al. (2001), point out that in a dynamic business environment the organisation’s ability to learn and adapt constitutes one of the most important capabilities or competences in order to gain competitive advantage. However, despite the theoretical assumption of firm’s having the possibility to choose any strategic option, they are yet bound to past strategic choices that form the basis for future decisions (Teece, et al., 1997). The path dependency of firms can be best illustrated with the example of Canon. With Canon’s initial core competences in optics, imaging and microprocessor controls, the company was able to diversify its product portfolio into areas related to their core competences such as laser printers, copiers and image scanners. Without their previous competences, this decision would have rather been unlikely (Prahalad & Hamel, 1990).

II.1.2.3. The institution-based view

Given the rise of emerging economies from Southeast Asia in the 1990s, which was facilitated by favourable institutional policies, Peng (2009) suggests the consideration of a third determinant of competitiveness – namely the institution-based view. Indeed, many scholars acknowledge the impact of external institutions on the competitive environment (e.g. North, 1990; Oliver, 1997; Scott, 1995). Protectionist policies in favour of domestic firms or the lack of appropriate institutional systems to protect intellectual property rights encouraging piracy, are just a few examples showing how institutions (or their absence) can improve or deteriorate the competitive advantages of firms (Chao, 1998; Lu, et al., 2008).

Institutions can be either formal (e.g. laws, public policies and regulations like antidumping) or informal (e.g. norms, cultures, ethics or interpersonal relations) with formal institutions being regulative and the latter being cognitive and normative. Put differently, Institutions (formal or informal) create rules and guidelines for organisations to follow and signify which actions of an organisation are appropriate, desirable and legitimate (North, 1990; Peng, et al., 2009; Scott, 1995).

In most of the previous literature formal market-based institutions are taken for granted since they are almost invisible in developed countries where most of the strategy literature originates from. Informal institutions such as cultures and norms, on the other hand, are treated as background variables. However when dealing with emerging economies, informal institutions such as interpersonal networks and relationships, for example, become more important as they compensate for the lack of well-functioning, consistent and efficient formal institutions, thus reducing uncertainty and offering constancy and predictability (Peng, 2002; Peng, et al., 2009). It is commonly agreed that compliance with laws and regulations set by formal institutions on the micro and macro level may impose higher transaction costs on firms (Hill, 1995; Peng, et al., 2008). In some cases informal institutions can constitute one form of circumventing those costs. Considering China or India, for example, red tape can constitute a severe threat for a company's business operations. In order to reduce uncertainty, most companies therefore rely on favourable external connections with government officials, which often imply the exchange of gifts and favours. However, the preference of informal constraints over formal ones can also be observed in many developed countries. Japanese supplier relations, for example, are often based on consensus-building and trust rather than formal contracts (Peng, 2002). Likewise, some firms in developed countries that lack a competitive advantage use their informal relationships in the form of lobbying to fight competitors (Peng, et al., 2009).

In summary, strategic choices of firms are not just based on firms' capabilities and industry conditions, but reflect the institutional framework managers are confronted with. They are further the outcome of the dynamic interaction between organisations and institutions (Oliver, 1997; Peng, 2002; Scott, 1995). Given the fact that all organisational actions, goals and outputs must conform to institutional rules, norms, beliefs, cultures and expectations that vary across countries, one of the key resources for building a competitive advantage constitutes the institution-based knowledge of the international markets they operate within (Lu, et al., 2008; Peng, et al., 2009). The failed attempt of Indian Tata Motors to establish a new automobile production plant in West Bengal is a key example to show that firms have to do their homework and be familiar with the institutional environment of the markets they operate within. Despite the fact that the plant would have created thousands of new jobs in the region, the state government and local farmers reacted hostile to Tata's plans, as they were concerned about the loss of farmland in favour of the new factory (*Economist*, 2008; Peng, et al., 2009).

II.1.3. An integrative multiple theory approach

Despite the abundance of concepts and frameworks for measuring competitiveness, a general comprehensive model that combines multiple theories and is applicable in practice is not readily available (Ambastha & Momaya, 2004; Buckley, et al., 1988). Most empirical studies are preoccupied with measuring and comparing the performance of firms. However performance measures reflect the outcome (i.e. past and present competitiveness factors) but not the sources of future competitiveness (Buckley, et al., 1988; Daniel, 1961). In many Asian companies, for example, profitability or performance measures might not depict the company's actual position due to differences in financial markets and the resulting strategic long-term orientation. Conversely, the prevalent shareholder capitalism in many Western countries works in favour of short-term profits (Peng, et al., 2009)⁴. In this context it becomes important to look beyond financial ratios, market shares and other profitability parameters in order to identify and evaluate the underlying resources, capabilities and knowledge of a firm that determine its performance (Buckley, et al., 1988). In this regard the inevitable question arises how to measure the resources and capabilities of an organisation? Due to the vast diversity and complexity of concepts, most researchers consider different variables and indicators to measure competitiveness often applying archival and quantitative proxies, which raise concerns about the construct validity of measures. Meanwhile, researchers struggle with the assessment and measurement of intangible resources and capabilities. It is therefore often argued that intangible resources call for qualitative approaches (Barney et al., 2001; Buckley, et al., 1988; Rouse & Daellenbach, 1999).

Buckley, Pass and Prescott (1988) categorize measures into three general groups consisting of competitive performance, potential and processes. In this interrelated model (see figure 3), potential⁵ represents the inputs (i.e. resources, assets, knowledge), processes the management (i.e. capabilities and competences) and performance the outcome of a firm's operations. From this point of view, competitiveness is a dynamic – rather than static process, where measures must be considered jointly and not individually. Potential alone, for example, does not guarantee that management processes will turn them into a successful performance. Concurrently it is the managers' responsibility to create and build new potential. The authors therefore suggest the combined analysis of these categories, with quantitative performance measures

⁴ Note from the author: This example also illustrates the importance of determining the applied time horizon in an analysis.

⁵ Instead of the term '*potential*' Ambastha & Momaya (2004) use the term '*assets*'.

identifying the relative competitive position of a firm, followed by a qualitative investigation of the firm's potential and processes.

Figure 3: The interrelationship between measures of competitiveness

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(Source: Buckley, et al., 1988, p. 178)

As previously mentioned, the operationalisation of measures in literature is not uniform and depends on the scholars' research area, objectives and the level of analysis. In an attempt to facilitate the evaluation and assessment of resources and capabilities (i.e. potential and process measures), Grant (1991) proposes a general classification into six major categories, which are financial, physical, technological, organisational, and human resources, as well as reputation. Nevertheless, this classification is very broad and gives a lot of leeway for the conceptualisation of measurements. Buckley et al. (1988) therefore list more specifically cost, price and quality competitiveness; productivity; technological activities (i.e. R&D expenditures, patents etc.); and the endowment of or access to capital, skilled labour and raw materials as possible measures for the potential of a firm with technological development and price/cost competitiveness being the most pivotal ones. In regards to processes, Buckley et al. identify a firm's commitment to international business, ownership advantages⁶, investment strategy, commercialisation of technologies, marketing aptitude, internal and

⁶ With ownership advantages the authors refer to Dunning's eclectic theory or OLI paradigm that helps to explain the advantages of different types of foreign direct investments over exports based on three criteria: ownership (or firms-specific advantage), location (or country specific advantage) and internalization. For further information please see Dunning (1980).

external management relations (i.e. relations to workforce, customers, suppliers, retailers, distributor, strategic partners, host and foreign governments), economies of scale and scope⁷, innovative product management, as well as firms' experience as important measures of competitiveness. Some literature also highlights the importance of operational management practices including manufacturing and process technology, as well as quality management amongst others (Sirikrai & Tang, 2006). Ambastah and Momaya (2004) probably offer the most extensive list of competitiveness measures.

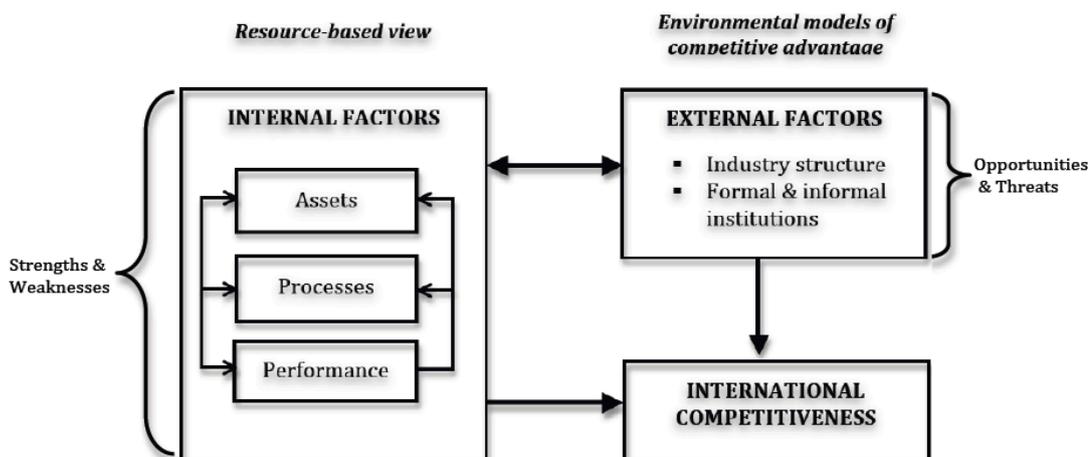
Nonetheless, while the aforementioned measures describe an internal analysis of an organisation, most researchers recognise the need to combine the internal analysis, with the analysis of external competitiveness factors in order to gain a more complete picture (e.g. Barney, 1991; Hansen & Wernerfelt, 1989; Sirikrai & Tang, 2006).

Two key tools for strategy formulation – the so-called SWOT or WOTS-UP ('weakness, opportunities, threats, and strengths underlying planning') analysis, are examples of the integration of the internal and external analysis of competitiveness. While the former representing strengths and weaknesses emphasises the resource-based view, the latter focusing on opportunities and threats underlines the industrial organisation and institution-based-view (Barney, 1991).

By incorporating the different concepts and findings, a conceptual framework (see figure 4) is established which will be used as a foundation for the analytical framework in the next Chapter. However, even though this framework is an attempt to provide a comprehensive analysis, it is almost impossible to attain complete information about the competitive environment to ascertain the competitive position of a firm and develop normative theories or strategies for its enhancement of competitiveness. Not least because uncertainty and luck still play an important role in the competitiveness of firms (Barney, 1986).

⁷ *Economies of scope* enable multi product firms to reduce costs through synergies in e.g. production, marketing, research & development etc. (e.g. Panzar & Willig, 1981).

Figure 4: An integrated conceptual framework for competitiveness



(Source: Kumar & Chadee, 2002, p. 5; adapted and modified by author)

II.2. Late industrialisation

In the context of the competitiveness theory, the late industrialisation paradigm becomes highly interesting. Given the lack of proprietary technology, late industrialising countries usually tend to diversify into various technologically unrelated industries while focussing on the production of goods rather than R&D or basic research. Consequently, the late industrialisation of countries occurs on the basis of ‘pure’ learning or borrowing of already commercialized technologies from other countries in order to catch-up with the rest. Nevertheless, in their race to catch-up, the productivity deficit of late industrialising countries still constitutes a huge problem. Another challenge faced by late industrialising economies constitutes upgrading, since the access to foreign technologies becomes more and more difficult as they move up the value chain (Amsden, 1995).

After WWII, mainly Latin American and South-East Asian countries began to industrialise without the competitive advantages of new products and processes, but with a seemingly unlimited supply of cheap labour (compared to advanced economies) and similarly important, the active interventions of government. According to historian Gerschenkron (1962), the role of the government augments the later a country starts to industrialise and the larger its technological gap is, that divides the country from other industrialised nations. German and American industries, for example, overtook the British outriders of the Industrial Revolution grounded on new technologies, products and processes and organisational skills. Thus, government interventions during the Second Industrial revolution were limited to infant industry protection.

However, in the case of East Asian economies the role of the government was far more intrusive in order to promote development and enhance the country's productivity. Even though the order of industrial growth among latecomers in relationship to an increase in governmental action does not confirm Gershenkron's thesis, it can be generally assumed, that the greater the assets a country possesses, the less governmental intervention is necessary.

As the pioneer of the late-industrialising paradigm Japan inspired governments of its neighbouring countries to promote a systematic accumulation of capital and augmentation of productivity instead of pure rent seeking and wealth redistribution. Consequently, governments established state led development agencies to guide and support the creation of new industries through beneficiary policies and financial aid and channelized further investments into education and infrastructure.

Although the way of financing growth in East Asia (through FDI, foreign loans etc.) varied, governments tended to discipline labour and capital by just subsidising firms meeting established export targets. In addition, governments protected the domestic market from foreign entrants, thus imposing an import substitution policy. As a result, trade became a powerful growth engine. However, with rising trade surpluses and the need for more sophisticated technologies, governments increasingly had to rely on FDI from the 1980s onwards. In this phase, the government intervention shifted towards the promotion of knowledge and technology including the liberalization of entry conditions for foreign firms (Amsden, 1995).

All in all, the process of industrial development takes place in disequilibrium, where late industrialising countries try to catch-up through industrial upgrading with an emphasis on manufacturing (Mathews, 2006a). In this context, Akamatsu's (1962) 'flying geese' paradigm helps to explain the patterns of the upgrading process. The paradigm, which was developed to describe economic development in South East Asia, postulates that the catch-up process of countries follows a regional hierarchy with a continuous relocation of industries from more advanced to developing countries due to the shift in competitive advantages. With Japan being the lead goose, followed by the tiger states Korea, Taiwan, Singapore, Hong Kong and nowadays emerging economies such as China, Thailand, Vietnam and India. Being in the rear position, China for example, is currently resuming manufacturing activities that were previously undertaken by Taiwan and Korea (Mathews, 2006a).

II.2.1. Korea's late industrialisation

The industrialisation of Korea followed similar patterns as described in the previous section, with the government intervening on the micro-and macro-level in order to promote the industrial development.

With the control of the banking sector, the government reigned over the direction of capital flows in various industries. Loans, long-term investment credits, tax concessions and other fiscal incentives were granted on the basis of the firms' export performance and favouritism of certain industries and firms, which led to the onset of strong industrial conglomerates, the so-called *chaebols* that were able to enter new markets and a wide array of industries (Amsden, 1995; Choe & Pattnaik, 2007; Kim, 1997; Mathews, 1998; Wang, 2007). LG, Samsung, Hyundai and alike, for example, were involved in consumer electronics, semiconductors, shipbuilding, construction and trading services. And by 1996, the 30 largest conglomerates were responsible for 40 per cent of the country's total output (Chang & Hong, 2000). The so-called 'Korea Inc.' played (and still plays) a very important role in Korean economy, where entrepreneurs and businesses operate under a comprehensive system of government guidance. Frequently, government also intervened in firm affairs and manipulated the industries' structure of competition (Green, 1992).

In addition to the developmentally oriented fiscal policies and due to the lack of natural resources, the Korean government also invested heavily in infrastructure, especially education, thereby creating a physical and administrative framework for industrial promotion (Kim, 1997). It also encouraged the creation of knowledge and technological capabilities through the establishment of industrial R&D institutes since 1966 in areas such as electronics, telecommunications, machinery and shipbuilding at a time when the private sector did not have the scope of resources to invest in R&D (Wang, 2007; Yang, Kim, & Han, 2006). Until the late 1980s, most Korean firms were engaged in OEM⁸ manufacturing, when many Korean export industries skipped the Original Design Manufacturing stage shifting directly to Original Brand Manufacturing. Although goods were still standardized, of low quality and cheap, Korean firms understood the importance of differentiation and quality improvement (Lee, 2005). Moreover, the *chaebols* gradually replaced the state as the major engine for the accumulation of knowledge (Kim, 1997).

⁸ An **O**riginal **E**quipment **M**anufacturer is contracted to produce a good to the exact specifications of a buyer that in turn markets the product under its own brand name. OEM allows the manufacturer to focus on the production while neglecting marketing and distribution skills (Hobday, 1998).

However, with the opening of Korea for foreign investments in the late 80s, the *chaebols* financed their aggressive growth through foreign loans and cross-divisional debt guarantees among affiliates, in favour of scale and reckless diversification rather than productivity and efficiency. But along with the liberalization of the Korean markets, the highly-debt burdened *chaebols* could not rely on the protective hand of the government any longer. This ignorant stance took revenge on the conglomerates when the Asian financial crisis struck in 1997, putting the majority of *chaebols* into financial distress and in some cases even on the edge of bankruptcy. Yet, the highly debt-burdened conglomerates often criticized for their habits of crony capitalism and questionable corporate governance eventually became too powerful and too large to let them fail (Choe & Pattnaik, 2007; *Economist*, 2010a; Wang, 2007). What followed where a long needed restructuring of *chaebol* practices imposed by the International Monetary Fund and the Korean government. In brief, these reforms required *chaebols* to divest unprofitable businesses, promote partnerships with small and medium-sized Korean enterprises and increase their transparency of their murky ownership and finance structures by producing consolidated balance sheets according to international accounting practices (Mathews, 1998). Given the refocus on their most profitable businesses, the increased transparency and the improved corporate governance, the Korean *chaebols* nowadays are prospering again (*Economist*, 2010a).

In spite of this, Wang notes (2007) that at this stage of the globalisation the Korean development model would hardly be viable anymore, as such heavy state interventions and subsidies would violate the regulations of free trade.

Last but not least, regardless of state led development, another particular factor often cited to have significantly contributed to the nation's rise, is the hard working Korean workforce. Despite common labour oppressions by the government and the conditioning of children already during school days, this Korean hard-working morale is partially derived from neo-Confucian values and traits such as tenacity and obedience, as well as the historical experience of deprivation during the Japanese occupation, that furthermore nourished a 'beat Japan' mind-set (Kim, 1997).

II.2.2. The emergence of the Korean automobile industry

While Germany is considered the birthplace of the automobile with the Germans being already involved in the mass-production of cars in the 1930s (Business Monitor International [BMI], 2010), the automobile production in South Korea did not exist until 1962 when the Automobile Industry Protection Law was implemented. In 1974, the

Long-Term Automobile Production Plan promoted the development of the industry through an import substitution policy. The industry retained its focus on the domestic market until the late 1970s, but with the espousal of the second oil shock in 1980 coupled with the on-going political restlessness due to the assassination of former president Park Chung Hee in 1979, domestic demand collapsed putting the Korean car manufacturers under tremendous financial distress. The government's response was to extend the production to the point of economies-of-scale, hence shifting the focus from import substitution to export promotion. Yet, the government still maintained import restrictions in order to build up volume and enhance the domestic learning process while import liberalization did not occur until 1988. Moreover, similar to the Chinese policy, the governments strictly controlled foreign equity and just allowed foreign investments where assistance was essential to overcome the technological deficiencies faced. In 1982 Hyundai, for example, went into an agreement with Mitsubishi for engines, power trains and transmissions. The same year, Daewoo formed a joint venture with General Motors. Nonetheless, the automobile industry was still under local control, as the car manufacturers tend to finance everything themselves with the support of the government rather than depending on their foreign partners. In general, all government policies were aimed at making the industry more efficient and competitive. In this context, government also tried to manipulate the industrial organisation by reducing the number of competing firms in order to avoid overcapacity. In 1976, for example, the government forced KIA to take over Asia Motors meanwhile excluding the company from the passenger vehicle market. In the same way, it stopped the plans for a joint venture between Samsung and Chrysler. Other instruments used by the state to enhance the competitiveness of the Korean auto producers included subsidised loans, access to foreign currency, licenses to import scarce consumer goods, as well as financial incentives which were tied to the companies' export performances.

Overall, it is unlikely that Korea's automobile industry would have been similarly flourishing without the extensive interventions of the government on the micro-and macro-level. Korean car manufacturers could further profit from synergistic relationships of the very diverse *chaebol* organisation where companies source for resources among their own ranks and adjust prices, as well as cross-subsidise among the diverse businesses. At the same time, the Korean car manufacturers were also fortunate with the external market conditions. In the 1980s Korean car manufacturers profited from the import restriction for Japanese cars in the US. As offerings in the low-end segment were sparse, Hyundai was able to gain a foothold in the American market in

1986. The rise of internationalisation and the increase in global competition made foreign firms also more ready to transfer knowledge to other countries. Lastly, the shift to trading components rather than completely assembled cars, allowed Korean car manufacturers to get certain missing parts they needed to build cars for the international market (Green, 1992).

Nevertheless, with the country's ongoing liberalization in the early 90s and the rapid expansion of production capacity mainly financed through heavy foreign borrowing and the accumulation of debt⁹, the Asian financial crisis in 1997 hit the Korean carmakers hard and led to a complete restructuring of the national automotive landscape. While Hyundai took over the financially distressed KIA Motors, Daewoo Motors acquired Ssangyong to be later absorbed by American General Motors, and Samsung Motors went out of necessity into a partnership with French Renault, thus leaving the Hyundai-KIA Automotive Group as the only autonomous Korean carmaker after all (Ravenhill, 2001; Ward, 2002).

II.2.3. Implications for latecomer strategies

Late industrialisation of countries in most cases also implies the late entry into industries. Although many researchers have studied the advantages and disadvantages of late entrant or late follower strategies of firms (e.g. Gal-Or, 1985; Lieberman & Montgomery, 1998; Bryman, 1997), the same perspective cannot be obtained for firms from late industrialising countries. As Mathews (2002) notes, the latecomer firm is not a 'late entrant' by choice as a matter of strategy rather "*it is condemned to be a follower by history*" (Mathews, 2002, p. 471). Other peculiarities of latecomer firms are their lack of resources and the primary 'strategic intent' (see Hamel & Prahalad, 2005) to quickly catch up with the established competitors in the industry. While forerunner firms maintain certain competitive advantages in terms of brands, reputation, technological skills etc., the only competitive advantage of latecomers usually lies in lower costs due to a cheap labour supply (Hobday, 1998; Mathews, 2002). However, as labour costs rise with the economic development of countries through enhanced productivity and the advancement of industries, firms have to overcome their severe resource constraints in order to stay competitive (Green, 1992; Mathews, 2002).

Given the lack of resources and involvement in R&D, learning from linkages with advanced firms and leveraging resources from such linkages constitutes one of the

⁹ The average debt ration for Korean car manufacturers by 1996 amounted to tremendous 530 per cent with the most extreme example being Ssyangyong with a debt ratio of 10,496 per cent (Ravenhill, 2001)

main strategies for latecomer firms to surmount their resource weaknesses. By integrating themselves into existing value chains of advanced firms and MNCs¹⁰ in the form of joint ventures, licenses, contract manufacturing services or other kinds of business agreements, latecomer firms can leverage the resources of their advanced collaborating partners and may gain new knowledge, technological and organisational skills, as well as market access (Hobday, 1998; Mathews, 2002). Indeed, latecomer firms may even be capable of accelerating their uptake by tapping into already advanced technologies, thus skipping some stages of the traditional technological trajectory (Lee, 2005; Mathews, 2006a). However, this also depends on the firms 'absorptive capacity' (i.e. how well a firm can absorb and integrate the leveraged resources or skills such as product and process technologies, tacit and explicit knowledge) (see Cohen & Levinthal, 1990) and their combinative capabilities (see Kogut & Zander, 1992) meaning not just to absorb the resources, but also to further exploit their unexplored potential (Mathews, 2002).

What kind of resources latecomer firms leverage, depends on their competitive strategy but even more on their accessibility and feasibility. According to Mathews (2002), the types of resources latecomer firms leverage can be characterised as the least rare because firms will try to protect their rare and valuable resources from competing firms, the most imitable (e.g. through reverse engineering) and most transferable. In any case, latecomer firms have to create linkage strategies that complement or match the incumbents' needs in order to leverage and learn through spillovers or externalities. On the other hand, globalisation shapes a favourable environment for latecomer firms' quest of catching-up since it multiplies inter-firm linkages and networks (Mathews, 2002). Conversely, supporters of the late industrialisation paradigm argue that access to new technologies and resources becomes increasingly difficult along the industrialisation progress of industries (Amsden, 1995).

In conclusion, *"latecomer firms go through several iterations of this linkage and leverage process, each time enhancing their capabilities and technological competencies, in a process best described as learning"* (Mathews, 2002, p. 468). Often this process leads firms to pass through the stages from simple OEM manufacturing, to Original Design Manufacturing¹¹ and lastly to fully developed Original Brand Manufacturers, with the complexity of activities continuously increasing along the development curve (see figure 5). In this sense, latecoming firms move backwards

¹⁰ Multinational Corporation

¹¹An Original Design Manufacturer produces partly self-developed and designed goods for a client that will sell the product under its own brand name (Hobday, 1998).

along the normal stages of the product life cycle as they start with the mere assembly of mature products passing through incremental production changes and lastly engage in their own R&D activities. At the same time, the growth and development of latecomer firms is usually based on exports closely linked to import substitution policies established by governments (Hobday, 1995; 1998; Mathews, 2006a).

Figure 5: Latecomer firms – export-led learning from behind the technology frontier

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(Source: Hobday, 1995, p. 1184)

By offering OEM or ODM services to foreign buyers, latecomers can overcome the entry barriers in advanced markets and insert themselves into the global value chain of foreign firms, meanwhile assimilating technologies and enabling economies of scale. However, this strategy impedes the creation of a strong brand needed to compete in the

global market place (Hobday, 1998). Once late coming firms have established themselves as OBM manufacturers they need to acquire supporting competences such as marketing and sales skills vis-à-vis customers (Fleury & Leme Fleury, 2009).

Despite organisational efforts to leverage resources, capabilities and knowledge from linkages with foreign firms, late coming firms also highly depend on the institutional support provided by governments, development agencies and networks as they seek to compensate their shortcomings in technology and market sophistication (Lu, et al., 2008; Mathews, 2006a; Wang, 2007). Nonetheless, Wang (2006) points out that the institutional reliance can take on different forms. While Korean state interventions, for example, worked in favour of a centralised industrial structure with a few large and highly indebted *chaebols* centring their catch-up strategies on scale, a decentralised industrial structure dominated by SMEs¹² forced Taiwanese firms, for example, to rely more on trustworthy personal networks and public R&D institutes to induce technological learning and upgrading.

The example of Korean *chaebols* or Japanese *keiretsus* furthermore highlights the proclivity of late coming firms to diversify into various businesses, as it enables firms to exploit scale, as well as network and scope economies meanwhile facilitating the monitoring process for governments (Abegaz, 2005). Khanna and Palepu (1997) and Lee and Lee (2007) furthermore state that diversification allows firms to overcome market imperfections through the creation of internal capital and labour pools and to exploit synergies through the creation of credible group brands later on.

Another important component in the catch-up process for latecoming firms constitutes accelerated internationalisation. With domestic markets often too small to offer real growth or scale opportunities and the primal urge to leverage the global value chains of foreign firms, latecomers are forced to internationalise much faster than their predecessors (Cho, Kim, & Rhee, 1998; Mathews, 2006b). According to Child and Rodrigues (2005), outward FDI¹³ can be a chance to narrow the gap between leading and latecoming firms through the acquisition of appropriate assets and resources. They furthermore add, that in some cases governmental growth policies with the promotion and financial support of so-called ‘national champions’ may drive internationalisation of latecoming firms. Put differently, latecomers internationalisation is not based on technological innovation, but on organisational and strategic innovation that is adapted to their specific circumstances (Mathews, 2006b).

¹² Small and Medium Enterprises

¹³ Foreign Direct Investment

Overall, overcoming the latecomer's disadvantages and converting them into competitive advantages constitutes one of the main strategic goals of latecomer firms, while the ultimate strategic intent is to become a leading player in the industry shifting from being an imitator to an innovator (Hamel & Prahalad, 2005; Kim, 1997; Mathews, 2002).

However, Forbes and Wield (2000) point out that the technological frontier is moving at different paces in industries. Thus, in order to become an innovator, latecoming firms have to move even faster than its competitors. Whether a latecoming firm is successful or not, not least depends on its organisational leadership. Empirical evidence shows that successful catch-up usually involves other factors such as long-term vision, bold decision making, extreme risk-taking, speed, tenacity and trial and error learning as firms seek to systematically exploit foreign channels to upgrade their technology (Hobday, 1998).

III. ANALYTICAL TOOLS FOR THE ASSESSMENT OF COMPETITIVENESS

The review of the literature revealed that the analysis of competitiveness of an organisational entity requires the consideration of external factors, which are beyond firms direct influence, as well as the firm's internal strengths and weaknesses. Two common tools mainly used to perform such analyses are the STEEP (or PEST)¹⁴ analysis for macro-environmental factors in combination with the value chain analysis, which are presented in further detail in the following (Bensoussan & Fleisher, 2009; Grant, 2008).

III.1. Macro-environmental analysis

Since organisations do not operate in a vacuum, various environmental conditions have a great impact on firms' resources, capabilities and actions. Similar to the traditional SWOT analysis, the STEEP analysis provides a helpful tool for identifying, filtering and systematically assessing the most relevant environmental changes and trends that will likely have the greatest impact on the competitive position of an organisational entity. The most important questions to raise thereby are, which trends suggest a change or redefinition of the evolutionary path of the organisation and what kind of impact will

¹⁴ The PEST analysis is equivalent to the STEEP analysis, but limits the analysis to political, economical, social and technological factors. With the inclusion of environmental factors, the STEEP analysis is more comprehensive and suitable for the purposes of this dissertation given the current trends towards sustainability and the legislative pressures in this area.

these trends have on the organisation; either positive, negative or neutral. Analysts are thus forced to look beyond just symptoms in order to understand the underlying causes, future developments and implications for the organisation.

The key goal of the analysis constitutes the identification of competitive implications for organisations in order to match the firms' resources and capabilities positively with the environmental conditions.

According to the STEEP analysis, the main criteria for the environmental analysis can be categorised into:

- Social environment (e.g. value systems, income distribution, labour unions etc.)
- Technological environment (e.g. pace of technological change, patent, clusters, universities, pace of product and process development etc.)
- Economic environment (e.g. exchange and interest rates, leveraging and funding etc.)
- Ecological environment (e.g. environmental regulations etc.)
- Political/legal environment (e.g. laws, governmental regulations, intellectual property rights protection, public opinion etc.)

These factors are not mutually exclusive and the lines between those categories can blend into each other. The ecological environment, for example, can be influenced through the political environment in the form of environmental regulations set by governments. Similarly, environmental regulations can have deep impacts on the technological environment with car manufacturers, for example, having to meet new emission standards through the development of new environmental-friendly power trains. Given these interrelations among categories, cross-functional teams of analysts may perform an analysis of environmental conditions more effectively.

One of the major strengths of the macro-environmental STEEP analysis constitutes the long-term perspective that links expected future developments and trends to the current planning operations, which allows timely responses in order to reap future gains. On the other hand, the same strategic orientation towards the future can be one of its greatest weaknesses, since certain ambiguities and uncertainties cannot be ruled out during the analysis (Bensoussan & Fleisher, 2009)

Combined with the industry structure analysis along Porter's five forces, this technique is nevertheless a helpful tool to detect the most critical success factors for a firm in order to stay competitive in the future.

III.2. Value chain analysis

In order to analyse the competitive position of an organisation, the Value Chain Analysis (VCA) popularized by Michael Porter in 1985, provides a useful analytical tool. According to Porter, every organisation consists of a bundle of value adding activities performed to design, produce, market, distribute and support its product. The way a firm performs and coordinates these interdependent value-adding activities determines its cost position relative to its competitors, as well as the customer value created. Even though firms from the same industries may share similar value chains, it is the differences in firms' value chains that build the sources for competitive advantage. In addition, firms' value chain form a part of a larger industry value system that comprises the value chains of all industry participants from suppliers to final consumers. Through the optimization of firms' vertical linkages with other independent industry participants, firms can create synergies that may also lead to competitive advantage. For example, firms can decrease their technology development costs through conjoint developments with suppliers. Similarly, firms can reduce the number of erroneous products due to faulty inputs, when suppliers implement a zero defect policy implying a quality inspection of the total output.

By disaggregating and linking the overall processes and activities of a firm into strategically relevant value adding activities, the VCA allows a systematic and holistic cost/value analysis of organisations that is superior to the traditional strengths and weaknesses analysis included in a SWOT analysis, as the VCA embeds the industry and external customers into the analysis.

Porter identified nine generic categories of activities, which are classified into primary and supporting activities (see figure 6). While primary activities describe the physical creation up to the transfer of the product to the purchaser, supporting activities are needed along the entire value chain for the fulfilment of the primary activities.

Figure 6: Porter's generic value chain

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(Source: Porter, 1985, p. 37)

The primary activities included in the generic value chain are:

- Inbound logistics (i.e. receiving of inputs, inventory control etc.)
- Operations (i.e. transformation of inputs into end product)
- Outbound logistics (i.e. warehousing, distribution, order fulfilment etc.)
- Marketing & Sales (i.e. pricing, placement, promotion etc.)
- Services (i.e. customer support, maintenance and repair etc.)

The supporting activities of the value chain consist of:

- Technology development (i.e. research and development, process automation etc.)
- Human resource management (i.e. recruitment, training, employee compensation etc.)
- Procurement (i.e. purchasing of raw materials and other inputs)
- Organisational infrastructure (i.e. administration, finances etc.)

Each of those categories can be divided into numerous distinct activities specific to particular industries or firms' strategies (Porter, 1985).

Even though the generic value chain can be applied to almost every organisation, new types of value chains such as virtual value chains and virtual web management evolved with the availability of modern information technologies (Bensoussan & Fleisher, 2009).

The ultimate goal of the VCA consists in the identification of strategies that maximise the customer value while minimising the costs in delivering the value. The difference between the created value and the originated costs is also known as the

margin. By reviewing and reconfiguring their value chains, companies can reduce the overall costs or the costs of single activities along the chain. Amazon, for example, succeeded in slashing down distribution costs by implementing a virtual retailing platform rather than using conventional distribution channels. Another possibility lies in the exploration of differentiation potentials that will increase the profit margin of a firm.

Besides companies' efforts to increase their profit margins, the industry structure determines the share of industry profit of each participant, meaning if the bargaining power of suppliers is high, the suppliers' share is likely to be higher. At the same time, a high bargaining power of buyers will most likely lead to lower profit margins of firms (Porter, 1985).

However, as Stabell and Fjeldstad (1998) note, one of the main challenges of the value chain analysis represents the difficulty to obtain accurate and reliable cost and value data for the analysis due to a mismatch of traditional accounting practices and the needs of the value chain analysis. Moreover, for an effective analysis for diagnosis of competitive advantage not only historical data is needed, but also the projection of trends and comparable data from competitors.

III.3. Application to the global automobile industry

III.3.1. Macro-environmental analysis

Given the necessity to assess the value of firms' internal competitive factors in a market context, this chapter introduces the global automobile industry along with its greatest future challenges and prospects revealing the most important categories for the competitiveness analysis, and thus raising the construct validity of measures (see Chapter IV). Starting with the industry structure analysis, the dissertation proceeds with the STEEP analysis. At this point however, it should be noted that the author refrained from a strictly categorized STEEP analysis due to the intertwining character of categories. Nevertheless, all categories are taken into consideration during the analysis. Beyond that, the analysis on a global level is due to the globally integrated and complex value chains of automobile producers with production, supplier and customer bases spanned around the world (Haugh, Mourougane, & Chatal, 2010).

III.3.1.1. Industry structure

The current structure of the automobile industry is the product of a long process of structural change. It is known for being capital intensive and having a high capital-to-labour ratio. Moreover, most of the countries involved in the automobile production are

highly export dependent. Even though domestic production remains important in many countries, production increasingly shifts towards non-OECD countries in particular Asia, due to a high market saturation in the OECD region, high shipping costs and the growing market opportunities in emerging countries such as: Brazil, Russia, India and China (the so-called BRICs), Eastern Europe and South East Asia. More and more, car manufacturers also outsource parts of their manufacturing processes. Another trend observable in the industry constitutes consolidation through mergers and acquisitions in order to amplify the product portfolio, nurture economies of scale, and reduce excess capacity. All these developments fuelled a complex geography on a global scale, which is often constrained by political and operational matters. Despite the complexity of business operations, the industry is still highly concentrated in clusters within countries (Grant, 2008; Haugh, et al., 2010).

Given the prevalence of a high brand loyalty in the industry, the buyer power of dealers and distributors can be described as moderate. Moreover, franchised dealerships and the automakers forward integration of sales channels further reduces the bargaining power of buyers.

On the other hand, automobile producers are highly reliant on supplier inputs such as raw materials, components, energy, freight and transportation; leaving suppliers with a strong bargaining position. However, carmakers rarely use single suppliers thus reducing the bargaining power of their suppliers.

Due to the high capital intensity and the degree of intellectual property required to enter the industry, the threat of new entries is relatively weak. The enforcement of tighter safety and environmental regulations, coupled with the recent decline of the industry value, further decrease the appeal of the industry for new entrants. Nevertheless, more and more car manufacturers from late industrialising countries are finding their way into the industry.

The main substitution threats for the industry represent used cars and the growing environmental awareness of consumers, which may entice people to use other vehicles of transport such as public busses or bikes.

Several multinational companies dominate the global industry with Toyota, Ford and Volkswagen being the leading players. In 2009 Toyota held 10.9 per cent of the global market share in terms of volume, while Volkswagen and Ford held 7.2 and 9.2 per cent, respectively (Datamonitor, 2010a). In addition, the upstreaming competition from emerging markets is expected to further intensify the rivalry in the industry (European Communities Commission, 2009b). Therefore, rivalry in the industry is

fierce with some producers trying to negate their sole reliance on car sales by diversifying into other sectors. Honda, for example, also produces water craft and jet engines amongst others (Datamonitor, 2010a).

III.3.1.2. STEEP analysis

With the recent economic downturn initiated by the U.S. subprime crisis in 2007 and the following collapse of financial markets, the automobile industry worldwide experienced one of its most severe crises in its entire history. As a result, demand dropped sharply stressing the existing overcapacity problems and leading many companies into financial distress or even insolvency (VDA, 2010a; Haugh, et al., 2010). In some cases like Detroit's General Motors and Chrysler LLC, companies were only able to secure their existence through governmental bailouts (Terlep & Bennett, 2010). In addition governments in many Western countries introduced temporary car-scrapping schemes and incentives in an attempt to boost sales and cushion the economic downturn. While these interventions proved successful in the short-term, they brought future purchases forward to the present likely causing a 'payback effect' with the climb in sales being reversed as soon as the incentive schemes end.

In combination with economic uncertainty, tightened environmental regulations for carbon dioxide emissions and fuel-efficiency standards, the scrappage allowances also led to a dramatic shift in consumer demand favouring smaller, inexpensive and fuel-efficient cars (VDA, 2010a; Haugh, et al., 2010). Given the appetite of developing and emerging countries for low cost cars, as well as the increasing environmental awareness of customers, the lack of cheap lease financing, higher fuel and auto taxes and demographic shifts with elder people preferring cheaper small vehicles in developed countries; the demand for small and fuel efficient cars is likely to last (*Economist*, 2007a, 2009b, 2009e; VDA, 2010a). One major problem of small cars however constitute their lower profit margins which automakers tend to compensate through superior profit margins of larger premium vehicles (Dolan, 2009; *Economist*, 2009e).

Despite the demand shift towards small and low cost cars, the individualisation of customer preferences is also expected to rise due to differences in local tastes and technological requirements in various regions calling for adaptation and differentiation of products and leading to shorter product life cycles. In Western Europe, for example, over 53 per cent of registered new cars 2008 were equipped with diesel power trains while US customers still prefer gasoline engines (VDA, Flint, 2008; 2010a). Serving the

mobility needs of the majority of customers in the emerging markets like India and China will furthermore require cheaper and less sophisticated cars than in Western markets (Edmondson, Rowley, Lakshman, Welch, & Roberts, 2007).

Other than that, a new value-for-money mantra is evolving among customers. Accordingly, customers expect cars not only to be cheap but also of high quality (VDA, 2010a). In this context, the upcoming competition from low cost countries like China, India and South Korea may constitute a major threat for the established players (Bremner, Kerwin, Roberts, & Edmondson, 2005; European Communities Commission, 2009b).

Macroeconomic threats for carmakers constitute a high exchange rate volatility, as well as protectionist measures of countries, since most of the car manufacturers are still highly dependent on exports (Chaffin, 2009; PricewaterhouseCoopers, 2010a). First protectionist actions were already taken in Argentina, Brazil and Russia with the former requiring new import licenses from European car manufacturers and the latter raising their import duties for European vehicles. Thus one of the main aims of the European Union consists in the promotion of free trade and fair competition (European Communities Commission, 2009a, 2009b)

Moreover, raw material prices, in particular steel and aluminium, are expected to rise over the next couple of years, which will elevate the components and production costs of automobile manufacturers and their suppliers (VDA, 2010a).

The obligation to meet the tightened environmental regulations in the US, Europe and China will put further pressure on automobile producers. In 2008, China for example, introduced a 'green tax', which imposes additional sales taxes on vehicles with engines larger than three litres. In the European Union a new norm (Euro-6) was passed in 2008 restricting the CO₂ emissions of new cars to 130 grams per kilometre by 2015 compared to a current average of 160 grams per km with the plan to further reduce the emission allowance to 105 grams per km by 2020. These regulations imply an improved mileage of future cars to 58 miles per gallon with diesel engines and 52 miles per gallon with gasoline-powered engines by 2015. Likewise, US president Barack Obama signalled his disposition for more stringent regulations in the US with his solicitation to the Environmental Protection Agency to rethink its refusal of California's emission standards, which are more stringent than the federal restrictions (KPMG, 2009a). In May 2009, the administration of Barack Obama also enforced a new deadline for meeting the new requirements of the Corporate Average Fuel Economy (CAFÉ) from 2020 to 2016. This legislation foresees an increase of mileage for passenger cars to

39 miles per gallon by 2016 (Foster & Klier, 2009). All these measures inevitably impose additional costs on car producers and lower their profitability. According to estimates of IHS Global Insight, president Obama's green initiatives could add up to 10,000 US dollars to the price of a car (KPMG, 2009a). Moreover, failure to meet those standards implies expensive penalties imposed by governments (European Automobile Manufacturers Association [ACEA], 2009).

On the contrary, these legislations can prove to be a sales opportunity for carmakers as they promote the renewal of older vehicles with new fuel-efficient and environmental friendly cars thereby reducing the substitutional threat of used cars to new car sales (*Datamonitor*, 2010a; KPMG, 2009a). Most importantly, they promote innovation, which is considered to be key to competitiveness (e.g. Triebswetter & Wackerbauer, 2008)¹⁵. Automobile manufacturers around the globe already work with full speed on the eco-friendliness and fuel-efficiency of cars running on fossil fuels, as well as hybrids, electric cars, fuel cell technologies and other renewable alternative combustibles (Schweinsberg & Winter, 2008; Winter, 2009).

Nevertheless, the development of new technologies and products requires immense investments in R&D and production plants, which might be hindered by the current credit crunch induced by the recession. The lack of capital also deeply impacts the carmakers investments in prospering emerging markets and thus their growth opportunities in these regions (VDA, 2010a). The imperatives to develop new technologies and reduce debt and bankruptcy risks are also seen as the main drivers for an increase in mergers and acquisitions in the industry (PricewaterhouseCoopers, 2010b).

Likewise, consumers are not spared of high capital costs. With the decreased availability of consumer credit, consumers may likely be more reluctant to purchase new vehicles (*Economist*, 2009e; VDA, 2010a).

Without any doubt the recession and current developments in the industry confronted automobile producers and their suppliers with new challenges that imply even fiercer competition and a restructuring of the sector (VDA, 2010a; Haugh, et al., 2010).

However, recent forecasts indicate an end of the downtrend by 2010 and a rather positive outlook for the future with emerging economies being the greatest catalyst for

¹⁵ The empirical study for German automotive companies in the cluster around Munich conducted by Triebswetter & Wackerbauer (2008) supports Porters assumptions of environmental legislation leading to innovation. The results yielded thereby showed that innovation driven by regulatory pressures produces similar competitiveness impacts as "voluntary" innovations.

growth since car ownership is still relatively low in these countries (Datamonitor, 2010a). In comparison to 2009 the Chinese market volume, for example, is expected to rise by 92.6 per cent from seven million to a total volume of 13.5 million units by 2014 equalling a total value of USD 177.6 billion (Datamonitor, 2009a). The Indian market promises to be not less attractive during the same period with an expected growth to two million vehicles and a total value of USD 41.6 billion meaning an increase of 60.4 per cent in volume and 24.8 per cent in value (Datamonitor, 2009b). In contrast, experts expect markets in Western Europe, Japan and the US to rather stagnate or slightly decline. According to Datamonitor, the industry will grow at a compounded annual growth rate of 11.5 per cent from 2009 to 2014 reaching a total value of approximately USD 2.5 trillion in comparison to a value of USD 1.5 trillion in 2009 representing an increase of 72 per cent. The market volume is expected to increase from 65 million vehicles to 96.5 million for the same period reflecting an increase of almost 50 per cent at a compounded annual growth rate of 8.2 per cent (Datamonitor, 2010a).

III.3.2 Derivation of critical factors for future competitiveness

Given the interrelation between external environmental and internal organisational factors (see Chapter II.1.2.4), critical success factors for the internal analysis of companies are derived from the preceding analysis of the external global environment. The critical success factor approach was coined by Daniel (1961) and later Rockart (1979) with the main aim to curtail the information overload for managers by reducing information to the most important criteria for a successful strategy development. *“Critical Success factors thus are, for any business, the limited number of areas in which results, if they are satisfactory, will ensure successful competitive performance for the organization”* (Rockart, 1979, p. 85). Nonetheless, it would be wrong to deny the importance of other factors, but given the limited scope of this dissertation, the analysis is confined to the most pivotal success factors in the automobile industry. Thus, the most crucial factors and capabilities identified are:

- a) *Technological innovation and commercialisation*; meeting new environmental standards and reducing the amount of resources needed
- b) *New product development* meeting changing consumer preferences while improving affordability and quality
- c) *Cost competitiveness and cost efficiencies* along the whole value chain due to higher costs imposed on carmakers
- d) Capture and maintain *customer proximity and loyalty*

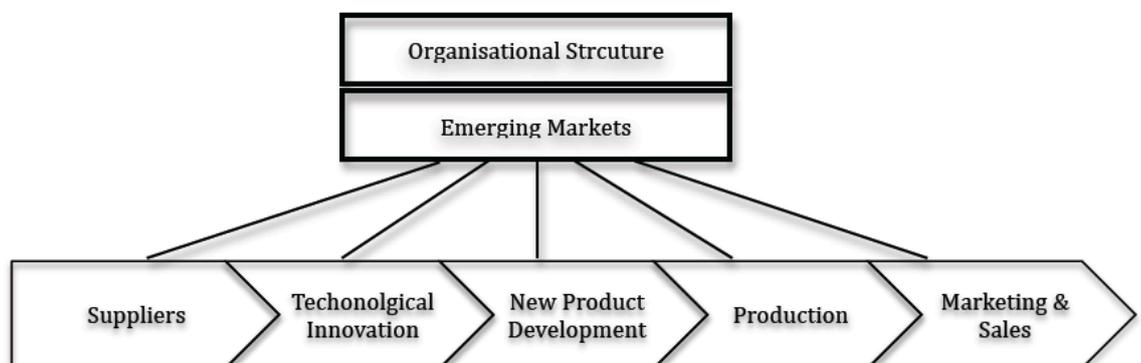
- e) Focus on growth potential in *emerging markets*
- f) *Financial capabilities* and access to capital and funding contingently requiring organisational restructuring for example through mergers & acquisitions

These factors are congruent with the major concerns stated by industry experts and executives in the latest surveys on the global automobile industry conducted by two renowned consultancy firms KPMG (2009b) and PricewaterhouseCoopers (2010a).

In the ensuing case studies these factors will be analysed in line with the industrial organisation, resource-based and institution-based view (see Chapter II.1.2) along the firm’s value chains with the aim to contrast the findings for both firms in the discussion section of this dissertation. Particularly, differences not least arising from the late entry of Korean car manufacturers will constitute the main focus of the cross-case analysis.

In order to facilitate the analysis according to the relevant identified factors, the generic value chain is amended to the purposes of this dissertation (see figure 7) with firm’s financial capabilities being included in the ‘organizational structure’ block, the negligence of outbound logistics and human resource management, and the aggregation of procurement and inbound logistics into the ‘suppliers’ block. Similar to cost competitiveness, which forms part of the analysis in all activities of the value chain, the focus on emerging markets will be included in each building block of the value chain as the servicing of these markets confronts carmakers with new challenges across the whole value chain.

Figure 7: An analytical framework for the internal analysis - the value chain amended



IV. METHODOLOGY

In this dissertation, in-depth case studies are used to depict the competitiveness of the car manufacturers from the said countries.

Case study research is generally considered as an inductive method¹⁶ for theory building where the evidence collected according to theoretical propositions leads to a generalisation of results (Bryman & Bell, 2007). Case study research can be based either on a single or multiple cases (also often referred to as comparative case studies) and can include various levels of analysis (Yin, 2003).

According to Yin (2003), the case study is the preferred method to study contemporary phenomena in a real-life context where the investigator has no control about relevant behaviours and where the boundaries between phenomena and context are not obvious. Case studies thereby test assumptions by directly relating them to phenomena as they unfold in practice (Flyvbjerg, 2006). Similarly, Eisenhardt (1989) notes that the main aim of the case study lies in the “*understanding of the dynamics present within a single setting*” (Eisenhardt, 1989, p. 534).

Case studies allow the investigation of broad and complex research topics with a large amount of variables of interest, which often require an analysis of multiple sources of evidence. The coalescence of the data in a triangulating¹⁷ fashion is assumed to increase the validity of results.

Against the common belief of case study research being a qualitative research approach, data can be either quantitative, qualitative or even a mix of the two (Yin, 2003). Jick (1979), for example, emphasises that the combination of quantitative and qualitative data can be more effective as the strengths of one method can counter-balance weaknesses of the other. In this context, quantitative data can support the generalisability of qualitative findings and detain researchers from following biased and misguided perceptions. Qualitative data, on the other hand, can provide deeper insights and clarity about relationships among data and lead to theoretical propositions that can be tested by quantitative methods. However, despite some quantitative performance measures, mostly qualitative data from documents and archival records such as annual reports, press releases, consultancy reports and so forth, will be considered in this dissertation. A qualitative approach seems more feasible for this study due to the

¹⁶ Although case studies tend to be thought of as an inductive research approach, it can be also used in a deductive manner for theory testing (Bryman & Bell, 2007).

¹⁷ *Triangulation* describes “*the combination of methodologies in the study of the same phenomenon*” (Denzin, 1978, p. 291).

importance of intangible resources and capabilities, the market context-dependence of firms' internal competitiveness factors, and the particular interest in reasons behind existent differences in the competitiveness of the two cases. Additionally, documentary sources are advantageous in their stability (can be reviewed), exactitude with references, public availability, and their broad coverage over an extended time period. Nonetheless, certain information processing bias in the selectivity and reporting of data or results cannot be ruled out completely (see Yin, 2003, p. 86ff.).

In the literature several typologies for case studies have been developed. While Yin (2003) distinguishes between exploratory (no hypothesis beforehand), explanatory (causal studies) and descriptive cases (describing; theory description beforehand necessary); Stake (1995) differentiates between three types of case studies:

- *Intrinsic case study* aims at studying a unique phenomenon without the attempt to generalise the findings
- *Instrumental case study* aims at providing insight into or revising a general phenomena by using a typical case
- *Collective case study* where several cases are used to study a general phenomena

In the case study analyses of this dissertation, two instrumental cases are used in order to describe the differences in competitiveness among late coming automobile producers from South Korea and their early entrant counterparts from Germany in an exploratory approach.

The common rationale of conducting multiple-case studies lies in the replication logic¹⁸ that strengthens the generalisability of results and hence the generation of theories (Eisenhardt, 1989; Yin, 2003). If the rationale for a multiple-case design lies in contrasting different conditions for cases (as it is the case in this dissertation with latecomer versus early entrant), Yin (2003) notes that still at least two cases for each side would be desirable in order to allow for replication logic. However, due to time constraints and the limited amplitude of this dissertation this study will be confined to the investigation and cross-case comparison of the two largest and most important national automobile producers of both countries – namely the Hyundai-KIA Automotive Group and the Volkswagen Group. The common procedure for such multiple-case designs consists in the individual in-depth analysis of each single case followed by an analysis across the cases (Yin, 2003).

¹⁸ Replication refers to either the literal replication of results in multiple cases or the theoretical replication, where contrasting results are found, but for predictable reasons (Yin, 2003, p. 47).

The before mentioned generalisability of results constitutes one of the main controversies in case study research. However, Flyvbjerg (2006) argues that the generalisation potential of cases can be increased through the strategic selection of cases based on the expectations about their information content. Yin (2003) furthermore adds that the main aim of the case study lies in the analytical generalisation (i.e. to expand and generalise theories), rather than the statistical generalisation (i.e. enumerating frequencies). In addition, researchers highlight the importance of developing concepts for the case aspects studied in order to produce generalisable results (Punch, 2005).

Other common criticisms towards case studies include the lack of rigor of case study research, with scholars often complaining about the lack of systematic procedures, equivocal evidence, results that are influenced by biased views of researchers and inexhaustible, unreadable documents. To prevent these shortcomings, Yin (2003) emphasises the importance of a carefully developed, systematic case study design, which allows an understanding of every single step of the analysis following the theoretical propositions of the study. He furthermore addresses the common concerns about the construct validity (i.e. correct operational measures for the concepts studied), external validity (i.e. deals with the generalisation potential of case studies) and reliability (i.e. possibility to replicate operations and results) of case study designs and recommends several tactics to enhance the quality of the study. Construct validity, for example can be increased through the consideration of multiple sources of evidence and the establishment of chains of evidence. Documenting the operational steps and eliminating possible bias on the other hand raises reliability. Despite the criticisms, Flyvbjerg (2006) advocates the case study research as the appropriate research approach when depth instead of breadth is the focal point of the study.

V. CASE STUDY ANALYSES

V.1. Case one: Hyundai-KIA Automotive Group

V.1.1. Company overview

Founded in 1967 the Hyundai Motor Company started off as an OEM manufacturer for Ford. In 1976 the company launched the first Korean car in the domestic market with the ‘Pony’. Although most of the components were sourced from abroad, the car was a domestic success and led the foundation for the company’s dominant position in the domestic market until present. In 1987, Hyundai exported its first model, the ‘Excel’, to the US market and by 1991 the company passed into

technological independence with the development of its first proprietary gasoline engine and transmission. After the Asian financial crisis in 1997, Hyundai acquired a major stake in KIA Motors forming the Hyundai-KIA Automotive Group (hereafter HKAG) in 1998 (Hyundai Motor Company, 2009a). Nevertheless, besides sharing R&D and production facilities, the HKAG insists on clearly separating these two brands, with KIA targeting younger and active consumers with a strong focus on design (Hyundai Motor Company, 2009g; KIA Motors, 2010a).

Nowadays, HKAG consists of a financial division that offers customer credits and leasing possibilities and a non-financial automotive division including several subsidiaries with suppliers like Hyundai Steel, Hyundai Rotem and Hyundai Mobis amongst others (Hyundai Motor Company, 2009a). With its headquarters in Seoul, the HKAG altogether employs over 120,000 employees worldwide and has operations in more than 15 countries including the US, Japan, Australia, China, Russia, India, Turkey, Hungary, Poland, the Czech Republic, UK, Norway, Germany and Slovakia. Its market presence spans over 196 countries with more than 6,000 dealers (Hyundai Motor Company, n.d.). In 2009, the company expanded their global market share to 7,8 per cent with Hyundai holding 5.2 per cent up from 4.3 per cent in 2008 (Hyundai Motor Company, 2010n) and KIA 2,6 per cent in comparison to 2,1 per cent in the previous year, respectively. At the same time, the HKAG strongly dominates the domestic market with a combined market share of more than 75 per cent¹⁹ in 2009 (KIA Motors, 2010a).

In 2009, the HKAG sold more than 4.75 million vehicles worldwide and overtook Ford as the fourth largest automobile producer in the world in terms of passenger car output. The company's main export markets hereby constitute the US, Western Europe, China and India (Hyundai Motor Company, 2010n; Song & Simon, 2009).

HKAG's product range encompasses all segments from small compact to large/mid-sized sedans, SUVs²⁰ and more recently the premium and luxury segment with the introduction of the Hyundai Genesis and the Equus. Nevertheless, the main focus of both brands remains on the small to mid-sized range (Hyundai Motor Company, 2009a; KIA Motors, 2010a).

In 2008, the HKAG generated net revenues of 79,736 billion Korean Won (approximately 66 million USD) (Hyundai Motor Company, 2009a).

¹⁹ Hyundai's market share amounted to 47.7 per cent, while KIA's market share added up to 28.2 per cent in 2009.

²⁰ Sports Utility Vehicle

V.1.2. *Excursion: Hyundai's catch-up*

Being a latecomer, it took Hyundai around 30 years to catch-up with its competitors from the US, Europe and Japan. The company's catch –up process can be thereby divided into four phases: the mastery of production capabilities, local content production, export orientation and technological independence, which will be described in further detail in the following.

Starting its operations from scratch with no supporting industries around in 1967, the company recruited outside engineers and built task forces in order to increase its knowledge in automobile manufacturing. By 1968 it went into an OEM manufacturing agreement with Ford, which induced the first transfer of explicit knowledge to the company. At this stage, the company's main focus constituted the mastery of production capabilities in an attempt to meet Ford's technical requirements.

Catalysed by the government's long-term plan for Promotion of the Automobile industry and after the dissolution of the agreement with Ford, the company was forced to source knowledge from abroad in order to built the first Korean car. In this context, Hyundai approached 26 foreign firms to obtain further foreign knowledge. The company though preferred to import 'unpackaged' knowledge from multiple sources like observation tours at leading automobile manufactures, so they could integrate the newly acquired knowledge themselves into their production systems to retain managerial autonomy. The company also established licensing agreements with Italdesign and Mitsubishi, which provided them with crucial auto parts such as engines and transmissions. With a local content of 90 per cent and technical assistance from British engineers, the 'Pony' was the first indigenous car to be introduced in 1974. The company furthermore hired moonlighting Japanese engineers who helped to detect problems in the post-developmental phase.

The occurrence of the second oil crisis in the early 1980s followed by the plunge in domestic sales and new governmental requirements forced the company to shift its focus to exports and thus the development of a car that meets the more stringent safety and environmental regulations of export markets. Again Mitsubishi provided Hyundai with pivotal components in return for a ten per cent equity share in the Hyundai Motor Company. Hyundai also extended its licensing agreements with foreign suppliers. By 1985 Hyundai counted 54 licenses with suppliers from Europe, Japan and the US (Kim, 1997; 1998). Moreover, the company fully computerized its design, manufacturing and parts handling processes and established its first proving ground. By 1986, the company

could finally export its first front-wheel drive model – the ‘Excel’, selling more than 260,000 units in the US by 1987.

While the company advanced technologically, it faced more and more difficulties in the acquisition of foreign technologies. As a result, Hyundai stepped up its own R&D efforts and increased the number of researchers to 2,247 by 1986 in comparison to 147 in 1975 (Forbes & Wield, 2002). By 1991, the company gained full technological independence with the development of its first proprietary engine and transmission system (Hyundai Motor Company, 2009a; Kim, 1998). In its quest for technological independence, the company not least profited from its affiliation to the larger conglomerate Hyundai Group, which provided Hyundai with the necessary resources and a pool of talent (Kim & Lee, 2001).

In the meantime, the company also began its internationalisation push. First with the expansion through sales offices overseas until 1994, followed by knock down assembly until 1998 and the establishment of full production systems abroad from 1999 onwards, even though it still lacked a significant competitive advantage. In fact, Hyundai gained its competitive edge through its experiences and learning processes in international markets (Wright, Suh, & Leggett, 2009). Driven by the aim to become a managerial and technologically independent automobile producer, a key distinction in Hyundai’s internationalisation process represents the export focus on developed countries rather than developing countries from early on, in particular North America, while manufacturing was and still is highly concentrated in lower cost countries of the developing world (see figure 8) (Kim & Lee, 2001; McDermott, 1997). Nowadays, Hyundai Motors ranks among the world’s top 100 Transnational Corporations with a Transnationality Index (TNI)²¹ of 38.6 per cent in 2008 according to the United Nations Conference on Trade and Development (UNCTAD, 2009).

²¹ The Transnationality Index is a means to measure multinational’s degree of internationalisation calculated by the United Nations Conference on Trade and Development. The TNI is thereby based on the ratios foreign assets to total assets, foreign sales to total sales and foreign employment to total employment (UNCTAD, 2009).

Figure 8: Hyundai's globalisation by function

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(Source: Kim & Lee, 2001, p. 314)

V.1.3. Value chain analysis

V.1.3.1. Suppliers

Besides a local sourcing strategy which aims at lowering input and reducing transport and tariff costs, HKAG reacts to surging raw material prices with the establishment of a second in-house steel mill at Hyundai Steel, thereby increasing the capacity to eight tons a year. By these means, HKAG can assure its supply of high-quality tensile steel at stable prices, while simultaneously boosting synergies among the two affiliates through the implementation of circular production and recycling links (Hyundai Motor Company, 2010n). In the same vein, HKAG is constantly striving to improve the recyclability and end of life dismantling of its vehicles (Hyundai Motor Company, 2010o).

Regarding its parts suppliers HKAG is known for arms-length transactions and being a harsh price-negotiator (Noble, 2010). In 2006, HKAG squeezed its suppliers for substantial cost cuts, which even caused investigations of the Fair Trade Commission for unfair practices (Courtenay, 2006). Moreover, Hyundai sources many parts among its own ranks, which may further deepen HKAG's cost advantage. For example, Hyundai MOBIS is the country's largest domestic supplier and subsidiary Hyundai Rotem provides the electric motor for HKAGs' hybrid systems (Jackson, 2008). In a recent publication the Korean Institute for Economic Trade confirmed that the overall ratio of outsourced auto parts in Korea decreased as a result of the vertical integration of core auto parts suppliers by Korean car manufacturers in recent years. However, import

penetration increased from 2005 onwards with Korean car manufacturers including HKAG still relying on imports of important auto parts from Europe despite sourcing the majority of auto parts in lower-cost Asian countries (see Table 1) (Korea Auto Industries Cooperative Association [KAICA], 2010; Lee & Kim, 2009).

Table 1: Auto parts import of Korean car manufacturers by area and year (in thousands USD)

Area	2005	2006	2007	2008	2009
Asia	1,242,270	1,558,911	1,920,187	2,236,791	1,872,920
Middles East	1,278	1,789	2,016	5,474	2,448
E.U	1,247,038	1,296,103	1,534,677	1,575,568	1,179,097
North America	405,794	460,571	465,287	384,633	247,724
Central and South	7,370	12,201	21,456	29,721	23,694
Africa	9,129	9,476	17,230	39,850	15,731
Oceania	92,968	55,201	74,972	76,104	34,057
Other	573	153	255	3	3,000
TOTAL	3,006,420	3,394,405	4,036,080	4,348,144	3,378,671

(Source: KAICA, 2010)

In order to improve the mutually beneficial links and partnerships with its suppliers, HKAG has several programmes in place including a guest engineering system where engineers from suppliers participate in joint research projects. Another project constitutes the real-time information sharing system on production plans and design blueprints, that enables joint procurements for suppliers which in turn results in a reduction of costs (Hyundai Motor Company, 2010o).

V.1.3.2. Technological innovation

In the past 20 years, the HKAG heavily boosted its R&D investments from 190.4 billion KRW (approximately USD 160 million) in 1990 to KRW 2.4 trillion KRW (approximately USD 2.0 billion)²² in 2008 with Hyundai bearing the major part of KRW 1.587 trillion (approximately USD 1.3 billion) and KIA KRW 882 billion (approximately USD 726 million), respectively (Hyundai Motor Company, 2010o; KIA Motors, 2010a; Kim, 1998). Even in times of cost cutting affecting the whole firm in the past three years, R&D investment was the only area recessed from cuts (Courtenay,

²² Based on the exchange rate from June 6, 2010.

2006; Ohnsman & Cha, 2009). The company further plans to keep its annual R&D spending around five per cent of its sales value, which is comparable to its major competitors (Ihlwan & Kiley, 2009; UK Department for Business Innovation and Skills, 2010). The strong emphasis on R&D is also reflected in the number of patents. HKAG is among the top three patent applicants in Korea and the number of patents in the US rose to 1588 in May 2010 since its first patent filing in 1986 (Thomson Reuters, 2009; United States Patent and Trademark Office, 2010).

In the same vein, the HKAG invested heavily in the expansion of its global R&D network. By 2009, the company maintained seven up-to-date R&D and design centres together with three proving grounds across Korea, Japan, the US, Germany and India. The main advantage of a global R&D network constitutes the proximity to customers, which enables the company to develop and adjust key technologies and products to the needs of local markets. It furthermore allows HKAG to leverage resources and technologies globally, while increasing the local contents of its products and thereby lowering costs (Hyundai Motor Company, 2009a; KIA Motors, 2010c). With the newly established R&D centre in Bangalore in 2009, the company reacts to the surging demand for smaller cars since India offers a huge pool of excellent engineers with expertise in the development of compact vehicles. HKAG has further planned to gradually expand its operations in India (Edmondson, et al., 2007; Hyundai Motor Company, 2009h; Mitra, 2008). Yet, the HKAG maintains most of its engineering work in Korea and uses its operations overseas to tap latest technologies, e.g. diesel technology and design from Europe for its HED²³ cars (Eppinger & Chitkara, 2006).

More recently, HKAG committed itself to become the industry's global eco-leader with its *Blue Drive* initiative (Hyundai Motor Company, 2010f). This strategy foresees the minimisation of greenhouse gas emissions by lowering the carbon emissions of internal combustion engines, the implementation of bio-fuels, hybrid vehicles²⁴, plug-in²⁵ electric vehicle and last but not least fuel cell electric vehicles (see figure 9). While competitors started years ahead of HKAG with the development of such green technologies, the company did not have any programmes in place until 1995 for the development of the first hybrid concept car and in 1998 for its fuel cell concepts, resulting in a slight disadvantage for the company since many competitors already

²³ Hyundai European Design

²⁴ A hybrid vehicle combines two or more sources to power the vehicle, e.g. an internal combustion engine and electric motor.

²⁵ A plug-in vehicle can have its battery recharged at home.

started to commercialise some of these new technologies (Hyundai Motor Company, 2010o).

Figure 9: The Hyundai-KIA Automotive Group's Blue Drive initiative

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(Source: Hyundai Motor Company, 2010o, p. 30)

Nevertheless, HKAG made some remarkable progress in these areas with the development of its proprietary hybrid and fuel cell systems, that promise the company cost advantages compared to its competitors. The HKAG hybrid system, for example, is made of fewer parts using lighter materials, which makes *“their hybrids lighter and cheaper than the [pioneering] Toyota system”* according to Lee Ki Sang, director of the hybrid system development at the HKAG (Ihlwan, 2008d). Moreover, HKAG is the first auto producer to implement lithium-ion polymer batteries in its vehicles, which were conjointly developed by HKAG and LG Chem, who will also provide HKAG with batteries in the future. Li-ion polymer batteries are smaller, lighter and more durable in comparison to the nickel-metal hydride batteries currently used by most of its competitors (Hyundai Motor Company, 2010f). The first hybrid vehicle was the Elantra HEV LPI²⁶ launched by HKAG in Korea in 2009 and the world's first hybrid powered by liquefied petroleum gas (Hyundai Motor Company, 2009f). This year, the company will introduce a hybrid version of its success model, the Hyundai Sonata and the hybrid KIA Optima for the first time in the US market (Hyundai Motor Company, 2010f; KIA Motors, 2010a). The same year, HKAG plans to introduce its first electric vehicle with the small model i10 that will be sold initially to government and state agencies before it will hit the mass markets (Hyundai Motor Company, 2010n). Currently HKAG is also working on plug-in hybrid models, the Blue Will and KIA Ray (Hyundai Motor Company, 2010c; KIA Motors, 2010b). Thereby HKAG profits from close links with the Korean government that granted its support to a few selected ‘green growth’ sectors

²⁶ Liquid Propane Injection uses liquefied petroleum gas.

such as renewable energy and hybrid vehicle systems (*Financial Times*, 2009; Lerner, 2009).

Recently, HKAG also revealed a new concept car with the i-flow HED-7. This hybrid features a diesel engine and aims at strengthening the company's market presence in Europe. Close cooperation with BASF allowed the incorporation of various new technologies and next-generation materials reducing vehicle weight and volume, thus lowering the fuel consumption of the car (Hyundai Motor Company, 2010i).

Regarding fuel cell technology²⁷, the company is not expecting to commercialise this technology before 2012 starting with a limited series production (Hyundai Motor Company, 2010o). One difficulty in the commercialisation of fuel cell vehicles remains the lack of refuelling infrastructure. Therefore, HKAG joined forces with leading competitors to urge governments and energy agencies to build up a sufficient hydrogen infrastructure by 2015 (Hyundai Motor Company, 2009e).

Meanwhile, HKAG speeds up their research efforts in maximising the fuel efficiency of their fleet. Since the development of their first engine in 1991, HKAG successfully developed an entire range encompassing diesel and rear-wheel drive engines (Hyundai Motor Company, 2009a). One of its newest inventions the Tau 4.6litre engine was even awarded as one of Ward's 10 best engines (Hyundai Motor Company, 2008).

More than a decade after most of its competitors, the company introduced its first gasoline direct injection engine with the 2.4 Theta II GDI in 2009. This engine supposedly increases vehicles' fuel efficiency by ten per cent compared to conventional multi-point fuel injected engines (Hyundai Motor Company, 2009c).

While diesel engines do not represent an integral part of HKAG's technology strategy according to discreet company sources stated in an article in the *Automotive News*, HKAG is prudently working on the development of bioethanol vehicles and a diesel engine that runs on a higher blend-biodiesel rather than the current blend containing five per cent biodiesel (Hyundai Motor Company, 2010o; Jackson, 2008).

Further efforts to maximise the fuel efficiency of its vehicles include the downsizing of engines and car features, the development of an eight-gear automatic-transmission and the reduction of vehicle weight and friction through the implementation of lighter materials such as high-strength steel, aluminum or magnesium, and other innovative technologies (Hyundai Motor Company, 2010o). So

²⁷ Fuel cells are big batteries that produce electricity to power a vehicle through a chemical reaction of hydrogen with oxygen. Their main advantage lies in their zero emission while they only discharge water vapours. Any primary source such as coal, natural gas etc. can be used to produce hydrogen.

far, HKAG has been quite successful with Hyundai being named the fuel efficiency leader in the US by the Environmental Protection Agency with an average fleet mileage of 30.1 miles per gallon in 2009 ahead of Honda (29.7 mpg) and Volkswagen (29.6 mpg)²⁸. With a fleet average of 28 mpg KIA fares slightly worse. Nonetheless, this achievement puts HKAG in a good position to meet the new CAFÉ mandated standards of 35.5 mpg by 2015 (Hyundai Motor Company, 2010n).

While electronic system parts currently amount to 25 per cent of a car's total cost, this ratio is expected to increase to 40 per cent by 2015 due to technological advancements, tighter legal requirements and safety standards, as well as changing customer tastes (Hyundai Motor Company, n.d.). In order to reduce the development costs and benefit from synergies, HKAG formed a joint venture with Infineon Technologies. HKAG can thereby profit from Infineon's broad technology portfolio such as chipset solutions, sensor and power semiconductors and microcontrollers (Hyundai Motor Company, 2007). Together with Microsoft and the Korean Institute for Information Technology (UTA), HKAG furthermore established a Centre for Advanced Technologies in 2009, which aims at developing synergies with electronics companies that will receive grants from the Korean government. Furthermore, HKAG went into a long-term agreement with Microsoft for the development of next-generation car-infotainment systems (Jackson, 2008; KIA Motors, 2008).

Overall, HKAG is still lagging behind in some technologies, but is moving up the learning curve at an immense speed. Additionally HKAG is always anxious to find simple, innovative but more cost-efficient solutions rather than overwhelmingly complex and sophisticated ones, as for example the overall cheaper hybrid system and cheaper Li-ion polymer batteries compared to Li-ion counterparts, leading to cost advantages over competitors. Thereby, the company not least profits from its latecomer status that allows a focus on improvements of already existing technologies rather than pioneering engineering (Hyundai Motor Company, 2010f; Ihlwan, 2008d).

V.1.3.3. New product development

Responding to new customer preferences, HKAG plans to aggressively revamp its product line-up. Hyundai's 24/7 version 2.0 initiative thereby foresees the introduction of seven new or face lifted models in just 24 months, while KIA is planning a similar

²⁸ It should be noted here that the average fuel-economy mandated by CAFE refers to the fleet average, which favours automobile producers with more offerings in the compact or subcompact segment. HKAG, for example, does not have any pick-ups in their US assortment, leading to a higher average in fuel economy than many of its competitors.

boost of models that feature new eco-friendly technologies and higher fuel-efficiency (Hyundai Motor Company, 2010a; KIA Motors, 2010c).

Moreover, Hyundai is currently working on the development of a small and inexpensive entry-level car especially designed for the Indian market, which might give the company a further competitive edge in emerging markets. Nevertheless, Hyundai does not expect a launch before 2012 (*Businessline*, 2009, 2010). For the Chinese market, Hyundai also plans the introduction of a third exclusive model for the Chinese market this year, with the all-new sub-compact model ‘Verna’ (Hyundai Motor Company, 2010j).

While HKAG, in particular Hyundai, tries to move upmarket with the introduction of its first rear-wheel drive vehicle Genesis, the focus of HKAG moves back to smaller and less expensive models according to Hyundai strategist Yoon (Ihlwan, 2008c). However, with development costs of approximately USD 338 million over a three-year period, HKAG introduced a new version of its luxury sedan Equus in the domestic market in 2009 and has plans to launch it in overseas markets by 2011. According to HKAG chairman Chung, the Equus “*will elevate the Hyundai brand to the highest level*” and constitutes the company’s assault on premium brands such as Mercedes, Lexus and BMW (Hyundai Motor Company, 2009b). For the development of the new premium models, HKAG even adjusted its product development system from a sequential to a cross-functional approach where members from various departments work simultaneously together thereby speeding up the development and time-to-market. Furthermore, HKAG relied on careful analyses of customer preferences and constantly sought their feedback during the development process (Choi & Bok, 2009).

As most of the car manufacturers around the globe, HKAG also pursues a platform strategy²⁹, thus benefiting from cost synergies among Hyundai and KIA models, while also adding production flexibility (Ohnsman & Cha, 2009; Veloso & Kumar, 2002).

Moreover, the two brands are brushing up their designs to increase their appeal to consumers. While KIA obliged former Audi designer Peter Schreyer to create its signature design, Hyundai’s designs are based around a ‘fluidic sculpture’ design, that is more flowing and emotional than KIA’s (Hyundai Motor Company, 2010b; Patton, 2010).

²⁹ The strategy of “Common platforms” aims to enhance firms’ profitability by using the same parts in various vehicles sharing today’s massive R&D costs across several models, leading to fewer prototypes and thus reduced costs. Other cost savings can be achieved through better pricing from suppliers due to higher volumes, higher plant utilization and the use of common tools (Grant, 2008).

V.1.3.4. Production

HKAG maintains several production plants across the world including Korea, the US, and mainly lower-cost countries such as India, China, Slovakia, Czech Republic and Turkey (Hyundai Motor Company, 2009a; KIA Motors, 2010a). Another plant is scheduled to open by the end of 2010 in Russia (Hyundai Motor Company, 2010l). Additionally, the company plans to set up a third production plant in China and a plant in Brazil by 2011 (Alberts, 2009; *Reuters*, 2008).

With such an extensive production network in Eastern Europe and the emerging markets, HKAG can benefit from lower production costs due to cheap labour and less expensive local inputs (Berret, 2005; Farrell, 2004). With India being HKAG's manufacturing hub for the export of small cars, the company can offer its cars at a lower price even given the higher transport costs (Yee, 2008). At the same time a global production network minimises a company's exposure to exchange rate volatility (e.g. Miller & Reuer, 1998).

According to HKAG, the company's total production capacities currently amounts to 5.8 million cars and trucks. The plan is to increase the capacity to 6.5 million units until 2011, which is an ambitious plan given the overcapacity problems in the industry (Taylor III, 2010).

Regarding its production systems HKAG recognises the need to keep its production systems as flexible as possible through improvements in process technologies and the previously mentioned platform strategy. Flexible production systems enable HKAG to shift production around in order to meet fluctuating market demand (Buckley, 2009). Just recently HKAG, for example, announced to move part of the i20 production from India to Turkey (*Businessline*, 2010).

Despite cost advantages at home due to cheaper labour and material costs compared to other OECD countries, Hyundai constantly tries to lower its manufacturing costs by improving and applying simpler and cost-efficient solutions in their vehicles (see Chapter V.1.3.2) (Ohnsman & Cha, 2009).

V.1.3.5. Marketing & Sales

While early entrants in the automobile industry have the advantage of already well-established brands, HKAG is ramping up its marketing activities in order get rid of its poor quality image and to raise the brand awareness of its two brands. With its 'big voices in big places' strategy HKAG pours millions in high-profile advertising during big sport events, entertainment awards shows and in outdoor placements such as the

video billboard on Times Square (New York) (Hyundai Motor Company, 2010g). In the past year, HKAGs' advertisements thus could be seen during the commercial breaks of the Super Bowl and the Academy Awards, each of which cost HKAG an estimated USD 7 million (Ihlwan & Kiley, 2009). With the consolidation of Hyundais' and KIAs' media planning and buying activities through the appointment of Havas Media, HKAG hopes for cost synergies through the maximisation of operation scale (Hyundai Motor Company, 2009g).

This year HKAG continues its partnership with FIFA being the main sponsor of the 2010 Soccer World Cup hosted by South Africa. It furthermore extended its sponsorship commitment for the World Cup 2014 as well as the UEFA European Football Championships up to 2017 (Hyundai Motor Company, 2010e, 2010h).

Besides its great emphasis on sports marketing, HKAG is also stepping up its global social contribution activities with donations supporting humanitarian relief efforts in Haiti and earthquake-stricken Chile, as well as volunteering programs in Brazil that range from cultural exchange activities to building houses, just to name a few (Hyundai Motor Company, 2010d, 2010m).

So far HKAGs' efforts paid off. Since its entry in 2005, Hyundai continued its upward move in Interbrand's Best Global Brands survey and ranks currently 69th with a brand value of USD 4.6 billion surpassing Porsche, Ferrari and Lexus (Hyundai Motor Company, 2009i).

Thanks to a new quality imperative devouring over USD 6.5 billion since 2004 in this area, Hyundai was named top non-luxury brand in J.D. Power's Initial Quality Study in 2009 for the second time since 2006 and ranks fourth among all car manufacturers only surpassed by Lexus, Porsche and Cadillac. In this survey US customers rate their overall satisfaction with the quality of their newly purchased vehicles (Hyundai Motor Company, 2009d; Ihlwan & Kiley, 2009). The American magazine consumer reports, which tests performance, comfort, utility, and reliability of vehicles, affirms the good quality of HKAGs' cars ranking fourth best among all carmakers in 2010 (Consumer Reports, 2010).

With the enhancement of dealership facilities and services, HKAG tries to boost their image even further (Hyundai Motor Company, 2009a). In 2008, for example, HKAG spend approximately USD 74.3 million on the refurbishment of its European dealerships (Revill, 2008) and is offering customers extended five years bumper-to-bumper warranties, five years' roadside assistance plus annual vehicle health checks with its so-called 'Triple 5' package (Hyundai Motor Company, 2010i).

Genuine promotions such as the US assurance programme, where customers can return their new car within a year if they lose their job, the 'assurance gas lock' programme guaranteeing buyers a fuel-price of USD 1.49 per gallon for a year and more recently the incentives for trading-in Toyota cars when customers purchase a new Hyundai or Kia car, were reflected in the increase of the company's market share in the US (Halliday, 2009; Woodall & Kim, 2010). The major push in sales promotions is also notable in the jump of HKAGs' promotional expenses from USD 1.9 billion in 2007 to USD 3.25 billion in 2008. The overall selling expenses³⁰ thereby accounted to 18.6 per cent of total sales in 2008 slightly increasing from 16.2 per cent in the previous year (Hyundai Motor Company, 2009a).

With a quantum leap in quality and priced far below its competitors, HKAG offers customers good value-for-money, which seems to be a continuing trend on demand side. The luxury sedan Equus, for example, will be priced about USD 20,000 below European equivalents offered by Audi, BMW and Mercedes. However, unlike most of its competitors, Hyundai is launching its luxury vehicles under the same brand rather than creating a new brand umbrella, which may hamper its quest for brand repositioning, as consumers still do not associate HKAG with a prestigious brand. Nonetheless, the transformation from a cheap brand to a smart buy already led to a change in the demographics of Hyundai/KIA car owners with 49 per cent holding a college degree in 2009. This reflects an increase of 13 per cent since 1999, whereas Toyotas increase during the same period was a mere two per cent (Taylor III, 2010).

In result, HKAG was able to constantly increase its overall market share in 2009 (Hyundai Motor Company, 2010k). The company not least profited from an extremely strong performance in the Chinese market since its entry in 2002 through a Joint Venture with Beijing Automotive Industry Holding Corporation. HKAG's success can thereby be attributed to a strong line-up of compact cars, while other international competitors rather target the top-end of the market (Bhattacharya & Michael, 2008; Hyundai Motor Company, 2010n). HKAG now holds the second biggest market share in India and fourth biggest in China (*Datamonitor*, 2009b; Hyundai Motor Company, 2010k).

The Group's aggressive selling strategy in the US and its desire to further penetrate the European market may be facilitated through the closure of South Korea's Free Trade Agreements (FTA) with the US and the European Union. Both agreements,

³⁰ The selling expenses include all personnel and non-personnel operating costs of sales and marketing activities, advertising, sales promotions, customer service etc. of a firm

which are still under review by the authorities, would increase the competitiveness of Korean automobile manufacturers through the removal of import duties and other trade barriers. In fact, the FTA could lower the vehicle price for a Korean car in the European market around USD 1,900 according to estimates of the European Automobile Manufacturers Association while arguing that benefits for European car manufacturers under the current FTA conditions are marginal (ACEA, 2010; United States Trade Representative Office, 2010).

V.1.3.6. Organisational structure

One of HKAG's greatest competitive advantages constitutes its speed and agility to quickly adapt to changing market conditions. According to Krafcik, president and CEO of Hyundai Motor America, the company's lean and flat organisational structure constitutes one of its core strengths (Halliday, 2009). With less people and bureaucracy, the company is more flexible allowing it to move faster than its competitors. The implementation of the US Assurance marketing program from the conception to realisation, for example, took just 37 days, which would require months in other companies. With its Global Command and Control Centre in Seoul, HKAG also overviews its entire operations worldwide in real-time. By doing so, HKAG is able to instantly identify and react to problems.

Another peculiarity of the company represents its boldness and ambition driven by a strong and visionary leader, thereby always benchmarking the company with the leading auto manufacturer Toyota. Despite HKAG is also well known for the determination of impossible business targets without concrete action plans. This open and aggressive approach makes the company more flexible to adjustments, which is also reflected in the companies' decision-making. HKAG tries to defer its decisions to the last possible minute in order to respond to latest developments and requirements (Taylor III, 2010).

One of the company's greatest disadvantages represents its high debt burden. Even though, HKAG could slightly improve its debt to equity ratio over the past years, with total liabilities of USD 61.91 billions and a shareholder's equity of USD 20.16 billion in 2008, its debt to equity ratio of 3.0 is far higher than most of its competitors. The high debt burden is also reflected in its relatively poor international credit ratings

with Moody's and S&P rating³¹ the company below average in 2008 with Baa3 and BBB-, respectively (Hyundai Motor Company, 2009a). This may negatively affect the company's ability to raise further funds, especially in light of current credit restrictions induced by the latest recession.

V.2. Case two: Volkswagen Group

V.2.1. Company overview

With the initial aim to build a 'people's car' (English translation for 'Volkswagen') designed by Ferdinand Porsche before WWII in 1933, reorganised Volkswagen (hereafter VW) soon became the producer of some of the most iconic vehicles in automobile history with the Beetle and the VW Van. Propelled by the great success of the VW 'bug', the company started its expansion with the acquisition of the Auto Union and NSU Motorenwerke in 1969 merging them into its modern-day premium brand Audi. With the introduction of its Golf (or Rabbit in the US), Jetta and Passat, the company continued its success story. Further acquisitions followed with the purchase of Spanish SEAT in 1986 and Czech Skoda in 1991. In 1998 three luxury brands with Bentley, Bugatti and Lamborghini joined the Group portfolio and another luxury brand is about to follow with the planned integration of Porsche into the family by 2011 (Volkswagen AG, 2010c).

Headquartered in Wolfsburg (Germany), the Group employs almost 370,000 employees worldwide and has operations in more than 150 countries. In 2009 the Group delivered more than 6.3 million vehicles to its customers and thus represents the biggest European and third biggest automobile producer in the world with a world market share of 11.3 per cent. The main markets constitute Europe, China and South America (in particular Brazil), with China for the first time displacing Germany as the biggest sales market for the Group in 2009.

With its ever-growing brand portfolio the Group serves all market segments from economic compact models to high-end luxury vehicles. Each brand is thereby independent and managed autonomously, thus maintaining its own character.

With its tailored customer services beyond just auto sales, the Group is also the largest automotive financial service provider in Europe.

In 2009 the Group generated revenues over USD 131.1 billion representing a slight decrease from USD 141 billion in the previous year. Nevertheless, the strong

³¹ Moody's and S&P are two of the most renowned international credit rating agencies that evaluate companies' creditworthiness i.e. ability to pay interests, dividends, principal on securities and so on. Lower credit ratings thereby imply higher borrowing costs and restricted capital access.

recession performance was not least due to scrappage incentives offered by many countries coupled with strong growth in the Chinese market.

In the context of its newly implemented strategy ‘18plus’, the Group is now aiming at dethroning Toyota as the world’s leading automobile manufacturer by 2018 (Volkswagen AG, 2010a). Similarly, world’s third largest premium brand Audi has set the ambitious goal to become the largest premium automaker by 2015 (Schäfer, 2010a).

V.2.2. Value chain analysis

V.2.2.1. Suppliers

Demand depression during the recession negatively affected suppliers and put many firms in financial distress. In order to reduce default risks of suppliers that may jeopardize the Group’s production, the Group refined its risk indicators and rapid alert systems in the fiscal year 2009. The Group thereby constantly monitors the reliability of its suppliers and tries to secure the existence of key suppliers through strategic partnerships and careful advanced planning based on a close interlinked network between Group members. Despite that, the Group has no explicit shareholder interests in their suppliers (Volkswagen AG, 2010b).

Similar to most carmakers around the globe, the Group tries to leverage global resources in search of cost savings. Local Sourcing therefore constitutes a building block, especially in low-cost production countries, creating volume and cost synergies through the production in situ and export of materials to European production sites. This is also reflected in the significant increase of purchases in the Asia-Pacific region (see Table 2) (Volkswagen AG, 2010a).

Table 2: Volkswagen Group purchasing by market (translated to billion USD)

	2009	2008	%
Volkswagen Group Total	87.6	93.4	-6.3
Europe/Remaining markets*	61.2	73.1	-16.3
North America	4.0	3.7	+8.4
South America*	6.7	6.7	-0.3
Asia-Pacific	15.7	9.9	+58.2

*2008 adjusted

(Source: Volkswagen AG, 2010a, p. 165)

V.2.2.2. Technological innovation

With its seven passenger car brands, the Volkswagen Group disposes over an extensive R&D network worldwide. The main Group Research Centre that bundles research activities for all brands is located in Wolfsburg while the company also maintains Group Research centres in China and Japan, as well as an Electronics research Lab in Palo Alto (CA, USA) (Volkswagen AG, 2010d).

In 2009 the Group's automobile R&D departments counted almost 26,000 people with total R&D expenditures amounting to USD 7.1 billion, thus equalling 5.8 per cent of total sales revenues. At the same time, the R&D capitalisation rate was similar to previous years accounting for 33.6 per cent of total R&D expenditures. The Group's stronghold in this area is also reflected in the 1790 patents filed worldwide in 2009 whereupon the majority concerned hybrid and auto body technologies, as well as driving assistance and infotainment systems.

Yet, the Group's main research focus constitutes the development of innovative vehicle and mobility concepts that maximise fuel economy and minimise the emissions of their vehicles. Of its current line-up, 176 models comply with current European emission standards not surpassing 140 g/km, 60 models undercut 120 g/km and six models emit even less than 100 g/km. Especially eco-friendly models thereby bear the company's eco-labels like the prefix 'e' in the case of Audi, Seat's 'ecomotive', Skoda's 'Greenline' and VW's 'BlueMotion'. Similar to other carmakers the VW Group is following a three-step approach in the development of 'green' vehicles (see figure 10) with the current main priority constituting the optimization of conventional combustion engines and the reduction of vehicle fuel consumption and emission through clean-efficient engines and the implementation of lighter materials, reduction of friction and aerodynamic improvements.

Figure 10: The Volkswagen Group's roadmap to sustainable mobility

- This image has been removed by the author of this thesis for copyright reasons -

(Source: Volkswagen AG, 2010b, p. 23)

Audi, for example, has pioneered lightweight construction of vehicles since 1985 with the development of the Audi Space Frame made almost entirely from aluminium. This type of body frame reduces the weight of an A8 by around 40 per cent in comparison to a conventional steel auto body. Moreover, the Group constantly explores parts built from magnesium or fiber-reinforced plastics with the aim to make them more affordable. Lamborghini also works closely with Boeing and the university of Washington (Seattle) on the exploration of weight-reducing carbon-fibre. Meanwhile VW is using affordable lightweight solutions like (ultra) high-strength steels in the volume segment. The VW Group also joined forces with 37 partners in the 'SuperLIGHT car project' funded by the European Commission.

In its research efforts, the Group can also profit from its involvement in motorsports activities that allow the transfer of newly proved technologies into the series production of cars. Audi's all-wheel drive 'Quattro' was first implemented in its race cars, so was the gasoline direct injection engine in 2001 (Volkswagen AG, 2010a).

Recognising that drivers can improve the fuel economy of their vehicles through more economical driving habits, the Group makes use of advanced auto electronics to develop driver assistance and automated driving systems to lower future fuel consumption even more. Despite, the company also attempts to educate drivers around the world through customized driving trainings (Amend, 2008; Vasilash, 2008a; Volkswagen AG, 2010a).

Nonetheless, the major focus still remains the optimization of power trains. Despite improving existent direct-injection gasoline (TSI) and diesel engines (TDI) and

innovative transmissions, the company works on advancing the TSI technology to natural gas and flexfuel³² drive-trains (Volkswagen AG, 2010b). Vehicles already available with such options include the VW Golf and Passat, as well as the Audi A4 (Volkswagen AG, 2010a).

Yet, the company places its highest emphasis on clean diesel technologies like most of the other European car manufacturers and even reintroduced them into the diesel weary American market after their withdrawal in 2006 due to the failure to meet the regulation requirements back then (Patton, 2008; Volkswagen AG, 2010a).

According to VW, the main advantage of clean diesel is the high fuel efficiency in the city and on the highway, while hybrids' fuel savings are confined to urban driving. The Golf and A3 TDI, which was awarded green car of the year in 2010, for example, achieve a fuel economy of 42 mpg on the highway and 30 mpg in the city, while many hybrids do not even surpass the 30-mpg threshold (Stewart, 2010). Last year's winner, the Jetta TDI also meets the world's most stringent emission requirements compliant with all 50 US states. While diesel vehicles save up to 30 per cent fuel in comparison to gasoline vehicles, one of their major disadvantages represents their price. A similar price tag as for hybrid vehicles and a higher gallon price in the US undo the cost savings through lower fuel consumption. Even in Europe, a stronghold of diesel vehicles, the once cheaper diesel fuel is now as expensive as gas, although car tax benefits for diesel models remain unlike in the US where car tax for gasoline vehicles is lower than for diesel (Flint, 2008; Vasilash, 2008b). Another problem with diesel engines constitutes their higher emission of nitrogen oxides requiring costly filters and catalysers, even though their carbon foot print otherwise outrivals gas engines (Patton, 2008).

Given the increased popularity of hybrid vehicles, the VW Group is currently expanding its line up of hybrids and plug-in-hybrids - so-called TwinDrives. The plug-in hybrids combine a TSI engine with an electric motor leading to fuel savings of up to 15 per cent. In 2008 VW already introduced the Golf TwinDrive. This year VW and Audi plan to launch hybrid versions of their SUVs Touareg and Q5. The company presented also the world's smallest and most fuel-efficient hybrid car at the Frankfurt Auto show with the L1. Equipped with a high-tech TDI engine and offering space for two adults, the L1 merely needs 1.38 litres diesel per 100 km and emits just 36g/km of carbon-dioxide (Volkswagen AG, 2010a). Moreover, the Group plans to implement the new stop-start technology across all brands and models, which shuts off the vehicle's engine when idle and hence operates like a micro hybrid system (Schweinsberg & Zoia, 2009).

³² Flexfuel vehicles can run on gasoline, ethanol and methanol or any combination of these.

In addition, the Group is following the current demand trend by downsizing their vehicles and engines. With the introduction of the next generation Polo BlueMotion equipped with a 1.2 liter three-cylinder-TDI engine, the company expanded its direct injection technology into the segment of small cars. With a carbon-dioxide emission of 87 g/km and fuel consumption of 3.3 liters per 100 km it is also one of the most economical vehicles in the world (Volkswagen AG, 2010a). The company is also planning on implementing its innovative seven speed direct shift gears box in the compact segment, which will lower fuel consumption further (Volkswagen AG, 2010b).

In the medium-term, the Group focuses on alternative fuels attained from renewable primary sources such as bio-fuels in order to reduce the dependence on exhaustible fossil fuels. In close cooperation with German CHOREN Industries and IOGEN, the Group is constantly working on the development of new environmental-friendly fuels such as SynFuel³³, SunFuel³⁴ and SunGas³⁵ that can be attained using renewable resources (Volkswagen AG, 2010a).

In the long run, electric vehicles and fuel-cell technologies represent the Group's focal point. In this context, the Group is engaged in the development of high-temperature fuel cells in contrast to most of its competitors who are concentrating on low-temperature fuel cells. Although these types of fuel cells are more complex and thus more expensive, they do not require additional cooling systems during operation (Vasilash, 2007). Nevertheless, according to Jürgen Lehold, head of the group's research department, a mass series production of fuel cell vehicles is not to be expected before 2025 and therefore the Group is concentrating its efforts on electric power trains (Volkswagen AG, 2010a, 2010b).

In combination with the new small family, which was introduced in 2007 and whose major characteristics are lightweight, compactness and eco-friendliness, VW introduced its study E-Up! in September 2009. This fully electric vehicle with zero-emission reaches a maximum speed of 135 km/hr and a range of 140 km on one charge. The launch of the E-Up! is planned for 2013, while an Up! version with conventional drive trains will be available by 2010. In addition, Audi showed its new innovative concept car e-tron. This high-performance sports car is equipped with four electric motors leading to a total engine power of 230 kwh³⁶ or 308 hp³⁷ and a total range of 248

³³ SynFuel is a synthetic diesel extracted from natural gas (Vasilash, 2007).

³⁴ SunFuels can be produced synthetically using any type of biomass such as energy crops or other biogenic resources (Volkswagen AG, 2010b).

³⁵ SunGas is an innovative biogas extracted from renewable resources like corn or silage (Volkswagen AG, 2010b).

³⁶ Kilowatt hour

km on one charge (Volkswagen AG, 2010a). The production start for the e-tron is scheduled for the end of 2012 (Reiter, 2009).

For its hybrid and electric vehicles, the Group is relying on Li-ion batteries, where its main challenge still constitutes in making them more affordable. Therefore, the Group further enforced its partnerships with several battery producers and the institute for physical chemistry at the University of Münster (Germany) (Volkswagen AG, 2010a).

Other strategic research alliances exist with Daimler, the Chrysler Group, the International Energy Agency and several universities and scientific institutes worldwide in order to push basic and applied research for the automobile industry forward. The Group is also working closely with suppliers and tries to integrate them into the development process as early as possible (Volkswagen AG, 2010b).

The VW Group formed a partnership with German power supplier LichtBlick and will produce their combined heat and power plants EcoBlue, which are powered by Volkswagen's state-of-the-art natural gas turbines (Volkswagen AG, 2010a).

Moreover, the European Union expressed its support to the automobile industry with the establishment of CARS21 (Competitive Automotive Regulatory System for the 21st century) in 2005 that provides public policy and regulatory recommendations for the automotive industry. In this context, the European Commission declared to promote access to finance, boost demand for new vehicles by accelerating fleet renewal, safeguard skilled employees, minimise social costs imposed on European carmakers and to dedicate continuous investments into the research of 'greener' and more fuel-efficient vehicles (European Communities Commission, 2009a). In 2009, the European Investment Bank, for example, granted the VW Group a loan of USD 496 million to support its research activities in that area (BMI, 2010).

V.2.2.3. New product development

Regarding the development of new products, the Group announced its aggressive plan to introduce 60 new or upgraded models for the year 2010 (Volkswagen AG, 2010a). With investments over USD 10.5 billion Audi will extend its product line-up by eight models until 2015 to a total of 42 models. Among those new vehicles are a new large luxury coupé A7, the luxury sedan A8 and its first premium compact car with the A1, which will also be its lowest priced model (Reiter, 2009; Schäfer, 2010a). The VW passenger brand, on the other hand plans to introduce its previously mentioned new

³⁷ Horse power

small family starting with the UP! in 2010, thereby serving the increasing demand for small and eco-friendly vehicles. By the end of 2010, the company further plans to launch an adapted version of its compact Polo in India that will cater the local needs in terms of design, vehicle payload, clearance height and a fortified horn amongst others (Volkswagen AG, 2010b).

In order to strengthen customer focus even more, the VW Group continuously enhances its integrated innovation management process, which simultaneously integrates various functional departments such as R&D, procurement, production and marketing and sales in the development of new technologies. Its efforts were also acknowledged in the Dow Jones Sustainability Index, where the company scored far above average in the category 'innovation management'.

In all its new product developments, the Group profits from its extensive platform and module strategy across all brands, which allows the company to increase its product range while reducing development time, efforts and costs, as well as complexity of its vehicles (Volkswagen AG, 2010a). The Skoda Fabia for example shares a common platform with the VW Polo; the VW Golf with the VW Jetta, Audi A4 and the Skoda Laura, so do the VW Touran and the Porsche Cayenne (Mitra, 2010). Even though platforms are very common in the industry, the Group's strength is to adopt those platforms without cannibalising sales of more expensive models by cheaper platform counterparts (*Economist*, 2009d).

Despite the modular longitudinal platform (MLB), the Group further developed the innovative modular transverse matrix platform (MQB). This platform supersedes current platforms as it allows the modular arrangement of components for vehicles in which the power train is mounted transversely to the driving direction rather than longitudinal, thereby increasing the range of vehicles based on such platforms from subcompacts to large luxury vehicles.

Moreover, the group constantly expands its module concept into other areas of the automobile such as electronics, auto body, infotainment and many more (Volkswagen AG, 2010a). Since 2009 the Group even uses modules to build new dealerships (Volkswagen AG, 2009).

In order to increase efficiencies and synergies in the product development process even further, the Group is currently working on the implementation of a central engineering database 'CONNECT', that will contain all relevant product data and will link all brands and departments, as well as strategic development partners and suppliers (Volkswagen AG, 2010a).

V.2.2.4. Production

With 61 production sites (40 of which are used for the production of vehicles) spanned over fifteen European countries, Mexico, Brazil, Argentina, South Africa, China, India and Russia, the Group disposes over an extensive global production network offering closer proximity to customers.

With the opening of the Indian plant, the inauguration of the Russian plant in Kaluga and the acquisition of two more Chinese plants in Chengdu and Nanjing in 2009, the Group clearly shifts its focus to the growth opportunities in the emerging markets (Volkswagen AG, 2010a).

Currently, the group is also setting up a plant in Chattanooga, Tennessee (US) with the aim to increase its market presence in the US and to reduce risks due to fluctuating exchange rates. The plant will be opened by 2011 and will be mainly used for the production of a new midsize car especially designed for the US market (Kelly, 2009).

With a flexible manufacturing approach thanks to its platform and module strategy, the Group can adjust its production to market developments enabling the company to weather demand fluctuations (Volkswagen AG, 2010a).

One weakness for the Group remains the high production concentration in Western Europe, in particular Germany, due to inflexible labour regulations and labour unit costs ranking among the highest in the world that erode profitability (BMI, 2010). Consequently, one of the company's main aims represents the enhancement of quality and productivity in conjunction with a strict cost and investment discipline. In 2008, the Group teamed up with the Fraunhofer-Gesellschaft and established the 'Center of Excellence for Automotive Production' in Chemnitz. The main research focus of the centre will lie in the development of flexible and resource-efficient production solutions (Volkswagen AG, 2010a). In the following two years, the Group also plans to invest USD 8.2 billion in the upgrade of manufacturing plants, quality assurance, IT and parts supply divisions mainly in Germany (BMI, 2010).

The Group also constantly encourages employees' suggestions for improvements. By these means, the Group achieved cost savings of USD 446 million in 2009, while premiums for idea contributors only amounted to USD 33 million (Volkswagen AG, 2010a).

V.2.2.5. Marketing & Sales

One of the Group's major strengths constitutes its broad brand portfolio covering all

segments. While the core brand VW passenger cars aims at serving mass markets with reliable, high-quality products that demonstrate sophisticated German engineering skills, the Skoda brand bets on value-for-money offerings that serve customers simpler vehicle solutions. With its young and sporty image, SEAT tries to target the younger audience placing its emphasis on vehicle design. Audi, on the other hand represents the sporty and progressive premium brand that delivers top-quality vehicles. Meanwhile Bentley, Bugatti and Lamborghini compel through their exclusivity, elegance and engineering prowess. The multibrand structure not just allows the Group to standardize wholesale and retail processes in order to reduce costs, but also gives the Group a major advantage in servicing the diverse needs of corporate clients making it a favourable choice for corporate fleets (Volkswagen AG, 2010a).

With the recent acquisition of a 49.9 per cent stake of the Porsche AG and the aim to merge it into the Group family by 2011, the VW Group furthermore continues its growth expansion strategy initiated in 2007 veering away from pure cost-cutting initiatives (Milne, 2007). Besides cost synergies in research and development and pooled purchasing, the Porsche brand and its technology is expected to boost the appeal of the Group's more expensive brands (*Economist*, 2009d).

With the most recent purchase of a minority stake of 19.9 per cent in the Japanese Suzuki Motors, the Group hopes to gain access to Suzuki's lucrative small vehicle technology in order to improve profitability of the Group's small vehicle range, lower manufacturing costs and to strengthen its presence in the fast-growing Indian market where Suzuki holds more than 50 per cent of the market with its Joint Venture Maruti-Suzuki. The Group thereby plans to increase its Indian market share to ten per cent by 2015 and initiated one of the most expensive marketing campaigns in the country to build up its VW passenger car brand (*Economist*, 2009a; Fuhrmans, 2009; Mitra, 2010).

The Group's push into emerging markets is also reflected in its investment plans in China, where it is currently the market leader. Since its entry in 1984 as the first European car producer, the Group maintains two Joint Ventures in China with Shanghai Volkswagen Automotive Co. and FAW-Volkswagen Co. (Rauwald, 2010). To capture more sales in the emerging markets including Russia, the Group is currently expanding its product line-up, dealerships and retail networks in situ (Bidder, 2009; Mitra, 2010; Welch, 2010).

The US market bears further growth potential for the Group, where it is currently selling fewer vehicles than KIA or Subaru with sales of passenger cars

accounting to less than 100,000 units in 2009 (*Wall Street Journal Online*, 2010). The Group announced the ambitious plan to increase their current sales figures to 800,000 units by 2018 (McGirt, 2010). Hereby, one of the main challenges will be the improvement in affordability and customer orientation of their cars. These deficits and a malposition of the VW brand were responsible for the company's huge struggle in the US market until today (Kiley & Edmondson, 2007; Vasilash, 2006; Welch, 2010). Even though VW's brand awareness among American consumers is quite high thanks to the legacy of the VW Beetle, it is still perceived as a young and quirky brand targeting younger audiences. To change customer's perception and raise their model awareness, the company introduced its new 'Punch dub'³⁸ campaign that was first screened during the Super Bowl last year (*Marketing Business Weekly*, 2010).

In 2009, the VW brand occupied the 55th spot in the ranking of best global brands published by Interbrand losing two places in comparison to 2008, while Audi and Porsche were ranked 65th and 75th. Competitors like Toyota, Honda and Ford are far ahead (Interbrand, 2010).

Like most German carmakers, the Group relies less on cunning marketing activities as many competitors, but rather on its technological prowess true to Audi's slogan 'Vorsprung durch Technik' (engl. 'leading through technology'), which often leads to the perception of German cars being over engineered (Milne, 2007). In 2009, the Group's selling expense ratio, for example, amounted to 10 per cent of total sales slightly increasing from 7.7 per cent in 2008, and is herewith still far lower than HKAGs.

Moreover, the technological prowess and sophistication paired with the reputation of producing high-quality cars with a long durability reduces the depreciation of vehicles thus maximising their resale value. In this vein, the sale of used cars constitutes a major pillar in the Groups marketing strategy (Volkswagen AG, 2010a).

V.2.2.6. Organisational structure

The two latest Group acquisitions with an overall value of USD 6.9 billion have a deep impact on the financial capabilities of the Group. In order to offset the purchases and stabilise their credit ratings, the Group issued new preference shares³⁹ worth USD 5 billion at the beginning of 2010 (Schäfer, 2010b). The Group's current credit ratings by

³⁸ "Punch dub" thereby refers to an old kids' game called "Punch bug" in which a friend slugs the other upon first sight of a Beetle. In the Punch Dub commercials friends slug each other upon sight of any VW model.

³⁹ In contrast to common stock, preference shares enjoy priority dividend payments, but do not implicate voting rights for the shareholder.

S&P and Moody's are A- and A3 respectively, and thus stable above average (Volkswagen AG, 2010a). After the completion of the Porsche merger the Group's CEO Winterkorn expects the operating profit to rise by USD 867 million annually, thus vigorously enhancing the company's financial capabilities (BMI, 2010).

Furthermore, with the worldwide growth and expansion of the Group, the company is getting harder to manage despite the independency and managerial autonomy of each brand (Welch, 2010). According to business analyst Datamonitor, for example, the Group shows relatively low employee productivity in comparison to major competitors. While the Group's revenues per employee in 2009 stood at USD 398,091, competitors such as BMW, Toyota, Ford and Hyundai were more productive with revenues per employee around USD 600,000 or more, bespeaking operational inefficiencies at the VW Group (Datamonitor, 2010b).

VI. DISCUSSION

Embedded into the market context, the in-depth case studies conducted in Chapter 5 served as a snapshot of the companies' current competitive strategies and highlighted their strengths and weaknesses along their value chains which are summarised in Table 3. Thereby significant differences can be observed.

Table 3: Cross-case comparison between HKAG and the VW Group

	Hyundai-KIA Automotive Group	Volkswagen Group
Technological Innovation	<ul style="list-style-type: none"> • Lower R&D expenditure (as % of sales and total figure) • Becoming industry's eco-leader <ul style="list-style-type: none"> ○ <i>Short-run</i>: Clean combustion, hybrids, LPG ○ <i>Middle-run</i>: Plug-in hybrids ○ <i>Long-run</i>: Fully electric; Fuel cells 	<ul style="list-style-type: none"> • High R&D expenditures • Becoming industry's eco-leader <ul style="list-style-type: none"> ○ <i>Short-run</i>: Clean combustion (particularly Diesel), CNG, prudently and more recently hybrids ○ <i>Middle-run</i>: Plug-in hybrids; alternative (bio) fuels ○ <i>Long-run</i>: Fully electric; Fuel cells
New Product Development	<ul style="list-style-type: none"> • 24/7 initiative: 7 new models in 24 months • Move upmarket • Downsizing vehicles 	<ul style="list-style-type: none"> • 60 new models just in 2010 • New module system • Become premium carmaker no. 1 • Downsizing vehicles
Suppliers	<ul style="list-style-type: none"> • Vertical integration of suppliers and arms-length transactions • Local sourcing 	<ul style="list-style-type: none"> • Strategic partnerships with key suppliers • Local Sourcing
Production	<ul style="list-style-type: none"> • Flexible production systems • Use of modules and platforms • Highly concentrated in lower-cost countries • New plants in China, Russia, US and Brazil 	<ul style="list-style-type: none"> • Flexible production • Extensive use of modules and platforms • High concentration in Europe • New plants in India, Russia, US, China
Marketing & Sales	<ul style="list-style-type: none"> • Extensive marketing activities to raise brand awareness: <ul style="list-style-type: none"> ○ Big in sponsoring ○ Sales promotions ○ Smart campaigns ○ Service features for customers • Strong foothold in India and China • Focus on growth in US • Value-for-money 	<ul style="list-style-type: none"> • Strong brand portfolio • Less emphasis on marketing campaigns and sales promotions • Importance of fleet customers • Strong foothold in China, aiming for India • Focus on growth in US • Products priced above average
Organisational Structure	<ul style="list-style-type: none"> • High speed and agility • High debt-burden • Organic growth 	<ul style="list-style-type: none"> • Low productivity per employee • Strong financial capabilities • Organic growth and M&As
Overall Strategic Focus	Price/Cost competitiveness; increasingly differentiation through quality improvements and marketing & sales activities	Differentiation through superior technologies and products; increasingly price/cost competitiveness

As depicted in the literature review, latecomer firms are often inferior to established market actors in various areas. For HKAG, this is still true for its technology. While the VW Group launched its first hybrid concepts already in the late 80s/beginning of the 90s with the Audi Duo Hybrid in 1989 and the VW Hybrid Golf in 1993, HKAG just started to step up its research activities by that time (Hyundai Motor Company, 2010a; Volkswagen AG, 2010b). Although HKAG caught up quickly and is almost head to head with its competitors, lower R&D expenditures and the head start of the VW Group still leave a minor technological gap. Yet, HKAG's technological leapfrog in the last years reveals the company's capabilities and with the launch of several new vehicles in the next years featuring the newest technologies, the company will close the gap really soon. Both companies also committed themselves to become the industry's eco-leader in the near future. In the pursuance of this goal HKAG is focusing more on hybrid technologies and alternative fuels such as liquefied petroleum gas, while the VW Group spurs the dispersion of diesel technologies and alternative fuels such as compressed natural gas⁴⁰ and bio fuel. More recently though, the VW Group started to embrace hybrid technologies as an intermediate step to its ultimate aim, the full electrification of vehicles (Zoia, 2010). According to a study conducted by A.T. Kearney, the costs of diesel and hybrid vehicles for car owners will become almost alike and competitive with conventional gasoline and liquefied petroleum gas engines by 2020, while natural gas engines will be the most competitive option. Thus, both companies are in a good competitive position for the future technology-wise. In the long-term, both manufacturers concentrate on electric vehicles and fuel cells, where prospects for electric vehicles are far more promising than for fuel cells as these still imply various technical challenges such as storing hydrogen and operating in cold temperatures due to water contents that may solidify⁴¹. In addition, the recharging infrastructure for electric vehicles is less expensive, quicker and easier to implement than hydrogen refuelling stations (Klink, Rings, Gifford, & Krubasik, 2009). Interestingly, HKAG does not seem to rely as much on external research partnerships as the VW Group, but rather prefers to develop most of its technologies in-house these days. Notwithstanding HKAG's increase in R&D expenditure over the past years and lower engineering costs, according to auto specialist Jae Woo from fund management

⁴⁰ Compressed natural gas (CNG) is commonly agreed to be safer, offering lower emissions, better fuel-economy and can be found in a higher abundance than liquified petroleum gas (LPG) (*National Petroleum News*, 1993).

⁴¹ Despite the technical challenges, further concerns exist about the actual "eco-friendliness" of hydrogen as its production usually involves other power sources which can range from coal, gas, hydro-power to biomass.

Orbis Investment “with [HKAG] trying to address technical challenges on all fronts its resources will be thinly distributed” (Ihlwan, 2008d).

In terms of new product developments, the companies follow similarly aggressive strategies with an offensive product line-up extension in the next few years. Platforms and modularisation thereby play a vital role in both companies. Nonetheless, with the development of a new modular transverse matrix system the VW Group expanded its possibilities of common platforms across a wider range of vehicles, again showing its outrider position in this area. Both companies also concentrate on downsizing their vehicles and engines in order to serve current customer demand trends and increase their competitiveness in the emerging markets. With the expansion of their production and research facilities in these markets, they are also establishing closer proximity to customers and reduce costs through local sourcing. HKAG’s legacy as a provider of small, low-priced entry-level cars can hereby be advantageous for capturing emerging markets. On the other hand, the VW Group reacted with the recent purchase of a minor stake in Suzuki Motors, which represents one of the most profitable producers of small cars in the world in the hope to gain access to its small car technology (*Economist*, 2009a). HKAG is also continuing its move upmarket, while the VW Group tries to further enhance its position in the premium segment with Audi’s aim to become the largest premium carmaker by 2015.

Regarding suppliers, the HKAG has cost advantages through arms-length transactions and vertical integration of suppliers like Hyundai Mobis, Hyundai Rotem and steel producer Hyundai Steel. In addition, both companies rely on local sourcing strategies to gain further cost advantages. Even though, the VW Group increased its procurement from lower cost countries in Asia, its sourcing is still highly concentrated in Europe; leaving HKAG with a cost advantage over the VW Group.

As to the production of vehicles, the two companies are trying to reduce costs and increase production flexibility in order to adapt production to current demand trends through the implementation of module and platforms, as well as improved flexible process technologies. However, the VW Group’s strength in modularisation and platforms may give it an advantage over HKAG whose major strength still lies in lower material and labour unit costs at its production sites.

Regarding marketing and sales activities, HKAG continues its catch-up quest. With aggressive initiatives, HKAG tries to raise brand awareness among consumers and to get rid of its cheap carmaker image in order to be perceived as an innovative mainstream volume player. In the last years, the company also spent huge amounts in

promotional activities to catalyse sales. With offerings priced far below those of the VW Group, HKAG is still betting on price competitiveness and value-for-money, thus matching the current demand trends. In contrast, the VW Group relies more on the technological prowess of its products.

Despite HKAG's marketing supremacy outflanking the VW Group, both companies see their biggest growth potential in the emerging markets and channelize their efforts in this direction. Until now, the VW Group dominates the Chinese market among foreign carmakers although its market share significantly decreased over successive years with the entry of new competitors from its high of over 50 per cent by the end of 2000 (Murphy, 2003). HKAG's stronghold on the other hand is India. But with HKAG steadily gaining market share and stepping up its efforts in China, the VW Group has to be prepared for fierce rivalry.

Both companies also try to increase their presence in the US, which is the world's second biggest car market after China. With 4.7 per cent of the passenger vehicle market HKAG so far holds a greater share than the VW Group with just 2.2 per cent (*Wall Street Journal Online*, 2010). Moreover, the VW Group tries to capture the diesel weary US market with the introduction of new fuel-efficient diesel models, which may disadvantage the VW Group in comparison to its competitors that try to penetrate the market with new hybrid models instead (Rauwald, 2008; *Ward's Auto World*, 2009).

Considering the organisational structures of those two companies, two significant differences arise. While HKAG's great advantage is its speed and agility, enabling it to quickly adjust to current market movements and developments, the VW Group's major strength remains a stronger financial muscle in comparison to the highly debt-burdened HKAG. Consequently, HKAG is favouring organic growth, while mergers and acquisition play a vital role in the expansion strategy of the VW Group.

All in all, evidence suggests that the VW Group is carving its competitive advantage from superior technology and products and thus to a greater extent from differentiation, while HKAG's strengths still lies in its price and cost competitiveness of good quality vehicles combined with extensive marketing efforts that increase exposure and consideration by customers. In this regard, HKAG is following a similar pattern as nowadays industry leader Toyota decades ago (Halliday, 2009). Shankar, Carpenter and Krishnamurthi (1998) describe two ways for late entrants to outsell pioneering companies. First, by identifying a superior product position, undercutting pioneers' prices and out-advertise or out-distribute the pioneer. Second, by beating the pioneer through innovation where the innovative late entrant will affect the diffusion and

marketing spending effectiveness of the pioneer leading to its own faster growth while slowing down the growth of the pioneer. While HKAG is still following the first route, with its strong dedication to R&D it will likely outpace its competitors in the near future in terms of innovativeness. The development of its own proprietary hybrid and fuel cell architectures are first signs in that direction.

Nonetheless, due to the changes in customer demand and the growth opportunities in the emerging markets, the VW Group is striving to improve the cost competitiveness of its products. Conversely, HKAG is currently more focusing on the differentiation of its products with the aim to increase its market share and profits. While HKAGs operating profit margin in 2008 (2007) was 3.8 (4.1) per cent the VW Group's margin was considerably higher at 5.6 (5.6) per cent. Similarly, HKAG's net profit margins the same year added up to 1.1 (2.3) per cent in contrast to VW Group's 4.1 (4.1) per cent, thus reflecting HKAG's lower pricing strategy and strong cost control (Hyundai Motor Company, 2009a; Volkswagen AG, 2010a). In other words, while HKAG is concentrating on its upstream activities, the VW Group is placing more emphasis on its downstream activities. In this sense, the strategies of the two automobile producers are convergent, with HKAG veering away from a pure cost leadership strategy to a differentiation strategy and the VW Group from a differentiation strategy to a more cost-oriented one. As forecasted by Proff (2000), these so-called hybrid strategies that combine the advantages of lower costs and differentiation, are gaining importance in the automotive industry as the pressure of international competition increases with newly emerging carmakers transforming from pure value-for-money to premium producers. In order for German carmakers to survive in the future these hybrid strategies become inalienable, especially in the middle-level segment. Nonetheless, opportunities for pure differentiation strategies will most likely remain in shrinking upper-level segments where quality, country-of-origin and autonomy of vehicle concepts are the decisive purchase factors and where premium prices signal prestigious purchases (Proff, 2000).

VII. CONCLUSIONS

Given the latest success of Korean car manufacturers, the aim of this dissertation was to depict the driving forces behind the rise and to evaluate their competitive position in comparison with German car manufacturers. Therefore relevant literature on competitiveness and the late industrialisation was reviewed in order to reveal the

latecomer's shortcomings such as lack of resources, knowledge and capabilities. In the next step, possible strategies to overcome these obstacles by latecomers were presented. Congruent with the literature, the findings of the HKAG case study revealed that the main components in Korean car manufacturers catch-up quest constituted strong governmental support coupled with intensive learning and leveraging processes from linkages with their advanced competitors and thus a strong absorptive capacity, which paved their way from contract manufacturers (OEM) to technologically independent OBM manufacturers. Other crucial ingredients were the strong focus on international markets especially emerging economies despite the hammerlock on the domestic market, as well as the enormous intensification of R&D activities, tremendous improvements in quality and strong leadership with the vision to become major players in the near future.

While South Korean car manufacturers heavily rely on lower cost opportunities offered at home and other emerging economies (their major export hubs) to penetrate international markets with price competitive products, they are simultaneously working with full speed on the differentiation of their offerings, which threatens established industry forces. When asking Japanese manufacturers which competitors they fear most, the common answer is South Koreans (*Economist*, 2010b). In fact, while Japanese car manufacturers were able to establish themselves in second stage after the American and European producers through knowledge transfer and continuous improvements in all areas, the South Koreans initiated the third stage in the industry. And given the similar path followed by Chinese car manufacturers with the exploitation of resources and knowledge through formerly governmentally enforced Joint Ventures with advanced partners, their dominance in the growing domestic market, the surge in quality and internationalisation combined with lower costs; aspiring competitors from China are already introducing the fourth stage and will most likely be joined by Indian car producers in the near future (Bhattacharya & Michael, 2008; Bremner, et al., 2005; Spitzer, 2009).

By comparing the South Korean carmakers with the German competitors, their distinctive capability in form of a superior cost structure through 'lean enterprises' as a combination of low material and labour costs, flexible demand-driven manufacturing and organisational efficiency allowing greater agility became evident. It was not least this capability and its customer-centricity that scored the South Koreans a strong recession performance with the right offerings in the right markets at the right time – namely affordable vehicles of good quality and superior service offers (Spitzer, 2009).

From this point of view, the Koreans seem to have the right mix of value and price for capturing the potential in emerging markets and current trends in consumer demand further. Regarding their technology the Korean car manufacturers are on their best way to compete on equal terms with established industry players, but in order to stay profitable they will have to gradually increase its prices in the long-term, especially with the technological challenges ahead in developed countries. For premium carmakers with less price sensitive clientele and a high percentage of fleet customers it is easier to charge premiums for green technologies than it is for low cost competitors (Klink, et al., 2009). Yet, it has to be awaited whether the Koreans can manifest themselves as a premium force in the industry, which not least depends on the acceptance of customers. Until now the Koreans are faring well in this undertaking with swift changes in consumer demographics and advances in brand awareness, but it will still take much more time to establish the desired premium brand and a national image, which is associated with technologically advanced and innovative products of high-quality. In this context, the inaugurated Presidential Council Nation Branding initiative in 2009 is a step in the right direction in order to promote a positive and desirable foreign perception of South Korea's national image (Graves, 2010).

In contrast, German car producers will have to work even harder to differentiate their products from the offerings of low-cost competitors in order to justify their premium prices as some differentiators such as reliability, vehicle lifetime and comfort features become less significant or disappear while low-cost competitors move up the learning curve (Oxyer, Shivaraman, Gosh, & Pleines, 2009). By the same token, it is important for German carmakers to watch the moves of low-cost competitors closely, as complacency produces blind spots that may leave incumbents vulnerable and delay responses (Kumar, 2006; Morehouse, O'Meara, Hagen, & Huseby, 2008; Ryans, 2010).

One major challenge for German carmakers' mass volume vehicles will be their affordability. This requires better cost structures that may imply further offshoring, even though German carmakers are already stepping up the production in emerging markets. Moreover, with the expected prosperity in emerging economies and the stagnation of growth in developed countries, carmakers around the world are racing for the development of ultra-low cost cars. It is equally important for German carmakers to get involved in the low-cost car segment with the development of lower cost technologies besides existing and new technologies, but without cannibalising existing products. To meet the required cost structures, closer cooperation with suppliers and other car manufacturers and the consultation of experienced engineers in emerging markets with

a low-cost, no frills mindset may be required. In the long-term, the new knowledge gained from this segment should be transferred to the existing portfolio to increase their competitiveness further (Oxyer, et al., 2009).

Yet, it remains to be seen which competitors will be better positioned for the future. The growing trend for environmental sustainability and the uncertainty about which green power trains will lead the way into the future, imply risky investments and leave room for a lot of venture. Despite forecasts, which anticipate traditional combustion engines' predominance until 2020, it is certain that sustainable mobility represents the future of the automobile industry and that it will lead to profound changes in the competitive landscape. While power trains, for example, still constitute an integral part of manufacturers value-add, new alternative drive trains such as electric motors and batteries are rather unknown territories for car manufacturers resulting in a high dependence on suppliers. One way of securing competitive advantages and value-added hereby, are through strategic partnerships with key suppliers. Whether vertical integration will be beneficial or not has to be awaited yet. In chorus these new technologies will further complicate and extend carmakers' range of models, R&D and production, which will pose additional challenges for car manufacturers requiring further standardisation and an even more extensive use of platforms. Even though the shift to green technologies will occur more slowly in the emerging markets, tendencies to establish CO₂ limits in China, Russia and India by 2020 are looming. China further plans to discard their fuel subsidies soon, which will further accelerate the uptake of green fuel-efficient vehicles (Klink, et al., 2009). For carmakers from emerging markets, this may constitute a major opportunity to tap latest technologies, thus speeding up their technological trajectory and leapfrog some stages. Simultaneously, they can also profit from 'early mover' advantages by already building up necessary business structures such as suppliers, up-to-date production facilities and infrastructural amenities (see Nidumolu, Prahalad, & Rangaswami, 2009). Combined with favourable cost structures this may increase their future competitiveness in the industry

Last but not least, it became evident during this dissertation that national governments had and will still have an incremental influence on the competitive environment in the automobile industry and thus the competitiveness of firms in the form of new regulations, tax legislations, the proliferation of free markets and trade, the financial support of industry participants, the support of research activities in the area of environmental-friendly technologies and not least the proliferation of necessary infrastructures for the diffusion of new technologies since natural gas, plug in-hybrid,

electric and fuel cell vehicles, all require the establishment or the enlargement of existing refuelling/recharging networks. Close cooperation with governments will therefore be adjuvant to anticipate future developments and promote the dispersion of various technologies, not least through purchase-price subsidies and favourable tax laws (ACEA, 2009; Klink, et al., 2009).

All in all, South Korean and German car manufacturers are both on the right track to prepare themselves for the new challenges ahead, which will certainly restructure the industry, and most likely lead to a surge in mergers and acquisitions (PricewaterhouseCoopers, 2010b).

VIII. LIMITATIONS AND FURTHER RESEARCH

Like most empirical researches, this study is also subject to several limitations. As previously discussed, one of the major criticisms of case study research represents the generalisability of results based on single cases. Despite the selection of representative or typical cases with the largest car manufacturers from both countries, particular differences among firms in scale, strategic orientation and positioning make it difficult to draw general conclusions for all manufacturers from the said countries and may thus decrease the external validity of results. While HKAG, for example, showed strong performances over the past years, other producers such as Ssangyong, the smallest Korean carmaker and the third largest producer GM Daewoo did not fare equally well. Ssangyong even had to seek receivership in 2009 and GM Daewoo is in a similar precarious financial situation that stems from tremendous global losses of its giant parent GM, which took over the Korean car manufacturer in 2002 and ever since sells most of the Daewoo range under its other badges like Chevrolet and Buick amongst others (Ihlwan, 2009; Song, 2009). Similarly, the VW Group is the only German car manufacturer that targets the mass volume market. Other car producers such as BMW, Daimler and Porsche solely focus on the premium segment, which may result in different strategic and thus competitive implications. Nevertheless, the trends in the industry particularly towards smaller and 'greener' vehicles will not spare them affecting their earnings and will thus require responses in form of cost savings amongst others (Hawranek, 2009).

In addition, the lack of a unitary concept to assess competitiveness and its complexity allows for a broad leeway of categories and dimensions to consider, thus questioning the construct validity of the measurements taken. To increase the construct

validity in this dissertation, measures were derived from the analysis of market contexts and were subsequently compared with expert opinions from previous studies on the global automobile industry. Nevertheless, certain subjectivity biases towards the categories chosen cannot be completely ruled out and other constructs may have led to different results.

As mentioned earlier the same criticism is applicable to the selection and processing of data. However, were possible the author tried to reduce these biases and increase the validity of information by choosing objective sources and the triangulation of data. Another problem during this dissertation partially constituted the availability of data. While competitiveness data of firms can be inexhaustible, it is in many cases also difficult to attain since organisational data and information is often confidential and not exposed to the public. Given the reliance on archival and documentary data, another weakness of this dissertation constitutes the lack of internal organisational insights, which were unfortunately refused to the author.

Last but not least, the limited scope of this dissertation posed some constraints on the coverage of the analysis resulting in the analysis of only two cases and a prioritization of certain factors leading to the negligence of other important categories like human resource management and corporate governance amongst others. In the past, the case company HKAG, for example, suffered in particular from difficult labour relations, strikes and rigid unions that deteriorated its competitive position, despite a corruption scandal where charges were pressed against HKAG's chairman (*Economist*, 2007b; Gulati, 2010; Song, 2006; Song & Minder, 2008). On other hand, this leaves opportunities for further research with the inclusion of more cases and other competitiveness factors.

Moreover, given certain differences in the paths followed by latecomers in their catch-up process, comparisons with other latecoming firms would be of particular interest to describe best practices. HKAG for example failed several times to emulate the successful Japanese business model characterised by lean production, horizontally integrated businesses (so-called *keiretsus*), stakeholder-dominated corporate governance, intimate supplier relations and sophisticated mechanisms to acquire and upgrade labour skills. Instead, it found its own way, which is frequently entitled as 'Fordism light' including governmental support, lesser sympathy for unions and workers, virtual immunity to local politics and interests of small firms, as well as the vertical integration of businesses and a strict top-down control (Noble, 2010).

Last but not least, to increase the transparency in competitiveness analysis and facilitate the comparison and benchmark among firms, industries or nations; a clear definition and uniform framework for competitiveness that combines all different conceptual streams is needed. Future research on these issues will thus require interdisciplinary approaches and the collaboration of scholars from various areas such as economics, international business, organisational management and operations, just to name a few.

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