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**Global Networks and Competitive Strategic Alliances  
in the Automotive Industry.  
The Case of declining Europe.**

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*To Christian and to Thomas*

*...love can do miracles...*

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## INTRODUCTION

This work aims to study competitive-strategic alliances in the automotive industry and to verify the words of Avvocato Agnelli, later re-said by the nowadays CEO of Fiat Chrysler Automobiles Sergio Marchionne: *‘La festa è finita. (...) dopo la crisi economica resteranno solo sei grandi gruppi. Ossia riusciranno a sopravvivere soltanto quelli con una produzione superiore a 5,5 milioni di auto all'anno, (...) per i costruttori di massa alla fine ci sarà un americano, un tedesco, un franco-giapponese, probabilmente con una ramificazione negli Usa, uno in Giappone, uno in Cina e un altro potenziale player in Europa. (...) Non posso continuare a lavorare sulle auto da solo perché ho bisogno di una macchina molto più grande che mi aiuti. Ho bisogno di una macchina condivisa’*<sup>1</sup>. My family gave me the passion for the automotive industry. Roaring engine of my curiosity has been my mother’s job in the logistic department of one of the biggest OEM’s Italian supplier, controlled by a global group which braids a dense network of outsourcing relations with its principal competitors. I have always been fascinated by my parents’ arguments on the industry and they always made me partaking of dialogues.

The first part of the work contextualises the nowadays competitive environment and, in particular, emphasises the importance of a market-driven management orientation for the viability of a firm. In fact, from the Eighty’s, with the globalisation of markets traditional space and times, competition boundaries fell (market-space and time-based competition). The rapidity with which supply and demand are changing, the obsolescence arising from innovation and imitation processes and hyper-competition of over-supplied and saturated markets, lead the market players to establish competitive relations to generate network, or flexible mega-organisations in time, space and carried out functions, for the achievement of viable economies of scale. Globalisation has

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<sup>1</sup> Author's translation. ‘The party is over. (...) After the economic crisis there will be only six large groups. Those with a production bigger than 5,5 million cars per year will survive. (...) Mass market OEMs will be an American one, a German one, a French-Japanese one with some branches in the United-States, a Japanese one, a Chinese one and a potential European one. (...) I can’t continue to work alone in the automotive industry, because I need help from a bigger machine. I need a shared machine’.

redefined the rules of competition which have significantly scaled down the model of economic development based on the single small and medium size enterprise without global networking relations. Only those who will better manage network intangible assets (market-space management) and synergies deriving from networking with an outside-in view, to satisfy the demand before and better than competitors, will not drain profitability and will be a market winner. Globalisation imposes companies to adopt a network structure and to cope with new boundaries of competition based on the abandonment of closed and stable environments in favour of open and dynamic competitive spaces. The market-space competition emphasises the importance of a short-term profitability of sales to be achieved through continuous innovation and with a market-oriented approach, called market-driven management, focused on creating competitive customer value (Brondoni *et al.* ISTEI school in 'Symphonya. Emerging Issues in Management').

In nowadays hyper-competitive context, the achievement of business profitability derives also from the management of instable demand and time: global firms must innovate, differentiate and diversify to navigate 'demand vacuum' in order to create demand bubbles to be immediately satisfied and abandoned, better and before than competitors, according to the time-based competition. In global and over-supplied markets, firm's success depends on the intensity of relations that it establishes. Firm is a viable system oriented to competition: the new competitive landscape has changed the role of collaboration among firms enhancing more intertwined relations and competitive strategic alliances. So, in a matured market, when a company reaches a certain level of growth and wants to continue in its development and in competitive value creation, it seeks to reach its objectives outside the core business: two roads are available or to concentrate or diversify internally or externally; the discriminant is in the availability of resources and competencies but also in the level of the demand of the origin industry. In hyper-competition, cooperation helps to contain excess of supply and to surf the wave of technological convergence and hybrid sector development even in the more traditional industry as the automotive (market-driven management). Many studies driven by resource-based view, suggest that an organisation started competitive-

strategic relationships with those firms with whom share the greatest interdependence, in other words with the potential partner that has resources or capabilities it doesn't possess. Firms have to manage a global alliances portfolio leveraging network intangible assets and cross-cultural management. According to the type of governance, literature distinguished competitive-strategic relationships between equity (international joint ventures, equity participation and merger&acquisitions) and non-equity alliances (co-production/co-makership, research and development partnerships, outsourcing, supply chain partnership, cooperative marketing, licensing (licencing) and franchising) depending on the sharing of capital or not. Globalisation imposes also new production paradigms: the global capitalism, in effect, radically modifies the traditional basic principles of industrial production; global network productions are even more planned to simplification imposed by time-based competition and by new demand trends lead by the growing request of disposable products. Toyota is the pioneer of lean production, a philosophy that aims to minimise and cancel wastes and that has exceeded the limits of mass production developed by Henry Ford and Alfred Sloan. Toyota is the pioneer of lean production. Only lean is not sufficient, also innovation is a key factor in the development; literature shows the effects arising from research and development (R&D) in terms of increased productivity in the use of factors of production, capital and labour, promoting growth. Networks are induced to target R&D spending on open innovation policies in which: the boundaries between imitation and innovation are fluid; the profit level of the innovation/imitation initiatives is an absolute priority; and finally, a return on investment can be achieved in the very short term. In global managerial economics, knowledge production becomes the critical competitive factor and forces the Nation-States to develop a global perspective in developing world cities, mega-cities, leader in knowledge production designed to meet the growing needs of global networks: the innovative capacity of a country results in goods, services, organisation of the production process of increasingly high quality. Product and process innovations are to support long-term growth, increasing the overall productivity of the system (Brondoni *et al.* ISTEI school in 'Symphonya. Emerging Issues in Management', Gulati *et. al.*, Coase, Williamson, Penrose, Kogut, Porter, Eisenhardt *et al.*, Dyer *et al.*, Kotabe, Levine &White,...).

The second chapter is dedicated to the automotive sector, which provides fertile ground for the study of over-supply and the establishment of strategic relationships to support the profitability threatened by the proliferation of offer and brands and by the high fixed costs of the sector. Because of the excess of capacity and underutilise of production facilities, the sector is experiencing one of the most difficult times in its history, a time of profound change, especially in Europe, US and Japan, the so-called Triad. The main reasons are due to the growth in demand for cars coming from emerging countries such as China; to changes in the purchasing behaviour of more and more informed consumers thanks to the computerisation and digitisation; to the new use of the car as a means of transport that is closely related to a more green view of life and planet resulting from congested cities. To meet these conditions the producers reached a convergence of strategies (differentiation) driven by a certain technological convergence (flexibility of production). M&A, strategic alliances and turnover have led to the fulfilment of 'Advocate' and Marchionne's words: the concentration in a few large groups that compete on the market with similar strategies and based on similar structures. Although the main basis of success in the auto market is on the ability to offer something unique compared to competitors, the rivalry is between groups with a strong brand image that operate in the market with a broad model mix portfolio that ranges from premium to niche and to mass, so flattening any kind of distinction between high- and low-end manufacturers. The sector paradox lies in the fact that in a saturated market these large groups must invest in flexible and simplified plants, using production modularisation and common platforms (technological convergence) to achieve significant advantages in terms of cost reduction, development times and introduction on the market. Modularisation and common platforms that actually lead to unattractive models and poorly differentiated, negating much of the investment in differentiation, one of the main keys to success. In addition, the built-to-order and JIT proper of Toyota Production System are not as widespread as it may seem, the adoption of these strategies would lead to improve even the weak link in the supply chain, namely the distribution network that would not anymore be overwhelmed by obsolete stocks due to the rapid introduction of new models, having to provide for discounts and suffer losses. Over-supply also affects the second player in the industry, the companies of

components that are gradually concentrating in the so-called Tier 1, often carriers of the greatest technological advances. Although the car is a complicated product, the rapid processes of imitation guided by making available to all manufacturers of the same components as part of Tier 1 in cost-cutting perspective, flatten positioning capability of OEMS' supply and makes differentiation more complicated. The challenges the industry is facing in terms of innovation/imitation processes, customer choices, governments and shareholders have a common denominator: green. Green are the challenges of fuel economy, especially in terms of technology related to the increase in efficiency of the internal combustion engines (ICE) as hybrid, plug-in and hydrogen cars will have to deal with the benefits and the great power and oil industry of fuels for motor propulsion for years. One in all the ease of reach markets thanks to a suitable distribution network (which does not happen for example for methane). Green is the new marketing direct to the final customer that, although it recognises the congestion of big cities, is still not oriented to the future of energy sources and the reduction of emissions during the buying process. Green are the new government policies (Pellicelli, Candelo, McKinsey, PriceWaterhouse Cooper, ...).

Finally, the third part of the research is dedicated to the study of the decline of European auto industry. Although Europe has been a pioneer in the construction of cars and ACEA defines the automotive as the engine of the European Union (access to mobility, job provider for millions of people, first investor in R&D), it is currently in a situation of decline: the national champions are generally suffering except in the premium segment and the British industry does no longer exist after have been more than a century old. Although the biennium 2013-2015 shows growing production and sales data, the 2008 crisis was hard and didn't save even Eastern Europe, traditional investment destination by foreign capital and not (ACEA and OICA). Demand is stagnant as shown by the data in new registrations and production faces a structural overcapacity. The chapter analyses the main European players in the mass market (PSA, Renault, Volkswagen and FCA) in conjunction with those of the premium segment (BMW and Daimler). There have been identified 8 main motivations to European auto industry decline: impact of industry dynamics on profitability; excess of production

capacity; demand stagnation; demography; market fragmentation and lack of a unique regulation; labour market, unemployment and labour unions; R&D expenditures and innovation; false environmental focus. (Author's contribute, OICA, ACEA and Unioncamere).

## **GLOBAL NETWORKS AND COMPETITIVE-STRATEGIC ALLIANCES IN A MARKET-DRIVEN ORIENTATION**

Until the Eighties of the Twenty-First century, economic activity took place in closed systems of States and national or at more regional economies according to the logic of static and proximity, but in the last two decades of that century, globalisation fostered by changes in socio-cultural, technological and economic-political environment, gave the green light to the dynamism of markets and space and time became the factors on which the modern competition is based on.

### **1. Key-Elements of Globalisation Process**

Globalisation is essentially the geographic extension of competitive markets, depending on the removal of physical, administrative and political boundaries and on the overcoming of distance through digital technology<sup>1</sup>. Many people can think that globalisation process is mechanical, but it isn't true. Globalisation is the result of firms' actions and strategies referred to stakeholders' actions; it is referred to liberation when we are talking about the role of Nation-State and their relation with firms<sup>2</sup> in terms of real economy, surplus accumulation and development of global economic tasks starting from specific national key-factor<sup>3</sup>. As the American sociologist Zygmunt Bauman said, 'every action born locally with such apparently objectives, has an impact on the balance of powers and resources causing changes in every part of the planet'. This means that in a global world there is an exchange of resources such as labour, product and or services and knowledge, that exploits in mega-organisation with very strong 'top tier management power' competing on a vast scale: in an interconnected world, global

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<sup>1</sup> Cf. Brondoni Silvio M., 2014.

<sup>2</sup> It is important to remark that in a global environment, Nation-States lose their primacy in setting guidelines for economic development, in favour of the strong power of large corporations.

<sup>3</sup> See Brondoni Silvio M., 2014 p. 14. Nation-States focus on surplus accumulation by pursuing a) lower costs of labour, taxation and regulation; b) incentives to attract foreign firms' localisation; and c) new opportunities through intangibles and mass production and by focusing on some national factors as R&D technologies exploitation and imitation capabilities.



competition has been joined by firms both from developed countries and third economies, producing positive effects on standards of human living and negative ones on people protection<sup>4</sup>.

Four phases of globalisation can be identified according to the evolution of competition<sup>5</sup>:

1. Product globalisation (1980-1990);
2. Firm globalisation (1990-2000);
3. Financial globalisation (2000-2010);
4. Network globalisation (2010-2020)

Since the '80s, American and European firms transformed their organisation from multinational firms to global networks through merger and acquisitions deals, aiming to be capable of surviving competition from the largest rivals or to expand international operations. These deals have been especially prevalent in sectors at the heart of product globalisation, such as brand-name consumer articles, tourism, banking, insurance, informatics, telecommunications and electronic mass media, but even aircraft production. Indeed, many fusions have failed in terms of subsequent share price performance, earnings growth, turnover of top executives, new product development, and so on<sup>6</sup>. In this first phase of global competition and over-supplied markets, networks' policies were focused on *product globalisation* in order to obtain a primacy for their offers and to satisfy a hard shareholders demand for value creation. This view is closely related to growth and consequently to economies of scale generating competitive advantages (in technology development, operations, capacity utilisation, marketing, distribution and network externalities) supported by the R&D activities.

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<sup>4</sup> See Tassinari Vincenzo, 2003. 'The extraordinary economic and social development in the second half of the twentieth century has made the advantages of a stable and long lasting peace evident. Economic, social and technological growth took place with positive effects on standards of living never achieved before in human history. (...) However, this should not make us hide the existence of contextual limits and negative consequences. The abolishment of borders was accompanied by the reduction of barriers, which undoubtedly means more freedom but also less protection for consumers, citizens and people. Globalisation then appeared with all its benefits, but also its imbalances. It is necessary to acknowledge a mechanism of distortion, where a small part of the global population is able to purchase, while the largest part is bound to purchase less and less, and that is the reason for a worrying stall of global economy.'

<sup>5</sup> See Brondoni Silvio M., 2014.

<sup>6</sup> See Salvioni Daniela M., 2012.

During the *firm globalisation* phase, the competitive landscape was characterised by a growing competition among global networks: thus the focus was on *corporate profit* and on *corporate governance*. Pointing out to corporate finance and to delocalisation through the so-called ‘global sourcing’, corporations in the ‘90s and 2000s were able to reduce the production costs and to produce and sell a product anywhere. To better understand the above, think about the changes in the localisation choices of R&D centres. This type of activity passed from a logic of centralisation in headquarters to a logic of decentralisation, according to a network competitive advantage optimisation (in terms of R&D local competences; new revenues from outsourcing; data acquisition from competitive intelligence; and knowledge diffusion). We can also think about the use of transfer-price to manipulate balance sheets in order to relocate profits through the network organisation, for example, in the balance sheet of branch situated in countries with a lower taxation. The timely and transparent corporate communication has been stressed since the shift from a shareholder view to a *stakeholder view*. What does it mean? This means that in these years, to gain approval on companies’ action, more periodical, clear and complete information about the company must be disclosed symmetrically to the various internal, co-maker and external interlocutors<sup>7</sup>; and there has been a growing demand, both from customers and from environmental forces<sup>8</sup>, of socially responsible firms and product, resulting in more ethical behaviour and business conduct.

The third phase is characterised by *financial globalisation* of the markets, supported by different Nation-States through the so-called ‘paper economy’. In over-supply and recessive or with moderate growth markets, where global economies of scale have limits, large corporations shifted their marketing and R&D expenditures towards open innovation strategies in order to detect and collect leading signals of consumer needs and initiatives of competitors. The period 2000s-2010s outlines two aspects of corporate communications, stressed by the boom and the subsequent financial crisis. For many large corporations, the culture of transparency remains an ethical cornerstone of orientation to all who are interested and entitled to have business information. Although the above, opacity typical of *corporate perspective* come up beside the idea of

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<sup>7</sup> Cf. Salvioni Daniela M., Bosetti Luisa, 2006 and Brondoni Silvio M, 2006a.

<sup>8</sup> Cf. Zucchella Antonella, 2007.

disseminating transparent, fair, comprehensive, timely information to the various stakeholders. This opacity requires a disclosure of specific, partial and asymmetrical, graduated to the different publics on the market information.

From 2010 and up to these years, a fourth phase of globalisation -*network globalisation*- produced a structural change in network competition. The primacy of knowledge management, the worldwide localisation of production and the new policies of innovation and imitation have been modified in opportunities for merger and acquisitions, global competitive alliances and joint ventures<sup>9</sup>. As a result, the corporate competitiveness in global networks is constantly changing and is affected by expansion plans in order to achieve profit and growth; the development of hybrid sectors and the research of broader economies of scale.

## 1.1 New Capitalism and Societal Market Economy

Global capitalism, after having determined profound changes in economic and social bonds, entered in a profound crisis that allowed many opinion-leaders to say that capitalism is ended. But is it really at the end?

□ *‘Several socio-economic mutations and technological breakthrough innovations are currently modifying the competitive environment and the functioning of today’s economies. The profound changes create opportunities for rethinking the market economy system’<sup>10</sup>.*

It is not about changing the fundamental of capitalism, but nowadays the real challenge is to maintain the dynamism of capitalism avoiding its own flaws, through the opening of new opportunities and perspectives in order to deep rethink the market economy. It emerges a hybrid between socialism and capitalism, in which private companies and national and supranational laws maintain a fair level of competition, low inflation and social welfare to create a shared value. It is called *Societal Market*

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<sup>9</sup> See Brondoni Silvio M., 2012e, cit.

<sup>10</sup> See Lambin Jean-Jacques, 2014a, cit.

*Economy* (SME)<sup>11</sup>. The term *Societal (and not social) Market Economy* is proposed by Lambin for two reasons: the first one is to differentiate the model from the German social model of the 1930s and the second one is to capture something essential. ‘Market’ refers to competition, improvement and innovation while ‘societal’ pays tribute to the human element.

To prevent shortcomings of conventional capitalism, several changes are needed and some of them are still in the making. The priority is to reach a *stabilised and regulated financial market* to avoid the decoupling between the financial world and the real economy. Steps in this way have been made in the USA since the Great Depression; while in Europe they are more recent, see for example the laws on banking overhaul approved in April 2014. Second, firms have to abandon the idea of short-termism to embrace *sustainable development* and to restore the link with the *long-term*. Sustainable development allows finding a viable balance among economic growth, environmental safeguard and social justice. From a sustainability point of view, the deterioration of the planet lays the basis to go from a black to a *green economy*, so that firms are starting to adopt new and sustainable business models (for example: re-use, re-manufacturing, recycle, use of renewable energies). Globalisation, with the removal of restriction in free trade, has contributed to the rise of democracies embracing capitalism and to stimulate entrepreneurship. Economic freedom leads to economic development<sup>12</sup>, so globalisation and digitalisation are reshaping the world’s market and the economic growth. In fact, the advancement of technologies has led to a transition from a globalised to a

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<sup>11</sup> According to Lambin (see Lambin Jean-Jacques, 2014a), the SME model is the most effective way to stimulate entrepreneurship and to reward effort and work. The purpose of the corporation must be creating *shared value*, not just profit *per se*. Proponents of SME believe in markets as ‘creators’ of wealth and in governments as actors who have to *balance market relations* through government regulation or direct state competition: because the *faith in democracy* is central, the state should be and it is an instrument of social change. SME proponents reject however the concept of a *cultural market society*, that is a way of life and not a valuable and effective tool for organizing productive activities. So *social welfare* is a fundamental part of society. The SME model has to be understood as a *privilege-free system* where neither party elites nor economic power groups like monopolies, cartels or trusts influence market and society. People are social beings and society is where people achieve their full potential. SME adheres to the concept of *sustainable development* from a humanistic perspective. SME recognizes that climate change is the major contemporary issue and will affect the quality of life of our descendants. And last, SME assumes that the expansion of democracy will gradually control the excesses of capitalism, keeping up the ambition to combine a dynamic market economy with the requirements of a decent and cohesive society; it does not fight for the elimination of capitalism.

<sup>12</sup> See Brondoni Silvio M., 2002 and Lambin Jean-Jacques, 2014a and 2014b.

‘*glocalised*’<sup>13</sup> economy; in other words firms are no more players with a global presence and a standardised products or services, rather they are players with a global presence and an offer adapted to the locality and to the culture in which it is sold. In recent years, market economies have clearly shifted from an economy of scarcity (industrial-based economy) to an economy of abundance (*knowledge-based economy*) where knowledge is a resource that can be shared and improved but never can be run down when used. Knowledge-based economy focuses on intangibles asset, particularly on intellectual capital that can be break up into: a) human capital, otherwise knowledge, skills, experience, intuition and attitudes of the workforce towards which firms assume the position of sustainability and ethical societal responsibility (*humanistic economy*); b) structural capital or patents, concepts, models, and computer and administrative systems owned by the enterprise; c) external capital referring to the firm’s network and including knowledge of market channels, customer and supplier relationships, industry association and so on. Digital technologies improves transparency and create interconnectivity, this means that digital information makes it possible at zero costs to access to knowledge, products, services, objects, events, processes anytime and anywhere. This has created a more challenging arena formed by Global Traditional Markets and Global Digital Markets in which firms are competing. This isn’t all, interconnectivity means also networking that is the creation of complex but flexible relationships in which ownership, influence and control are distributed across globally dispersed groups of market actors (*distributed economy*) and the answer to every local market needs is more rapid and innovative. Economics growth depends also on the role and on the degree of intervention of the State or of the government over the time (*enabling State*). The *new State capitalism* designates a market economy system where the State controls the majority share or the entire capital of strategic enterprises, in the respect of competitive neutrality. This produces global champions that have quickly risen up the ranks of the world’s top companies; gives companies the freedom to invest for the long term profits; (c) smooths the economic cycle; (d) can accelerate the investment in or development of large-scale solutions to tackle global issues like sustainable development and global warming<sup>14</sup>.

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<sup>13</sup> See Lambin Jean-Jacques, 2014b, p.7. ‘Glocalisation’ is business jargon, is a portmanteau word of globalisation and localisation. The issue will be stressed in chapters 2 and 3.

<sup>14</sup> See Lambin Jean-Jacques, 2014b.

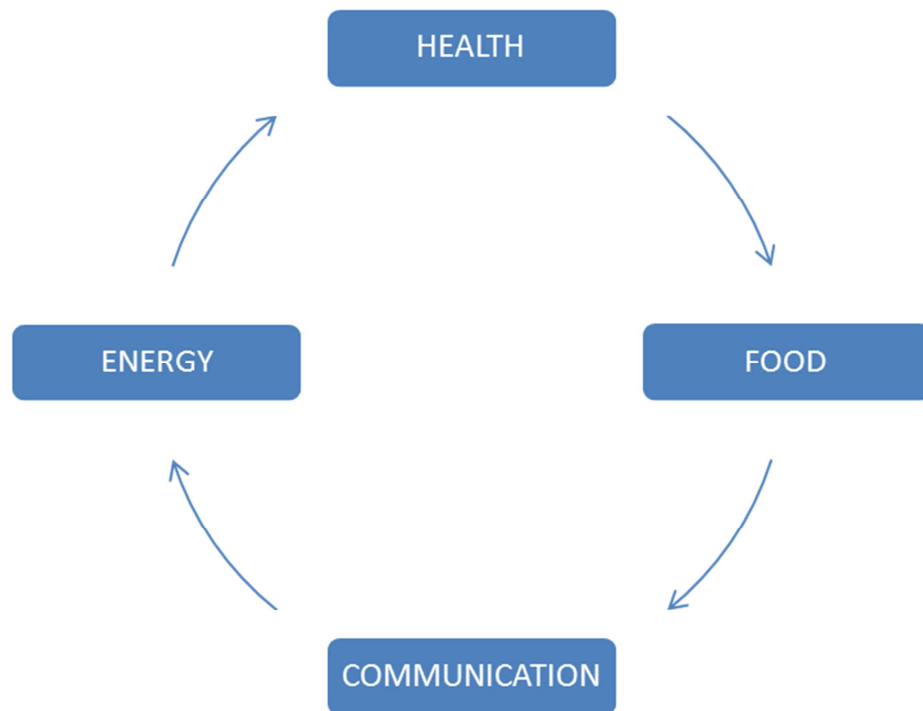
□ *Chery Automobile Co., Ltd is a State-owned corporation founded by the Government of China in 1997 and headquartered in Wuhu. Chery's principal products are passenger cars, minivans, and SUVs. Building an 'international brand' is the Chery's strategic goal: paying attention to develop both domestic and overseas markets with a going out strategy, Chery became China's first automakers to export vehicles, parts, engines and vehicle manufacturing technologies and equipment to foreign countries. Looking at long-term profits, Chery has advanced its globalisation process in establish overseas cooperation relationship by implementing the product strategy, localisation strategy and the talent strategy. Chery has integrated global superior resources and cooperated with multinationals on the whole industry chain. One of its most important alliances is the Chery Jaguar Land Rover Automotive Company Ltd, an automotive manufacturing company headquartered in Changshu, China a 50:50 joint venture formed to allow production of Jaguar Cars and Land Rover vehicles in mainland China. The first scheduled production of Range Rover Evoque started on October 2014. Last but not least, annually Chery invests over 7% of sales revenues in a complete R&D system supported by research branches in Beijing, Shanghai, Italy, Japan and Australia. The Chery Automobile Engineering Research Centre, the Asia's largest, most advanced and most functional auto technology test centre and the only 'National Engineering Laboratory of Automobile Energy Conservation and Environmental Protection in China, can meet the requirements of emission regulations of European and American standards. (See Chery International Corporate Website)*

If we reach economic growth, we can also face inequalities. It is up to a Nation-State to redistribute the allocation of resources in order to outdo the concentration of wealth in few hands; the risk of speculation; the corruption; the increasing indebtedness; and the birth of frustration and feeling of unfairness of poorer people. To reach a more balanced society means that public authorities have to activate a fair economy through a progressive taxation; an improved access to high quality education; the resolution of

public health diseases; the deactivation of gender, family origin, disabilities discrimination and so on.

Therefore, to answer the question addressed by socio-economist and a large number of opinion-leaders, it is impossible to think about an abandonment of the capitalist system. This kind of thinking is ‘self-defeating’ because global markets without capitalism would lead to a failure in the global economy context. Without global rules we get to social and economic inequalities. Rather than to a tragic end, we have to think that the recent financial crisis, social chaos and environmental destruction caused by the capitalist system have revealed a new way of thinking about market economy and new forms of capitalism driven by health, energy, food and communication. These drivers are an interconnected system of several long-term business areas, which can revitalize the economy with very high-expected profits.

**Figure 1: Global Capitalism. Basic Drivers**



Source: Brondoni Silvio M., 2014, p. 22.

## **2. Global Markets, Market-Driven Management and Network Organisation**

Globalisation shows how time and space are not given factors but rather competitive ones. This forces corporations to adopt a new corporate strategy called *market-driven management*, dominated by continuous and direct benchmarking with competitors and by competitive customer value. Market-driven management is a long-term approach that helps firms pursuing their businesses in global and open markets according to logic of *market-space competition* and *time-based competition* and leveraging *intangible assets*.

### **2.1 Global Managerial Economics from Production Management to Market-Driven Management**

Global managerial economics refer to the intensity of competition which comes from network relation logic and global competitive strategic alliances. The relation between demand (D) and supply (S) describes the different competitive dynamics.

#### **2.1.1 Scarcity Economies and Production Management**

*Scarcity economies* ( $D > S$ ) refers to a market condition in which supply and an insufficient manufacturing capacity cannot satisfied a demand who has simple and well known needs and expresses a significant potential market. Companies determine quantity and price so that everything produced is sold (*production management*). Therefore, it is easy to understand that demand has homogeneous and recurring purchasing behaviours and that competition is on price among products that satisfy the same need with the same features in terms of material components. In such situations, innovations are extremely rare and weak.

□ *World diamond market is represented by diamond mining and trade in rough diamonds. World diamond mining is concentrated in 9 countries that have a share of 99% of global production. Russia, Botswana and the Democratic Republic of Congo (DRC), the world's largest producers of natural diamonds account for 59% of global diamond production. The leader of global diamond mining industry is ALROSA Group, which accounts for 97% of the total diamond production in the Russian Federation in physical terms. ALROSA Group is followed by De Beers, Rio Tinto,*



*Dominion Diamond, Petra Diamond. They are engaged in mining in the main diamond-producing countries where the major primary deposits account more than 55% of the global diamond production. Many of the deposits since have been developed for a long time, have been shifted to underground mining due to their limited life cycle (10-20 years). The remaining production is developed by small companies and prospectors located in Zimbabwe and DRC. According to their attributes, diamonds from deposits can be divided into: gem quality (about 70% of the global production and used in diamond jewellery production) and industrial grade diamonds (used for industrial purposes manufacture of drills, saws, and abrasive powders). Gem quality rough diamonds are sorted by size, colour, quality and shape, and then are sold to buyers in conformity with the sales policy adopted in a rough diamond production company. Botswana, Russia, and Canada are leaders in rough diamond production (>60% of the world's total). Depending on the quality of the mined rough diamonds, the current state of the market and adopted marketing policy, companies use different approaches to diamond sales: sights, tenders, auctions, spot transactions and long-term contracts. The world's largest trading centres are Belgium, the UAE, the USA, Hong Kong, India, and Israel. Natural rough diamonds are sold from mines and then arrive at cutting and polishing plants to become polished diamonds that will be used in jewellery making. (see ALROSA group corporate website)*

### **2.1.2 Marketing Management in balanced Economies**

*Balanced markets, proper of United States in the 60's, are characterised by the equilibrium between demand and supply ( $D \approx S$ ). Demand starts to have more complex needs that must be satisfied, not only with tangible features but also with intangibles ones, especially linked to product such as pre and post sales services, brand and design. As differentiated outputs offered by a plurality of firms satisfy a wide range of consumers reacting in different ways to market stimuli, marketing is exploited at its top to efficiently and effectively catch the segmentation process (*marketing management*). Companies focused on customers and sales, disaggregate demand into distinct stable,*

accessible and measurable sets, so that each group is homogeneous internally and heterogeneous externally<sup>15</sup>. Therefore, in this particular dynamic of market, where innovation are controlled and the same product with the same basic function matches customer needs, the total amount of production is not completely sold and we assist to a non-price competition in which companies try to catch brand or store loyalty.

□ *Beer industry provides a good example of market in which there's equilibrium between demand and supply. Beer is a simple product made of water, barley, hops and yeast. Production process is made up of 5 steps: 1) Malting referring to harvesting, heating, drying and then cracking barley; 2) Mashing barley with sugar; 3) Boiling the previous mash with hops; 4) Fermentation with sugar and yeast to produce alcohol and CO<sub>2</sub>; 5) Bottling and Aging. Beer industry faces a non-cyclical consumer so that strong loyalty policies have to be put in place to ensure sales. Even if global consume of traditional beer is 28 litres per capita a year, we observe a shift in consumer preferences both in the emerging markets, both in the developed countries especially for lighter and healthier beer that nowadays account for ~40% of total sales. This will also be vital in appealing to Generations Y and Z. During the recent years beer players have established copious strategic alliances that have reshaped the competitive landscape reorganising the industry and have strengthened the big players. Particularly supply chain M&A have been set up, both horizontally to fix price purchasing of commodities derivatives, and vertically through forward-buying to minimize value-at-risk. Innovative developments are limited and concentrated in new product formats especially in packaging, that account for 28% of total costs. The big four brewer are ABInBev (the leading global player), Carlsberg, Heineken and SABMiller that all together have 50% of consumed beer. They clearly understood the keys to success:*

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<sup>15</sup> Cf. Corniani Margherita, 2002. 'The former requirement is met by identifying segments for which size and expected purchases can be assessed quantitatively in advance. The sales potential can thus be assessed quantitatively and dynamic growth over time may be predicted. Measurability also requires the segment to be large enough to justify the investment aimed at attracting such a group of potential customers through specific marketing actions. Instead, accessibility requires that an identified segment is reachable by specific marketing action. A segment that cannot be reached is inaccessible, with a company not being able to make the peculiarities of its offering known to members of the segment, and thus cannot succeed in stimulating a purchasing reaction'.

*implementation of innovative marketing strategies to build brand in order to have a variety and a bigger portfolio of products to face non-loyalty behaviours; strong relationships with distributors; control and reduction of manufacturing costs (15% of total amount of brewers' costs).*

### **2.1.3 Market-Driven Management and Over-Supply**

On the contrary, over-supplied markets ( $D < S$ ) are defined by a structural excess in manufacturing capacity exploited by digitalisation, so that a part of produced outputs not only will be unsold but even will never be sold. Products are rapidly imitated; technological progress accelerates innovation and decreases prices. Companies have to face a very volatile and disloyal demand. In these competitive conditions, globalisation explodes space and time as competitive factors<sup>16</sup> and imposes firms to adopt an outside-in strategy (*market-driven management*). Market-driven management philosophy faces hyper-competition focusing on competitive customer value<sup>17</sup> and continuous and critical benchmarking with competitors. It leads to long-term profits enhancing the role of intangible assets in product differentiation and helping to identify demand bubbles. Demand bubbles are temporary and unstable groups of customers arose from a specific stimulus of a company referring to a particular offer<sup>18</sup>. Shelf-policies are pursued to maximise profitability of the physical and/or virtual presence of specific items because customer choices are focused on different products classes with different uses: it is quite simple to understand: just think what happens to all of us when we have to choose whether to buy a pair of jeans or a pair of sunglasses. So, market-driven management requires to all corporate functions to be aware of markets and competitors to act before and better than them.

□ *Amazon.com, Inc. is the world largest online retailers based in Seattle, USA. Symbol of the dot-com bubble of the '90s, began its e-commerce activity as an online bookstore, arriving to sell a wide range of products such as DVDs, music CDs, software, video games, electronic products, clothing, furniture, food, toys and more. Amazon has expanded its sites in*

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<sup>16</sup> See paragraph 3 to deepen market-space competition and time-base competition.

<sup>17</sup> Cf. Riboldazzi Sabina, 2005 and paragraph 3.4 of this chapter.

<sup>18</sup> See Corniani Margherita, 2002, cit.

*Canada, United Kingdom, Germany, Australia, France, Italy, Spain, China, Brazil, Mexico, Japan and India and ships its products worldwide. In order to compete in over-supplied and saturated markets, Amazon creates demand bubbles, assuming that if two customers buying the same item can have the same needs and similar views on another. By inviting customers to visit its virtual shelves and facilitating them in research, it collects and combines information on purchasing patterns to take suggestions and personalised advices through the words ‘Customers who bought this item also bought...’. This strategy of inventory aggregation permits to be leader in costs and to better respond to fluctuation in demand with lower level of stock. In fact, Amazon keeps high-demand items in stock, whereas it buys low-demand goods from distributors in response to a customer order.*

Sales and manufacturing in global saturated markets are affected by multi-dimensional spaces and time-based competition. In such competitive context, the logic is ‘First Business, Second Community’, so that goods are manufactured only when the network knows the level of customer demand and satisfaction. The presence of multiple competitors in the market, imposes the adoption of a rapid decision making process.

Space is a competitive factor that is modified by firms and governments’ actions and reactions.

□ *European Union offers a perfect example. With the abandonment of physical bonds in favour of administrative ones and with the increasing number of member States, the European GDP goes down while the level of economic, monetary and political integration increases.*

Space is also a dynamic and unstable factor due to the continuous innovation in supply, and the continuous changes in demand features. In global saturated markets, due to the simultaneous presence of different competitors, traditional competition, focused on quantitative development in term of sales expansion based on a specific product in a specific area, is replaced by the competitive search of matching customer satisfaction. In this context we assist at an overturning hierarchy between manufacturing, so that products are manufactured only when the amount of customer and the relative

satisfaction is known according to a '*First Community, Second Business*' logic. This allows overcoming partial competitive advantages to obtain total ones connected to the establishment of competitive strategic alliances. The achievement of multi-dimensional spaces of competition determined by business attractiveness highlights the importance of short decision-making process in business development.

Like space, time is also a critical competitive factor that arises from action-reaction processes of firms operating in the market. It is a benchmark that defines the strategic behaviour of a company in responding immediately on customer needs 'before and better than competitors'<sup>19</sup>. This is called *time-based competition*. Time is the tool that can give a company the possibility to obtain sustainable and defensible competitive advantage. In particular, *time compression* refers to eliminate wastes in the *time-to-market* process, so that it is reducing the amount of time necessary to corporate processes to generate an output and subsequently to put it into the market. This highlights the evaluation of time (*time value*) in the market policy development cycle linked to the analysis and use of information to choose the correct network action time in the market-space management. The temporal dimension obliges companies to reinterpret their own structures and processes in relation to competitors with the aim of increasing demand dynamics to manage demand bubbles in over-supplied markets (*time duration*).

### **3. Networks' Growth and Competitive Strategic Alliances**

Since the '80s, globalisation has changed firms, manufacturing system and products. Indeed, many businesses have become global and the first outcome of globalisation in terms of product and processes is its standardisation. We have seen in the previous paragraph how global markets emphasise market-space competition and time-based competition. Market-driven management emphasise multi-dimensional spaces in which competitors of different natures lead to coordinate partial competitive advantages in product, marketing, R&D and so on, with those of huge dimensions connected to the establishment of competitive strategic alliances. In today context of hyper-competition and extreme economic, socio-political and technological instability, we assist to a structural change in network competition: no firm can now rely only on its own

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<sup>19</sup> See Rancati Elisa, 2005, cit.

resources, knowledge and skills<sup>20</sup>. ‘Network perspectives build on the general notion that economic actions are influenced by the social context in which they are embedded and that actions can be influenced by the position of actors in the networks’<sup>21</sup>. What is required is the sharing of resources, knowledge and skills through alliances and relationships of mutual collaboration to exploit the market instability and reach synergies. The global capitalism introduced indeed a new dimension of worldwide competition with complex dimensional growth developed and based on collaborative networks through strategic agreements in the form of equity alliances or non-equity alliances<sup>22</sup>.

In the product globalisation phase, American and European firms massively used M&A deals to create large global firms to survive competition and to expand international operation. Firms manufacture their product in step with networking, outsourcing and time-based competition logics. Capabilities, resources and knowledge readily outsourceable from global networks become easily usable in space and time<sup>23</sup>.

Global markets also push companies to reach over more strong economies of scale (size, sharing...). Economies of scale act as booster for further globalisation, providing advantages to companies which are able to leverage their broad geographical presence to create even more economies of scale, or to complement their size and geographic coverage through merger and acquisition<sup>24</sup>.

So, in a matured market, when a company reaches a certain level of growth and wants to continue in its development and in competitive value creation, it seeks to reach its objectives outside the core business: two roads are available or to concentrate or diversify (see Figure 2). Both strategies can be carried out internally or externally; the discriminant is in the availability of resources and competencies but also in the level of the demand of the origin industry.

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<sup>20</sup> See Brondoni Silvio M., 2014, cit.

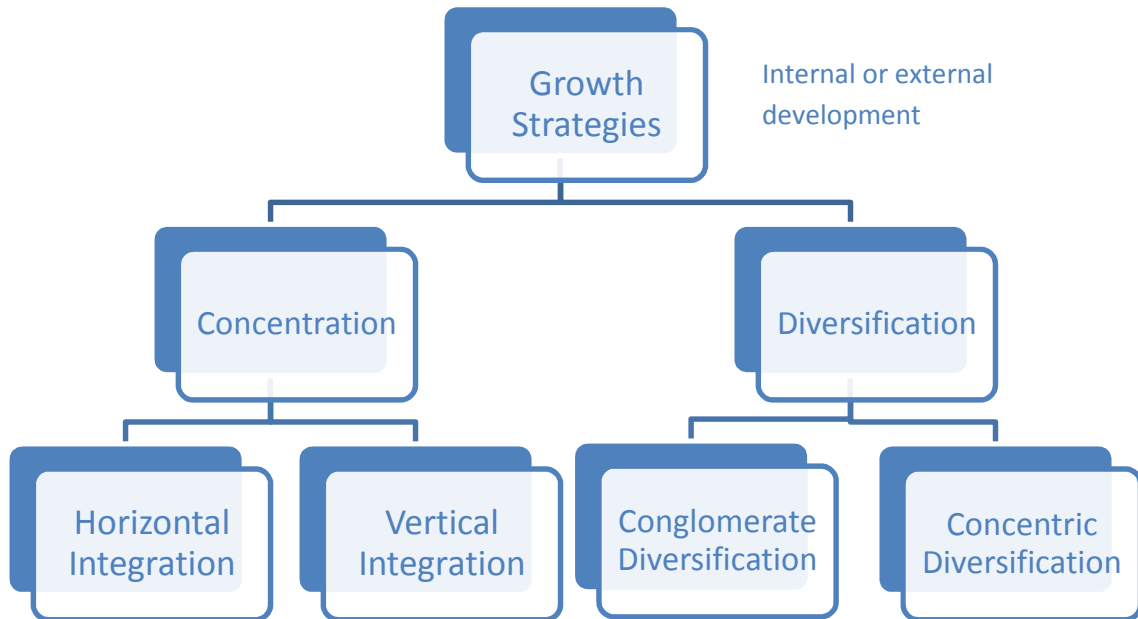
<sup>21</sup> See Gulati Ranjay, 1998, p.295, cit.

<sup>22</sup> Cf. Brondoni Silvio M. 2014, 2012b, 2012c.

<sup>23</sup> See Brondoni Silvio M., 2014, p.15, cit.

<sup>24</sup> See Canegrati Tino, 2009, cit.

Figure 2: Development Strategies



Source: Author's graphic design.

Concentration is a strategic approach in which a business focuses its resources on a single market or product. This allows the company to invest more resources in production and marketing in that one area, but carries the risk of significant losses in the event of a drop in demand or increase in the level of competition. A firm can decide to integrate activities horizontally or vertically. When vertically is the way, the company moves from upstream (backward integration) to downstream activities (forward integration) along the supply chain to ensure the sourcing of raw materials and semi-finished products or to enforce the relationship with customers to support sales. When a company extends its activities to other geographic markets or holds any kind of alliance with its competitors who are at the same level of the supply chain, it is called horizontal or lateral integration.

Market diversification, instead, is a strategy under which a firm enters an industry or market different from its core business; it allows to reduce risk of relying on only one or few income sources, to avoid cyclical or seasonal fluctuations by producing goods or services with different demand cycles, to achieve a higher growth rate, and to counter a competitor by invading the competitor's core industry or market. Conglomerate diversification is a type of diversification whereby a firm enters an entirely different

market that has little or no synergy with its core business or technology, while concentric diversification is a type of diversification in which a company acquires or develops new products or services, closely related to its core business or technology, to enter one or more new markets.

All these activities can be reached with global competitive alliances. Global competitive strategic alliances are a product of globalisation process and can be defined as 'voluntary arrangements between firms involving exchange, sharing, or co-development of products, technologies, or services. They can occur as a result of a wide range of motives and goals, take a variety of forms, and occur across vertical and horizontal boundaries'<sup>25</sup>. Why do firms pursue alliances? Companies undertake new activities both to access new profits pools (as long-term growth outside the core industry or diversify risk and exposure in the core business), and to strengthen their core business (assure competitive advantage, gap the lack in skills and capabilities, acquire assets to leverage in the core business) and to find short-term growth sources.

### **3.1 Competitive Strategic Alliances: a brief Literature Review**

The existing literature on competitive-strategic alliances is based on transaction costs theory by Coase and Williamson later, or on resource based view (RBV) by Penrose. Recently market-driven management scholars have started to study alliances.

We can agree that literature shows that there are three common themes across research: 1) the unit of analysis, both the firm and alliance/portfolio alliance; 2) the formation/governance and the performance of the alliance; 3) the factors that impel firms to enter alliances. Gulati propose to study what above in a double perspective, the dyadic one and the network one<sup>26</sup>.

In 1988, studying joint ventures, Kogut highlighted three main motivations to the formation of alliances: 1) transaction costs resulting from small numbers bargaining, 2) strategic behaviour to try to enhance their competitive positioning or market power; 3) acquisition of critical knowledge or learning another firm's knowledge. Some years later

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<sup>25</sup> See Gulati Ranjay, 1998, cit p. 293.

<sup>26</sup> Cf. Gulati Ranjay, 1998.



in 1991, he suggested that alliances occur to expand and to explore uncertainty<sup>27</sup>. Other empirical studies by Pate and Berg and Friedman include the enhancement of market power and increase of efficiency among the motives for ties<sup>28</sup>, while some industry-level scholars, such as Harrigan, Shan, Burger *et al.*, Eisenhardt and Schoonhoven, Porter *et al.*, include the extent of competition, the stage of development of the market, and the uncertainty of demand and competition<sup>29</sup>. Other studies carried out by Harrigan *et al.* have been based on a cost-benefit framework saying that because of the strategic and technological nature of costs and benefits from alliances, an alliance will be established only when the benefits exceed the costs<sup>30</sup>.

At the firm level, the proclivity of firms to enter alliances has been showed both though the role of resource contingencies, both through firms' attributes (size, age, competitive position, product diversity, and financial resources)<sup>31</sup>.

According to transaction costs theory, 'firms entering alliances face considerable moral hazard concerns because of the unpredictability of the behaviour of partners and the likely costs to a firm from opportunistic behaviour by a partner'<sup>32</sup>. Several recent studies have explored the need of information about the reliability of partners and their behaviour<sup>33</sup> and the importance of social embeddedness on the formation of alliances by firms showing that previously allied firms are likely to engage in further alliances<sup>34</sup> and are more linked to referrals.

□ *'The formation of dyadic ties between particular firms has also been studied in vertical alliances between buyers and suppliers. For instance, scholars have examined the extent to which Japanese automotive assemblers recreate their relationships in Japan in their North American operations. The evidence suggests that in addition to an array of strategic*

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<sup>27</sup> Cf. Kogut Bruce, 1988 and 1991.

<sup>28</sup> Cf. Pate J.L.1969, Berg Sandford V. and Friedman Philip, 1978.

<sup>29</sup> Cf. Harrigan Kathryn Rudie, 1988; Shan Weijan, 1990; Burgers Willem P., Hill Charles W. L. and Kim W. Chan, 1993; Eisenhardt Kathleen M. and Schoonhoven Claudia Bird 1996; Porter Michael E. and Fuller Mark B, 1986.

<sup>30</sup> Harrigan Kathryn Rudie, 1985; Contractor Farok J. and Lorange Peter 1988.

<sup>31</sup> Cf. Eisenhardt and Schoonhoven 1996, Shan Weijan, 1990, Burgers et al., 1993; Shan Weijan, Walker Gordon and Kogut Bruce, 1992.

<sup>32</sup> See Gulati Ranjay, 1998, cit.

<sup>33</sup> Cf. Bleeke Joel and David Ernst, 1991.

<sup>34</sup> Cf. Kogut Bruce, Shan Weijan, and GordonWalker, 1992; Gulati Ranjay, 1995 and 1998.

*factors associated with the characteristics of the buyer and supplier, an important consideration in the recreation of ties was the history of prior engagements in which these firms are embedded. The longer the prior history between two firms, the more likely they were to recreate these ties in North America. This suggests that the embeddedness of firms influences the creation of vertical alliances between firms*<sup>35</sup>.

Many studies driven by resource-based view, focus on the choice and the availability of an appropriate partner with whom ally: their final suggestion is that an organisation started competitive-strategic relationships with those firms with whom share the greatest interdependence, in other words with the potential partner that has resources (i.e. regulatory approval or access to new technologies) or capabilities (i.e. such as production, marketing, distribution, etc.) it doesn't possess<sup>36</sup>. Other researches propose the lack and the need of complementary resources as a driver of strategic relationships<sup>37</sup>. Some recent studies have broaden the alliance portfolio diversity construct<sup>38</sup> that includes partner, functional, and governance diversity arguing that alliance portfolios with a) greater organisational and b) functional diversity and c) lower governance diversity were related to higher firm performance<sup>39</sup> while industry diversity had a U-shaped relationship with firm performance<sup>40</sup>. According to this idea, networks should manage an alliance portfolio trying to maximise resource and learning benefits by collaborating with a variety of organisations in various value chain activities while minimising managerial costs through a focused set of governance structures.

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<sup>35</sup> See Gulati Ranjay, 1998, p.301, cit.

<sup>36</sup> Cf. Levine Sol and White Paul E, 1961.

<sup>37</sup> Cf. Richardson George B., 1972; Berg Sandford V. and Friedman Philip, 1980.

<sup>38</sup> Cf. Jiang Ruihua J., Tao Qingjiu T. and Santoro Michael D., 2010.

<sup>39</sup> Cf. Kogut Bruce 1988; Eisenhardt Kathleen M. and Schoonhoven Claudia Bird, 1996; Stuart Toby E., 2000; Jiang Ruihua J., Tao Qingjiu T. and Santoro Michael D., 2010. The studies revealed that increased diversity in partners' industry, organizational, and national background will incur added complexity and coordination costs but it will provide broadened resource and learning benefits. Increased functional diversity results in a more balanced portfolio of exploration and exploitation activities that expands the firm's knowledge base while increased governance diversity inhibits learning and routine building.

<sup>40</sup> Cf. Jiang Ruihua J., Tao Qingjiu T. and Santoro Michael D., 2010.

### 3.2 Competitive Strategic Alliances Types: which Contracts Do Firms Use to Formalise the Alliances?

As we said before, the new competitive landscape has changed the role of collaboration among firms enhancing more intertwined relations and competitive strategic alliances. In hyper-competition, cooperation helps to contain excess of supply and surf the wave of technological convergence and hybrid sector development even in the more traditional industry as the automotive<sup>41</sup>. The formal contractual structures used to organise the partnerships are called the governance structure; many studies on the governance have been conducted in the transaction cost approach, treating each alliance as independent from a more extended context, however more related to the transaction costs associated with a particular activity, rather than to a continuous exchange and adjustment process. According to Gulati, firms decide the contractual forms for their alliances on the basis: 1) of the activities they include and the related appropriation concepts they anticipate at the beginning; 2) of prior alliances in which the partners may be embedded; 3) of coordination costs that will be sustained; 4) of the economic context and the competitive dynamics<sup>42</sup> in which they act. Competitive-strategic relationships can be distinguished between:

1. *Equity Alliances*;
2. *Non-Equity Alliances*.

Unlike in equity alliance, firms in non-equity ones do not form a new entity to further their aims but collaborate while remaining apart and distinct. The following classification is based on market-driven management school and Brondoni.

Equity alliances -*international joint ventures, equity participation and merger&acquisitions*- consider that the parties share capital. Equity participation provides that a company owns shares in other firms through which it exercises forms of control and influence, while international joint venture is an alliance involving capital injections by two or more subjects from which originates a third company whose

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<sup>41</sup>See chapter 2 to exploit the development of hybrid sector, technological convergence and new competitors entrance in the automotive industry.

<sup>42</sup> See paragraph 3.3 to deepen competitive-strategic alliances theme in global managerial economics.

purposes are the entry into foreign markets, the use of symmetrical skills, skills development and asymmetrical creation of new skills.

□ *China is expected to become the largest food and beverage market globally within the next five years, driven both by the growth of a middle class consumer base in large cities and an increased desire for a wide range of packaged and branded foods. So to capture this growth in 2012, Kellogg Company and Wilmar International Limited announced a fifty-fifty joint venture for the manufacture, sale and distribution of cereal, wholesome snacks and savoury snacks, headquartered in Shanghai. Wilmar, with the wholly-owned subsidiary in China, Yihai Kerry Investments Co., Ltd, contributed to infrastructure, supply chain scale, an extensive sales and distribution network in China, as well as local China market expertise to the joint venture. Kellogg will contribute a portfolio of globally recognised brands and products, as Kellogg's and Pringle brands. Together, Kellogg and Wilmar will leverage this complementary expertise to maximise marketing and manufacturing synergies (See Kellogg Company Corporate Website).*

Non-equity alliances are less stable than equity ones, because they are based on a project rather than sharing capital. Example of non-equity alliances are *co-production/co-makership, research and development partnerships, outsourcing, supply chain partnership, cooperative marketing, licensing (licencing)* and finally *franchising*.

When two or more firms undertake to carry along a certain product we speak of co-makership. It reaches a final product with more features (minimisation of costs or differentiation) if the participants are specialised in one or more stages of the production process.

□ *The world is full of agreements of co-production, many are in the automotive world. Take for example Mazda at the time of the beginning of disinvestments by Ford with the Mullaly era. The gradual divestment brought freedom of action to the Japanese brand that by return has revealed new production choices and trade agreements: at the end of May 2012 Fiat*

*and Mazda have signed an agreement for the production in Japan of a new roadster with the Alfa Romeo brand, heir of the famous duet of 'Il laureato' designed by Giugiaro and Pininfarina. The new two-seater rear-drive model would share the basic platform with the Mazda MX-5. The agreement called MoU (Memorandum of Understanding) was revised in 2014, on the behest of Marchionne, who decided that branded Alfa Romeo cars would be produced only in Italy, replacing, in fact, in the agreement, the Fiat brand to the Alfa Romeo one. Fiat 124 Spider and Mazda MX-5 are the two models result of the collaboration between the two corporations, so similar but so different as to be in tune with the 'story' that each brand has behind (see FCA and Mazda Corporate Website).*

In R&D partnership partners contribute funds to pay for certain research and development of new products and services and minimise costs or contribute technologies and skills to achieve more quickly the result. The sharing of experience also allows firms to access to sophisticated competencies among different industries reducing time-to-market and costs.

□ *In 2014 Apple e IBM have created and announced a global partnership 'IBM MobileFirst for iOS' to transform the 'Enterprise Mobility'. The agreement aims to put into the market an offer of business apps that combine the analytics and big data capabilities of IBM and the user experience of iPhone and iPad (new business solutions for industry, cloud service, AppleCare service and support, bundle IBM for activation, delivery and management of device)*

Outsourcing is the contracting or subcontracting of noncore activities to free up cash, personnel, time, and facilities for activities in which a company holds competitive advantage. Companies having strengths in other areas may contract out some aspects of their businesses to concentrate on what they do best and thus reduce average unit cost. Global firms have reoriented their competitive strategies concentrating capabilities in specific areas and outsourcing others.

□ *The manufacturing processes of Apple and other electronics companies are almost completely outsourced. Apple produces its devices in China, through Foxconn. The reasons Apple makes iPhones and iPads in China are: 1) money savings. Manufacturing an iPhone in China costs \$8. Manufacturing it the United States would cost about \$65 more than in China, so this additional amount would dent the profit Apple makes on each device; 2) logistic challenges. Most of the components of iPhones and iPads are manufactured in China, so assembling the phones away would create huge logistical challenges reducing flexibility and the ability to switch easily from one component supplier or manufacturer to another; 3) China's factories and workforce. Factories are now far bigger than those in the United States; they can hire and fire tens of thousands of workers overnight. The workforce is much hungrier and more frugal and also lives into factories so that they can be pressed into service at a moment's notice changing production practices and speeds extremely rapidly. The large number of qualified engineers doesn't cost too much (See Apple Corporate Website).*

Supply-chain partnerships refer to long period relationships between manufacturers and selected suppliers who deliver goods, semi-finished or raw materials on time and at a specific quality. These types of agreements are strictly connected to stock and inventories management in time-based competition logic.

□ *Dell Computers adopted its model of collaborative supply chain relationships in 1995. The 'Dell Direct Model' born from a just-in-time (JIT) inventory basis, included a high velocity, low cost distribution system with direct customer relationships and build-to-order manufacturing. By instituting collaborative supplier relationships (integrated supplier and distribution networks), Dell Computers has been able to achieve significant cost savings and maintain a competitive advantage over competitors for several years. Dell reduced its supplier companies from 204 to 47 who warehoused their components only 15 minutes from the Dell factory. This JIT inventory system: 1) decreased inventory costs and led to a 6% profit*

*advantage in components; 2) reduced inventory from 30 to 13 days well ahead of the industry average at the time of 75 to 100 days; 3) customised products to customers' exact specifications, adjusted production levels to meet demand and finished product ready for shipment just 36 hours after an order was placed (See Dell Corporate Website).*

When the volumes of sell are limited, cooperative marketing permits companies to penetrate new market without making direct investments: therefore, different firms (even from different countries) promote or sell each other's products with their own (often realised with complementary products) in a specific market and for a specific period of time.

□ *Co-marketing alliances have become an integral part of the way global pharmaceutical companies do business in a hyper-competitive environment. Almost all major pharmaceutical companies have been interested in and the number of co-marketing and co-promotion agreements has increased.*

*The single most successful deal was that of Zantac (ranitidine) for Glaxo (now GlaxoSmith-Kline) and Roche in the 1980s; the alliances pushed Glaxo from nowhere to number 2 in the U.S. in one decade, rescued Roche from oblivion caused by the patent expiration of diazepam (Valium).*

*Another example is the alliances between Monsanto (Searle) and Pfizer for Celebex (celecoxib). Searle, which didn't have the necessary U.S. sales force to maximise the sales potential to fight against Merck and its Vioxx, decided to cooperate with Pfizer, who have one of the largest sales forces in the world, and received a total upfront payment of \$85 million.*

*A recent agreement was the one signed in 1999 between Pharmacia & Upjohn (now part of Pfizer) and Janssen Pharmaceuticals to co-promote Pharmacia's antidepressant Vestra in the U.S. Janssen promoted the drug to psychiatrists, whereas Pharmacia & Upjohn promoted it to primary care physicians. The benefits of the deal were mainly two: 1) more patients*

*would gain access to a beneficial product; 2) both partners would generate additional revenues and enhance shareholder value<sup>43</sup>.*

Licensing is a written contract under which the owner of a copyright, know how, patent, service mark, trademark, or other intellectual property, allows a licensee to use, make, or sell copies of the original. These types of agreements could arise risks where the licensee becomes a competitor through trademark and technologies imitation processes: so that, licensing usually limit the scope or field of the licensee, and specify whether the license is exclusive or non-exclusive, and whether the licensee will pay royalties or some other consideration in exchange.

□ *For Coca Cola, licensing started for brand protection against other companies launching cola branded products in other categories. The company has more than 500 beverage brands, including 16 billion-dollar brands, among them Diet Coke, Fanta, Sprite, Coca-Cola Zero, Powerade and Minute Maid: it is quietly clear to understand how more than 500 million Coca-Cola brand products are now purchased annually thanks to the contribution of strong partnerships and geographic expansion. Drinkware and accessories, such as coasters and bottle openers, and table top products only account for about 15% of the company's licensing business, while apparel and accessories account for 65% (See Coca Cola Company Corporate Website).*

Franchising is an arrangement where the franchiser grants the franchisee the right to use its trademark or trade-name as well as certain business systems and processes, to produce and sell goods or services according to certain specifications. While the franchiser gains rapid expansion of business and earnings at minimum capital outlay, the franchisee usually pays a one-time franchise fee plus a percentage of sales revenue as royalty, and gains immediate name recognition, tried and tested products, standard building design and décor, detailed techniques in running and promoting the business, training of employees, on-going help in promoting and upgrading of the products.

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<sup>43</sup> Cf. Adrian J. Carter, 2007.



□ *The most popular examples of franchising agreements are in the fast-food industry and in tourism.*

*80% of McDonald's restaurants chain is based on franchising. The average cost to open a McDonald's restaurant (kitchen equipment, furniture for indoor and outdoor, decorations and signs) is about 800.000€ (excluding VAT), plus an initial fee of 45,000€ (excluding VAT). The franchising agreement usually lasts 20 years and once the restaurant is open, the franchisee will pay a percentage of net sales of McDonald's restaurant, exclusive of VAT: a monthly rent as a percentage of net sales; royalties accounting of 5% of net sales; national advertising for 4% of net sales, payable to the consortium comprising all of McDonald's franchisee (See McDonald's Corporate Italy Website).*

*Hilton is part of the portfolio of brands at Hilton Worldwide, which has hotels in more than 90 countries. Other Hilton Worldwide brands include Waldorf Astoria Hotels & Resorts, Conrad Hotels & Resorts, DoubleTree by Hilton, Embassy Suites by Hilton, Hampton by Hilton, Hilton Garden Inn, Homewood Suites by Hilton, Home2 Suites by Hilton, Curio - A Collection by Hilton, Canopy by Hilton and Hilton Grand Vacations. To open a structure the initial investment required is about \$55,999,500 - \$97,117,875 plus an initial franchise fee accounting for \$95,000. The ongoing royalty fee is 5% and the ad royalty fee is about 4%. To ease credit, Hilton Hotels and Resorts has relationships with third-party sources which offer financing to cover franchise fee, start-up costs, equipment, inventory, accounts receivable, payroll (See Hilton Corporate Website).*

### **3.3 Competitive Strategic Alliances and Global Managerial Economics**

In global markets, time takes on critical importance not only in relation to the times of action and reaction of competition, but also for the measurement of the value of the relationship duration both in terms of relevance of the activities involved in the individual business ties, and in terms of the frequency of activation of relations and the degree of information sharing between stakeholders. The network structure of the

business requires the ability to manage a complex and vital system of relationships: the global markets businesses develop different relations depending on the competitive environment in which they operate.

In scarcity supply conditions, competitive strategic alliances have great relevance to precisely control the amount of product that is put on the market and ensure focus on the consumption of certain categories of goods through to the national economic systems-level agreements. In global markets and in scarcity supply conditions players manage stable alliances to control the different stages of the supply chain, to maintain the competitive status quo of the system (stable demand) but also the status quo of the relationship among competitors (cartel policies of the quantities offered and of the shares of different companies).

□ *During its life, Shell tried to diversify its activities, moving towards industries far from oil, gas and chemical: for example it invested in nuclear energy (through a short but expansive joint venture with Gulf Oil in the United States), in coal (Shell Coal had been long-term active in coal market with mines and sales), in metals (Shell bought the Dutch Billiton Company in 1970) and also in energy generation (through a joint-venture with Bechtel called Intergen). Anyway, none of these firms succeeded and all of them were deactivated. In recent years, Shell researched in alternative energies with investments in solar, wind and hydrogen power. In 2001, Shell launched, in Italy before and later in the rest of the world, the V-Power gasoline with 100 octanes (See Shell Corporate Website).*

There again, in controlled competition economies, relationships with customers are less stable and begin to be more articulated: firms aim to maintain the advantage positions they reached developing public relations designed to competitive control of competitors. However, to maintain the stability of relations with competitors, companies must invest in relation with trade, the intermediate demand. The relationship with distribution channels allows containing marketing expenses and investments.

□ *Trade marketing is a large part of British American Tobacco BAT activity, managing business-to-business relationships with the retailers who*

*sell their products. BAT has around 20,000 trade marketing and distribution employees globally, who work with retailers and develop mutually beneficial partnership. The aim of global, regional and local trade partnership, both with largest retail corporations and small independent shop owners, is to operate in the most efficient and effective way so that retailers can offer the products consumers want to buy, where they want them, when they want them, at the right quality, price and quantity. The BAT approach is based on good mutual understanding of each other's global strategies and on to identify potential areas of alignment and cooperation (i.e. insight into consumer preferences, buying behaviour in the tobacco category) (See British American Tobacco Corporate Website).*

Finally in excess of supply dynamics characterised by hyper-competition of global markets, relations triggered with other firm are the key to success. To manage the strong dynamism of markets, companies establish corporate-level relationships through research and development partnerships of competitors, customers and suppliers to control the processes of innovation, production agreements to share production processes in whole or in part and achieve economies of scale, logistics partnership to contain costs of transfer of goods in terms of supply and delivery. Networks are thus faced with managing global markets through a portfolio of alliances.

□ *Air France relies on collective strategies to develop its network. Air France's natural markets are France and Europe; they want to be leaders on the routes between France and the rest of the world. When there is enough demand on a given route, Air France operates alone, otherwise they implement a code-share agreement in which airline A is allowed to sell seats and to place its code on airline B's flights. Code-share agreements can clearly be regarded as strategic alliances designed to expand the network or address over-capacity issues<sup>44</sup>.*

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<sup>44</sup> Cf. Chiambaretto Paul and Fernandez Anne-Sophie, 2016.

### **3.4 Creating Competitive Customer Value through Competitive Strategic Alliances**

It is important to underline that alliances are not only about cost minimisation but also about joint value maximisation: competitive-strategic alliances are a way to potentially secure competitive advantage; in fact being part of alliance allows a firm both to establish its presence worldwide and to gain access to inaccessible national markets in which operate experiences.

From the perspective of the RBV, firms have a sustainable competitive advantage and achieve superior performance when they possess a stock of valuable, rare, imperfectly imitable, and non-substitutable resources (nontradeable and internally accumulated). The extant RBV-alliance literature has identified resource supplementarity and complementarity between alliance partners as important explanatory factors for alliance formation but also for value creation<sup>45</sup>. Supplementary partner resources are essentially identical resources in the same product or geographic market domain, while complementary partner resources are related to different and non-overlapping resources, assets, products and markets. Recent researches have also exploited that synergistic combinations of network resources and its substitutability are critical determinants in determining value creation in alliance portfolios. More, RBV scholars argued that benefits created by a resource combination enable a firm to reduce its costs and/or enhance its revenues (improving its operational efficiency and creating additional product and service offerings). In particular, RBV scholars underlined the role of: 1) the opportunity to leverage supplementary or complementary network resources to create more value than the one generated by an individual alliance level; 2) the conditions under which alliance portfolio can exploit resource supplementarity/complementarity to enhance benefits; 3) the mechanism of substitutability of resource combinations in increasing the costs and thus reducing the overall alliance portfolio value.

According to the Market-driven management view, in open and hyper-competitive markets, products are more sophisticated then differentiated by marketing policies because of more frequent non-loyal purchasing behaviours. Non-loyalty underlines the importance of intangible asset and in particular of the network information system

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<sup>45</sup> See Ulrich Wassmer and Pierre Dussauge, 2011, p.50-51, cit.

(producers, suppliers, trade<sup>46</sup>...) in the knowledge management: information by market and marketing research fill the network information system and improve network knowledge, the key to success is to learn from market in a context of continuous change. This aims to create a supply (product or service) that covers 'demand vacuum/demand bubble' to be caught and abandoned better and before the competitors (time-based competition). In order to satisfy demand and navigate over-supplied market, it is necessary that the value perceived (difference between benefits and costs) is evaluated in comparison with the competitors: in global markets, traditional competition on sales is replaced by competitive customer value creation and competitive customer satisfaction.

### **3.5 Competitive Strategic Alliances Success: are they always winning?**

In the global markets, firms constantly shake competitive strategic alliances to share resources and access new business to handle with hyper-competition. Although companies often partner, many alliances fail: there is therefore a paradox given the fact that firms frequently fail to reap the anticipated benefits of most of their alliances. Many successful alliances terminate because they are simply a transitional arrangement that the parents plan to terminate when their objectives are met or when they have valuable new information that makes viable an acquisition or divestiture of that business<sup>47</sup>. Also, not all ongoing alliances are necessarily successful, and some may be continuing more out of inertia because of the high exit costs associated with dismantling it, rather than the inherent success of the partnership. It is important to say that there is not a winning formula for successful competitive-strategic alliances. From a single alliance point of view, the success could be attributed to partner selection (complementarity, compatibility and commitment), to an appropriate governance and operation (flexibility in management of the alliance, trust, regular information exchange, constructive management of conflict, continuity of boundary personnel responsible for the interface between the firm and the alliance, managing partner expectations), and third to the ongoing activities to realise competitive customer value. The failure could be attributed to difficulties and no flexibility and autonomy in management styles, differences in

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<sup>46</sup> Cf. Riboldazzi Sabina, 2005.

<sup>47</sup> Cf. Kogut Bruce, 1991; Bleeke Joel and David Ernst 1991; Balakrishnan Srinivasan and Koza Mitchell P., 1993; Brondoni Silvio M., 2010; Salvioni Daniela M., 2012.

organisations and cultures that are not matched because of the lack of an essential cross-cultural management, concentration and growth rates, country of origin of partners, the presence of concurrent ties, partner asymmetry, age dependence or the duration of the alliance, the competitive overlap between the partners. Firms entering an alliance must develop an appropriate function to collect and leverage alliance management know-how and skills; the process is not without costs, it is time consuming and draws on network intangible assets. The developed alliance capability works as a focal point enhancing visibility, awareness and the previous experience: from a portfolio alliance point of view, the capability relies on skills to create a set of complete, non-competitive, and complementary alliances, to foster and maintain trust across different alliance partners in the portfolio, to resolve conflicts between alliances, to coordinate strategies and operations across alliances in the portfolio, to monitor the extra-additive benefits (and costs) that arise due to interaction between different individual alliances.

### **3.5.1 Market-Driven Winners and Outside-In Capabilities**

According to Day, Market-Driven firm is a company which demonstrates to have superior ability to understand, attract and maintain valuable customers outperforming competitors. In other words, market-driven organisations are market winners because they sense emerging opportunities anticipating competitors' moves with fact-based decisions. It allows attracting and maintaining valuable customers, delivering them a superior value; by leveraging long-term market investments, they know how to keep alive the relation with customers. Market orientation enhances profitability and leads to various benefits such as: superior cost and investment efficiency that contributes to a more powerful value proposition translated into price premium and revenue growth; prevention of competition through the erection of switching barriers; employee satisfaction with consequent customer satisfaction, more commitment and lower turnover costs. Successful market-driven organisations achieve their superior ability through a shared knowledge base made up by information collected by market and marketing researches and competitive intelligence. The knowledge base builds relationships with customers, helps in strategy definition and increases the company focus on market, competitors, demand and its needs. This stresses the importance of

network intangible assets, particularly of information system<sup>48</sup>. This underlines that becoming market-driven is not a quickly process but it takes many years because of the involvement of all corporate functions. The knowledge supports three important elements that reinforce one another and lead to success when they are aligned with a superior value proposition:

- a) A strong shared *culture*, externally oriented, aiming to create competitive customer value;
- b) *Distinctive and superior capabilities* (skills, technologies and cumulative learning) able to read and understand the market (market sensing), to create and keep relationships with customers (market relating) and to think strategically to anticipate market changes and implement winning strategies;
- c) A flexible and coherent *configuration*, including product design, adaptive organisation design, the supporting systems, controls, measures and human resource policies, which is the distinctive context in which the culture and capabilities are embedded and activated.

In particular, market-driven organisations have three types of capabilities: a) inside-out process capabilities; b) outside-in process capabilities; c) spanning process capabilities. Market-driven firms pay attention to outside-in capabilities that connect the firm with the external environment and enable it to compete anticipating market changes and building stronger relationships with demand and suppliers. Outside-in capabilities are distinguished by market sensing capabilities and customer linking capabilities. Market sensing capabilities refer to the ability of a company to sense market trend and to learn of external environment. It is linked to market research, otherwise the study of micro and macro-environmental trends to catch both influenced phenomena such as competition on a market and uncontrollable ones as social, demographic, technological, religious environments. Instead, customer linking capabilities are direct linked to marketing research or ‘the systematic collection and analysis of relevant quantitative and qualitative data and information for a specific marketing situation that a company must face for product, price, place and promotion<sup>49</sup>’. Market-driven organisations are able to develop capabilities in each area of marketing

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<sup>48</sup> To deepen about information system see paragraph 3.5.2.2.

<sup>49</sup> See Brondoni Silvio M., 2003b, p.3.

research (product development capabilities, pricing capabilities, promotion capabilities, channel capabilities), to create and manage relations with demand exchanging information about needs, problems and expectations to improve retention and satisfaction<sup>50</sup>.

### **3.5.2 Market-Space Competition, Cross-Cultural Management and Network Intangible Assets System**

‘Market-driven management emphasise the importance of cross-cultural management strongly profit-focused both on local and global basis. The global network managerial economics typically exploit the following characteristics:

- a) Business network organisation. The global corporate policy of sharing resources normally takes place among the various organisations that compose a business network. In this structure, the global managerial economics develops complex relations and extends its activity into intangible areas (corporate culture, corporate information system and corporate identity) (Corniani 2010);
- b) Global collaborative networks. The sharing of resources by global businesses may involve other organisations via agreements and joint ventures in addition to the various parties belonging to the same network. The global context of competition has brought about profound innovations in the role of strategic alliances between companies and the development of collaborative networks between business groups. In order to compete on a global scale, large corporations promote various means of cooperative competition, especially with selected competitors for fighting common rivals. This may be via equity alliances or non-equity alliances. (Brondoni 2003);
- c) Network relations and the role of the States. The global managerial economics reveal new problems to manage specific national forces and resources. As open markets take hold, national governments tend to lose some of their prerogatives, to the extent that their transnational authority weakens. A market economy demands a strong State that sets and enforces the rules of the competitive game, but globalisation also undermines the role of national

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<sup>50</sup> Cf. Arrigo Elisa, 2012a.



governments. As a result, global capitalism favours the development of supranational institutions (as World Trade Organisation, World Bank, International Monetary Fund, etc.), which can issue consistent directives that orient the decisional sphere of national governments, particularly with regard to environmental, food, healthcare and communication (i.e. the today's basic drivers of global capitalism) (Brondoni 2006)<sup>51</sup>.

The critical in-depth knowledge of cultural differences in inter-organisational relations in global contexts can reduce uncertainty due to unfamiliar markets and can help in resolving conflicts that can arise during the management of alliances. Being competitive in a globalised environment means that no one can no longer focus solely on earning capacity and profitability, but one must also concentrate on research and knowledge<sup>52</sup>. To do so, global corporations have to acquire, manage and interpret information optimally.

In over-supplied markets, the competitive behaviour of a company is based on virtual spaces of competition and intangible assets of product and network. In a market-driven management approach, network's success depends on its ability to manage the system and product intangible assets (product design, brand, pre and after-sales services) both of network/corporate intangible assets (culture, information system and identity). In over-supplied markets the supremacy of network intangible assets faces the instability demand and supply. As we just said before, customers choose between different product classes with different uses with disloyal behaviours. Market-space management emphasises global economies of scale depending on collaborative relationship and on sharing both tangible and intangible assets in a networking system. 'Global economies of scale search for lower manufacturing costs and presupposes complex outsourcing functions, dynamic localisation of plants, large-scale marketing to tackle local demand'<sup>53</sup>. Over-supply determines the hierarchy of network intangible assets on product intangible assets<sup>54</sup>. Network intangible assets can be defined as a viable and

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<sup>51</sup> See Brondoni Silvio M., 2014, cit.

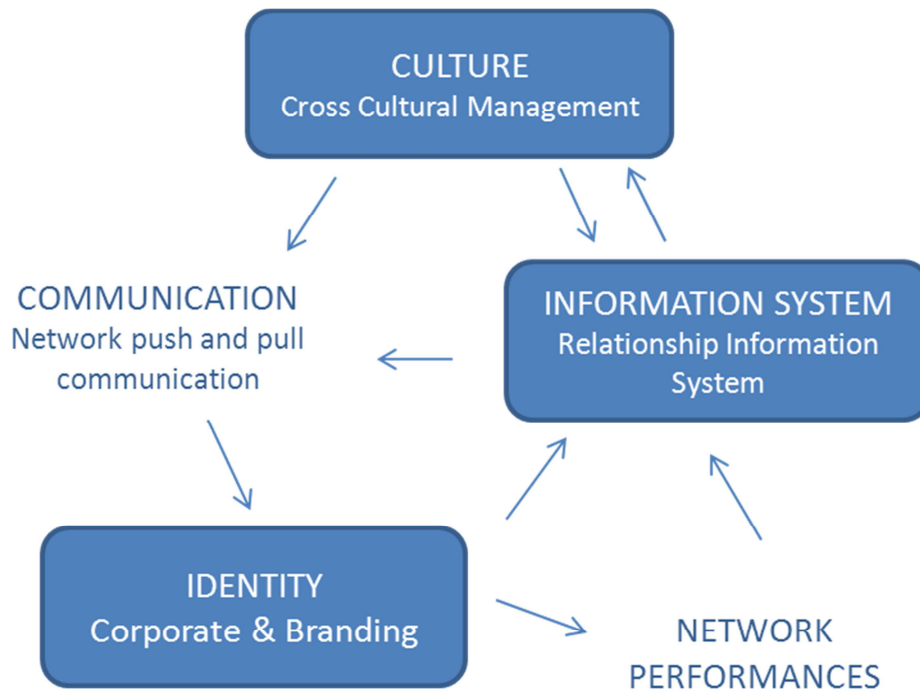
<sup>52</sup> Cf. Codignola Federica, 2012.

<sup>53</sup> See Brondoni Silvio M., 2012b and 2012c, cit.

<sup>54</sup> See Brondoni Silvio M., 2010b to deepen the theme of product intangible assets. Following, some extracts of the reference. Product intangible assets are defined by product design, product brand equity and pre-sales and after-sales services. Product design is essentially related to market studies and market

integrated system of mutual relations among culture, information system and identity: the more they are sophisticated, the better they are managed, the more a firm will have success (see Figure 3).

**Figure 3: Corporate Networking and Intangible Assets System**



Source: Brondoni Silvio M.

research to identify consumer needs and meet the demand (customer satisfaction). A brand is the relationship established with a given market for the success of a specific product; therefore brand equity is the state, the result, the functional value of the brand, the projection of knowledge of the brand (awareness and image) at a given time. Brand equity asset must be supported through a conscious communication and attention to performance and corporate responsibility. Pre-sales services are designed and delivered by manufacturers and/or financial companies directly to end buyers or to sales intermediaries (retailers, wholesalers, prescriptors) and can be broken down into two main types: on one hand, the services planned by product marketing and put in place to target purchasing motivation; on the other hand, the services designed to create specific advantages in transaction costs and therefore destined to generate particular choice motivations, that are exclusively economic and financial. After-sales services (servicing, product up/down-grading, maintenance, repairs, spare parts, learning and training, trade merchandising) guarantee the full, functional use of products and services after the purchase. After-sales services create information flows from the clientele to the company and generate huge costs (often sustained before the sale); costs and the advantages of customisation (in the medium/long-term) conflict with profitability targets, with the result that key services are contracted out and different after-sales outsourcing policies are developed, defined as: outsourcing for costs (scarcity economies), outsourcing for branding (controlled competition economies) and outsourcing for value (over-supplied economies).

To success in an intense and hyper-competitive space, a firm must assess dedicated costs to develop, maintain and modify but also to implement again its intangible assets system. That's because it is not possible to replicate the same system born for a context in another one. The elements are linked to the system they have been developed for, so they are not transferable and they must be managed with no geographical limits. The way the elements are combined determines the competitive strategy with which a firm is competing on a market and controlling the demand. It shapes the route to gain competitive advantage.

### **3.5.2.1 Network Intangible Assets System: Network Culture**

Network culture represents the rules and the behaviour which have proven to be successful in a company's life<sup>55</sup>. The central importance of a network culture is crucial today to address globalisation, the challenges of market-space competition and to manage the interaction of internal, external and co-makership relations. It assumes a central role in market-space competition which orientates network culture to a continuous benchmarking with competitors.

The corporate culture reflects the personality of a network both inside and outside the organisation, it is spread in space, but nevertheless it is oriented to homogeneous and synchronous conducts: externally, the culture influences the personality/the image of a network, continuously valued by the relationships established with several shareholders; while inside the network culture is addressed to create identification, therefore, to clarify the company's guiding values and rules of conduct for the attainment of the common objectives<sup>56</sup>.

### **3.5.2.2 Network Intangible Assets System: Network Information System**

Network information system is the central nervous system of a company; its level of openness to internal and external stimuli determines the way a company will exploit opportunities and face threats. In global saturated markets companies are forced to share knowledge and information with competitors, providers and clients. Knowledge is a strategic lever and information system becomes critical in corporate development while

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<sup>55</sup> Cf. Corniani Margherita, 2012a.

<sup>56</sup> Cf. Brondoni Silvio M. and Salvioni Daniela M., 2008

collaboration within firms travels on specific channels and flows of network information: the corporate culture plays a central role in configuring the information system as a tool to govern internal and external communication flows in a no-boundaries competition space with a well-defined network identity. In this hyper-competitive context, the network information system is a valuable tool to spread knowledge from market and marketing researches to manage 'demand bubble' being the first to meet them (time-to-market) and achieving a consistent income by swiftly abandoning the demand bubble (time-based competition), at the arrival of competitors-imitators and in establishing prices oriented to competition (competitive pricing)<sup>57</sup>.

### **3.5.2.3 Network Intangible Assets System: Network Identity**

Network identity is the status at a certain moment of the relation established by a mega-organisation on a specific market. In particular, network identity derives from: push and pull communication flows of the company to grow the relation with the market; rumours; competitors; demand and organisations. A network tends to pursue control of global competition space as a whole, independent of specific products but related to a network brand equity referred to a 'network corporate brand'; some non-equity strategic alliances have been used to increase network identity i.e. licensing to gain vast recognition exploiting a network's brand equity or franchising agreement to surpass physical boundaries through its own flexibility<sup>58</sup>.

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<sup>57</sup>Cf. Brondoni Silvio M. 2010, Corniani Margherita 2008, Rancati Elisa 2005, Garbelli Maria Emilia 2008, 2005, 2002.

<sup>58</sup> Cf. Brondoni Silvio M., 2010b and Albanese Fabio, 2000-2001. Brondoni shows a number of case studies in pharmaceutical and fast mover consumer goods industry. 1) In August 2009 Procter & Gamble sold its pharmaceutical products division to the U.S. company Warner Chilcott. 2) To ensure a dividend to its shareholders, Unilever is abandoning products with a low added value as the frozen food market, the olive oil and the jam markets. 3) Nestlé has sold several brands leaving the cheese market, the cured meat market, the olive oil and fats market, the pasta and bread substitute market. 4) The Barilla Group has sold the leading German chain of bakery Kamps in order to rationalise non-strategic assets.

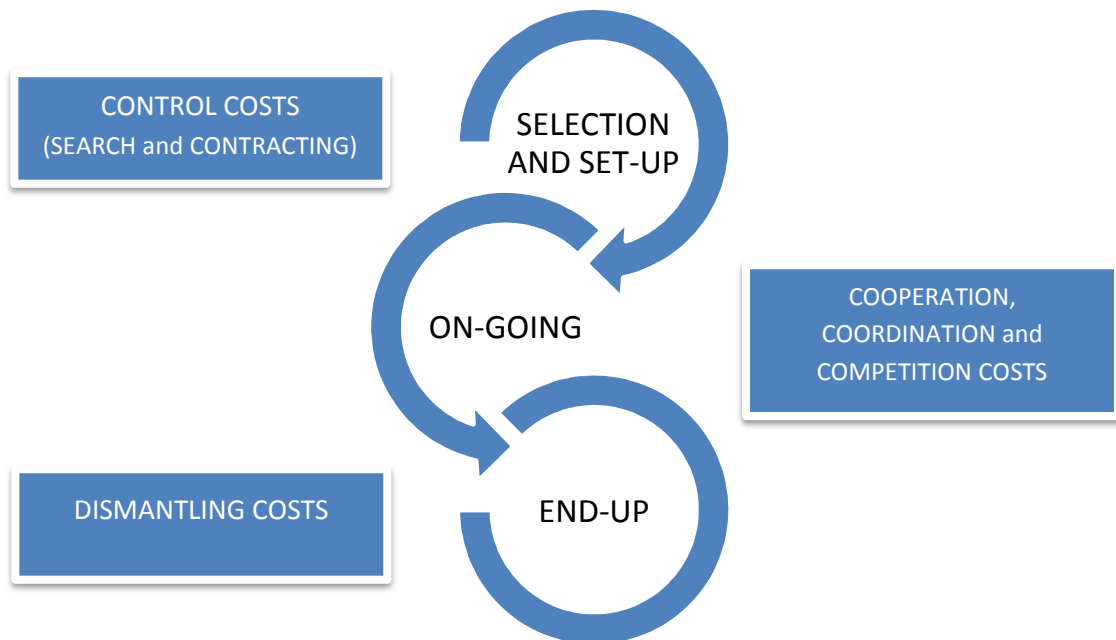
According to Albanese 2000-2001, ex C.E.O. at Coca Cola Company Italy 'merchandising is enormously important as it reflects brand and company quality and image. The Coca-Cola Italian Region merchandising service is an integral part of customer and consumer service and must be professional, consistent and ongoing. Coca-Cola Italia is focused on developing and maintaining a merchandising culture and organisation at all levels. The goal is to increase impulse buying, increase Coca-Cola Italia and customer profits and increase volumes. As far as merchandising is concerned, The Coca-Cola Company strategy is to consolidate that strong, fundamental ally represented by the trade and this occurs at three distinct, but equally important, levels: drafting specific agreements; sales calls to purchasing points; through an active, ongoing, professional presence at sales points. (...)Everything communicates and all of us assign our own value to a brand from the numerous contacts with it. The market only rewards companies that communicate their value consistently'.

### 3.6 Competitive Strategic Alliances Costs

As the previous themes, also alliances costs have been studied both with the transaction cost approach and the resource-based theory and market-driven management. Generally, firms incur different types of costs; in particular, alliance related costs can be categorised according to an alliance lifecycle (see Figure 4):

1. Selection and set-up phase: control costs (search and contracting)
2. Ongoing phase: cooperation and coordination costs
3. End-up phase: dismantling costs.

Figure 4: Alliance Costs according to Lifecycle



Source: Author's graphic design.

In the first phase, firms assess and select partner as well contract negotiation and governance type. More properly in this phase occur search costs and contracting costs that the existing literature calls control costs. Search costs related to market and competitors in order to search for the good partner, while contracting costs refer to the negotiation and the writing of a contract<sup>59</sup>. Control costs are stressed by the transaction cost economics alliance literature which is primarily concerned with the selection of

<sup>59</sup> Cf. Williamson Oliver E., 1991; Hennart Jean-Francois, 1988.

appropriate alliance governance structures to pre-empt opportunistic behaviour by alliance partners<sup>60</sup>.

Cooperation, coordination and competition costs originate in the on-going alliance phase. Cooperation costs are represented by the managerial time and effort spent on an alliance while coordination costs refers to the activities related to handle joint tasks and ensuring integration between alliance partner such as cross-cultural management institution, intangible assets management, sharing costs, communication flows setting, conflicts resolution, monitoring, sanctions enforce, etc<sup>61</sup>.

According to resource-based view scholars, competitive costs include costs related to the weakening of the competitive position vis-à-vis the other partner due to the leakage of resources and capabilities. The substitution of a resource combination privately deployed by one of the focal firm's partners exacerbates the competitive intensity between the focal firm and that partner, increasing the likelihood of conflict between the two firms, opportunism by the partner (substitutability of private partner resource combinations), and resource and capability leakage<sup>62</sup>. These last three issues negatively affect the on-going alliance costs the focal firm incurs in its cooperation with its partner.

In establishing an alliance, partner companies have respectively engaged relevant stakeholders, creating expectations around innovation, growth, cost-savings and competitive positioning. Specific intangibles assets, functions, reporting structures and processes have been introduced to sustain the alliance, so that the dissolution of an alliance ripples through day-to-day operations, department budgets, meetings, product development plans, staffing and training plans and the delivery of service to customers. Many agreements could lack of important specifics around dealing with key aspects of a dismissing such as asset allocation, protection of intellectual property and conflict resolution procedures. Each alliance member firm should identify employees' specific roles and responsibilities, suppliers, industry analysts, other alliance partners, the media, and customers that had previously been shared by a partner, in order to reallocate or to replace them but also to prepare them to some possible negative impacts of the end of

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<sup>60</sup> Cf. Dyer Jeffrey H. and Singh Harbir 1998; Gulati Ranjay, 1998; White Steven and Lui Siu-Yun, 2005; Hennart Jean-Francois, 1988.

<sup>61</sup> Brondoni Silvio M., 2010a; Corniani Margherita, 2010; Gulati Ranjay and Singh Harbir, 1998; White Steven and Lui Siu-Yun, 2005; Dyer Jeffrey H. and Singh Harbir, 1998.

<sup>62</sup> See White Steven and Lui Siu-Yun, 2005, cit.

alliances. It may take several months before having a complete picture of how an alliance worked and how a firm will work without sharing resources and capabilities with a partner: according to the above, it is clear how a soon-to-be ex-alliance partner firm sustain high dismantling costs in the end-up phase.

#### **4. Global Networks and Global Product Policies in Managerial Economics**

The global capitalism, indeed, radically modifies the traditional basic principles of industrial production: the coordinated interaction of workers, technology and materials, with a high level of standardisation in the time-space sequence, where the direct control and proximity limits characterise physical aspects of the business (immutability of the goods produced, a finite number of suppliers, fixed manufacturing plant locations, etc.)<sup>63</sup>. With globalisation policies based on continuous and planned increase in sales of determined products make way for the obsessive research of innovation responding to demand vacuum and non-satisfied needs. Global network productions are even more planned to simplification imposed by time-based competition and by new demand trends lead by the growing request of disposable products.

Global product policies <sup>64</sup> can be studied by combining competitive conditions with local or global markets. In scarcity of supply conditions, the product is undifferentiated and the consumer is not able to catch the differences with the competitor's products, a sort of non-transparency of the product. Therefore, the dominance is based on materials offer's characters and the competition is played on different product classes with the same functional use, thus triggering a price competition. The price is a function of the quantity -  $p=f(q)$  - and the quantity sold coincides with the quantity produced, the margin accordingly is realised compared to the cost of production. If we look to local markets, an obvious example is that of the beginning of car industry.

□ *The industrial era began around 1900 and saw the birth of thousands of builders; the revolution took place in 1914 with Ford, the Model T and the assembly line: the car turned into a mass product, the manufacturing market replaced the original single. Ford sold his car with the mottos 'any*

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<sup>63</sup> Cf. Brondoni Silvio M., 2002.

<sup>64</sup> See Brondoni and ISTEI school of Management in 'Symphonia. Emerging Issues in Management'.

*customer can have a car painted any colour that he wants so long as it is black' and 'what is not there does not break'.*

The fuel market offers a best practice for the study of product policies in scarcity of supply conditions and global markets.

□ *An example is the Royal Dutch Shell plc/NV Koninklijke Nederlandse Shell, known as Shell, the multinational company operating in the oil, energy and petrochemical industries. Part of the seven sisters, along with BP, ExxonMobil and Total, it is one of the world's four major private players in the sector of oil and natural gas. Shell operates in over 140 countries throughout the supply chain of petroleum products (Oil Company 'vertically integrated' with a strong technical and commercial expertise and six 'core business': exploration (search for oil fields) and production, gas and energy, downstream, chemicals, renewable energy (solar, wind and hydrogen) and trade/distribution to the end customer. The activities related to natural gas and those in the chemical sector (production and sale of products derived from hydrocarbons) contribute significantly to the company's profit. The Shell product policies are the same in all markets of the world, with some small local adaptation: Shell V-Power Unleaded, Shell V-Power Diesel and LPG are sold everywhere around the world, but in some markets it provides particular products as Biodiesel in UK or Shell Unleaded low aromatic in Australia (See Shell Corporate Website).*

In dynamic equilibrium between supply and demand, the product undergoes a differentiation and the product intangible assets (brand, pre and post sales services...) are next to the tangible characters: the consumer is more attentive and not faithful, unable to distinguish between the characteristics of the products unleashing a non-price competition -  $q=f(p)$  - and competition between the same class of product and the same functional use. Because not everything that is produced is sold, the production is the sum of goods sold and unsold, which causes an increase in costs, particularly marketing and a profit depending on commercial cost.



□ *With reference to the local market, if we said Mercedes-Benz, we would now refer to one of the best known luxury car brand, denoting status and belonging. Mercedes-Benz is a multinational of Daimler automotive group, the inventor of the first automobile; along with Audi and BMW, it is part of the German Big 3. Mercedes-Benz has adopted a positioning strategy that identifies it as a reliable manufacturer with safe vehicles, which results in price premium over similar competitors. It also provides outstanding service solutions related to its products. The Mercedes vehicles are manufactured in many countries in the world, but the strong segmentation strategy allows it to create different product differentiation strategies to target different customer segments. The target market for Mercedes-Benz is made up of quite young people (25-44 years), both men and women, with a high income, mostly rich. For this reason, Mercedes-Benz does not produce low price vehicle and, because of expensiveness, the brand it is not so popular among very young people. The segmentation strategy of Mercedes-Benz is very strong both in terms of geography (city, region, country) and of demography (age, gender, income, occupation, ethnicity, social class, family status, education), behavioural and physiographic. Let's consider the C-Class model, sold all over the world and mainly targeted to young and sporty people of some wealthy countries. Mercedes-Benz C-Class demographic includes both young and middle-age people, both male and female with middle to high incomes. As Mr. Hubertus Troska, Member of the Board of Management of Daimler AG and head of China put it: 'Made in China, for China has always been a key element of our core strategy, and our all-new C-Class is a vivid demonstration of this strategy. Designed and developed clearly with our Chinese customers in mind, this design, born in Beijing, will be one of our top drivers of long-term growth in the country. The C-Class stands for Daimler's commitment to sustainable growth in China. Investments in localisation of production, research and development and our people are certainly fundamental for our future success in the country, and exemplified on point by our all-new C-Class. It goes without saying that these investments will continue in the future, testifying to our*

*commitment to China.’ For the physiographic segmentation, the C-Class is commonly purchased both by individuals with children (Estate model) and by childless individuals (Sedan, Sport, Coupé, AMG models). Among the reasons why customers prefer the C-Class is the status of luxury car and safety. On a behavioural basis, the C-Class is a car for heavy users, a day by day shopping or work car, full of qualities and beauty, performing speed, etc. (See Mercedes-Benz Corporate Website).*

The controversial tobacco industry is one of the most valuable examples of product policies in global markets.

□ *British American Tobacco is a global tobacco company with more than 200 brands sold in over 200 markets. And with one billion adult smokers around the world, BAT manufactures the cigarettes chosen by around one in eight of them. BAT business operates at a local, as well as global level, not owning tobacco farms or directly employing farmers. The aim of BAT is to understand and meet the different profiles and preferences of adult smokers, so that they can increase their market share. More than 1,000 BAT leaf technicians worldwide support some 90,000 contracted farmers worldwide. In 2015, BAT sold 663 billion cigarettes in more than 200 markets around the world, made in 44 factories in 41 countries, employing more than 50,000 people worldwide, with many more indirectly employed through their supply chain. British American Tobacco alone contributed approximately £30 billion to governments worldwide in excise and other taxes in 2015. Few companies founded in 1902 are still going from strength to strength. Fewer still are leaders in more than 55 markets. The five leading brands - their Global Drive Brands (GDBs) - are Dunhill, Kent, Lucky Strike, Pall Mall and Rothmans, they all play a key role in the growth strategy and now account for 45% of all the cigarettes BAT sell, up from 34% in 2011. Their brand portfolio also includes other popular international brands with strong market positions in many countries such as Vogue, Viceroy, Kool, Peter Stuyvesant, Craven A, Benson & Hedges, John*

*Player Gold Leaf, State Express 555 and Shuang Xi (See British American Tobacco Corporate Website).*

Finally in oversupply conditions, the product is classified as a bidding system, an attribute basket that goes beyond mere material characteristics, which is also made up of product and corporate intangible resources. The consumer is more and more experienced and knowledgeable, can choose to buy between the products of different classes of product with different uses. The battle is always on the front of a non-price competition; competition takes place on the ability to create offers that go to meet the demand 'vacuum', suddenly abandoned. The production is based on sold, unsold and never be sold, moving the calculation of the margin compared to the overall product.

□ *Esselunga SpA, founded in 1957 by Bernardo Caprotti, is a leading large Italian retail company operating in Northern and Central Italy (Lombardy, Tuscany, Emilia Romagna, Piedmont, Veneto, Liguria and Lazio) with 152 stores, including supermarkets and superstore, 38 EsserBella Profumerie and 82 Bar Atlantic. In 2015, Esselunga Group recorded revenues and EBITDA significantly increased respectively equal to 7.312 billion euros (+4.3 compared to 2014, while the market grew by 2.4%) and 625 million Euros (+20% over the previous year). The price-cutting policy, despite an increase in supplier costs, proved once again a key of Esselunga strategy, rewarded with a customer growth of 5%, also driven by numerous promotional initiatives (See Esselunga Corporate Website).*

The car's mass market offers innumerable examples for the study of product policies in a global market.

□ *An example is the production of the Toyota GT86 Coupé and the twin version Subaru BRZ. The cars were not significantly different, except small changes in the front and in the suspension department and a different frieze at the top of the fender adjacent the rear view mirrors. The interiors are almost identical too. The car, in fact, share the same production platform adjusted based on the Subaru Impreza, fitted both an engine developed by*

Subaru but integrated with the Toyota injection systems <sup>65</sup>(See Toyota and Subaru Corporate Websites).

#### 4.1 New Production Paradigms: the Lean Production

The history of production teaches us that it started from a handicraft production, as the one enabled by Benz in 1886 to produce the first motor tricycle or by Fiat in 1899 to produce 26 copies of 4HP or even by small workshops of thousands of small builders that were born in the period. Only in the second decade of the 900's, Ford understood the importance of launching mass production and the importance of giving everyone a car as long as it is black<sup>66</sup>. Table1 explains the different characteristics of the three production types -handmade (handicraft) production, mass production and lean production- in terms of role of machinery; organisation; professionalism level; product flows; production level and relation with suppliers.

Table 1: Production Types

	<b>Handmade Production</b>	<b>Mass Production</b>	<b>Lean Production</b>
<b>Role of machinery</b>	Increase craftsman capacities	Cancel part of the worker's skills	Cancel part of the worker's skills
<b>Organisation</b>	Independent, workshops or small laboratory	Hierarchical where often the worker is in conflict with the management.	Team based and full collaboration.
<b>Professionalism level</b>	Extremely high, it makes the difference	As low as possible. It affects remuneration and ease recruiting.	Very high. Flexibility and responsibility are the key factors for kaizen.
<b>Product Flows</b>	Modest. The craftsman moves around the product	High. Large production batches to make economies	High but with small lots.

<sup>65</sup> In the next chapter, modularisation and BTO built-to-order will be discussed.

<sup>66</sup> See next chapter.

	which is stopped in of scale. the workshop.		
<b>Production level</b>	Low and built-to-order	High. Production level determined on the basis of forecast of demand.	High but the break-even point is much lower than that of mass production. Market pull.
<b>Relation with suppliers</b>	Inevitable. High tax of purchases from others parties.	Some parts are designed and built internally, other are ordered to suppliers.	Team system characterised by a high degree of collaboration with a small number of suppliers.

Source: Adapted from Pellicelli G., 2014.

Global markets productions are characterised by minimised R&D expenses in order to obtain maximised product and corporate results. Because the logic of competition is ‘First Community, Business Second’, the approach to production is of slender, lean production, with a competitive focus to the time that favours the just-in-time; communication is faced with the so-called ‘push/pull dilemma’ and new and not elementary performance metrics arise, such as profitability by area, designed to measure a global enterprise.

Lean production is a philosophy that aims to minimise and cancel wastes and that has exceeded the limits of mass production developed by Henry Ford and Alfred Sloan. Toyota is the pioneer of lean production. The story has it that the principle of the Toyota Production System (TPS) is sprung from Ohno during his trip to the USA and more precisely in a supermarket when he noticed that the products were placed on the shelves and picked up from stock when the consumers took them. Since the objective was to build a similar plant in River Rouge but money was scarce, Toyota had to look for more flexible methods and encouraged workers to develop ideas for improvement (introduction of the principle of kaizen, a suggestion system).

There are five guiding principles that outline the theoretical model of lean production:

1. define the value from the customer's point of view; what the customer is really willing to pay;
2. identify the value stream and the set of actions that lead to make the product or service;
3. set an ongoing flow of activities, as everything must be done by process and not by function, without pauses or interruptions;
4. set up activities according to the 'pull' logic and not the 'push' logic or set up an activity only when the downstream process requires it;
5. pursue perfection through continuous improvement.

A culture of humility is the one at the base of the TPS, based on six pillars:

1. Just in time;
2. Six zero factory;
3. Kaizen;
4. Kanban;
5. Automation and autonomy;
6. Involvement of suppliers.

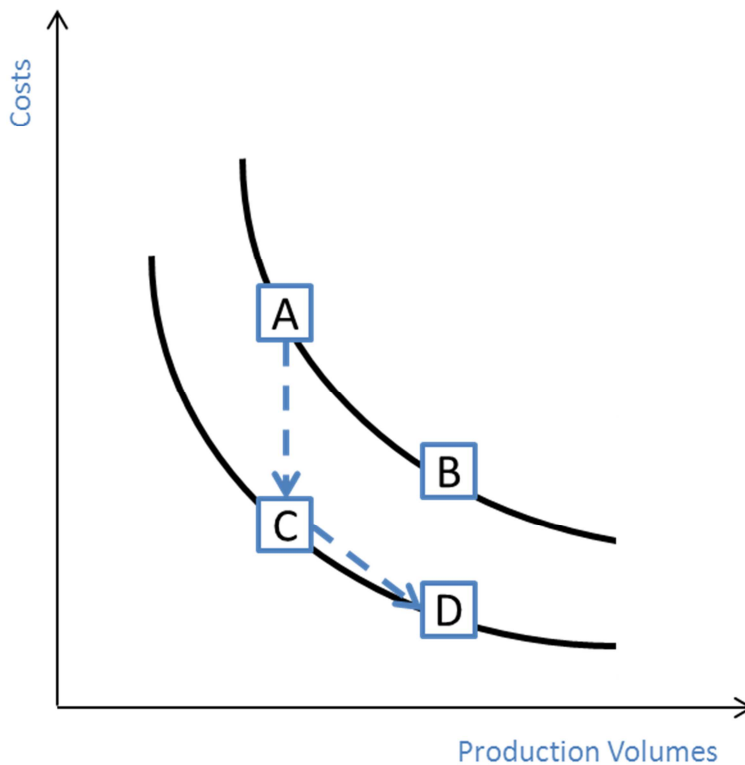
The Just-in-time (JIT) is based on two drivers: 'pull system' and 'customer needs'. The underlying element of the JIT is the reduction of time between the order placed by the customer and the delivery. Alike supermarket products put on the shelf following to the actual demand, also any Toyota piece or finished product arrives at destination only when necessary, the opposite of Detroit 'push system'. The flow of materials travelling from the last to the first stage of the supply chain is maintained continuous and controlled, thus generating flexibility. JIT essentially provides the perfect symmetry between the supply of goods produced and the demand on the market and that any work should be supplied with the required components to the required time and in the required quantity. Although it requires greater and efficient communication throughout the supply chain, the 'pull system' allows economies of space and stocks (inventory reduction, working capital and investments in buildings) but also cost savings (simplification of operations). The principle of reducing redundant resources is based on

the 'six zeros factory': zero defects, zero conflicts, zero bureaucracy (waste paper), zero waiting time for the customer, zero downtime, and zero inventory. In particular, the forms of waste defined within the Toyota Production System are related to: the excess of carried out activities which do not produce value; the unnecessary transfer to reach materials away from the point of use; the production of scrap or rework; the purchase or production of exceeding materials with respect to the next process needs; the overproduction compared to what is required by the customer or next process (pull policy); the non-productive use of time; the transport of material without connection to the creation of competitive value. The TPS is based on procedures assigned to plant managers and also to the employees giving automation and autonomy: the worker trained to perform standard procedures, however, is invested with the power to halt production at any time if the quality is threatened.

For many years there was scepticism about the TPS, well silenced by the MIT research 'The machine that change the world' that showed the differences in terms of productivity and quality of the plants of Japanese, North American and Europeans firms. The MIT research adopted as measure of productivity the number of hours required for the final assembly, demonstrating that the total hours for Japanese manufacturers amounted to 17, 25 for Americans and 36 for Europeans. It was concluded that the data depended on the degree of ease of assembly of the final vehicle (manufacturability) and not at all surprising Toyota vehicles were found to be the easiest to assemble. A second comparison was made on the quality; as previously said, the Japanese manufacturers were pursuing the goal of total quality management through the principle of kaizen, the continuous improvement without end, while American and European builders were based on 'good enough' quality principle, setting a number of defects considered acceptable. 'The machine that changes the world' research has thus shown that lean manufacturers employ less time to assemble a vehicle and that there is a trade-off between productivity and quality in mass production: the Americans were able to quickly increase productivity at the expense of quality by moving faster assembly lines while Europeans were able to achieve a higher quality at the expense of productivity.

Through lean production the Japanese were able to act before and better than competitors, surpassing the scale advantages of large-sized Western companies. As shown in Figure 5, starting from point A, Japanese manufacturers knew they could not overcome their competitors with higher production volumes and higher potential economies of scale, the point B of the curve of the scale economies. Therefore, taking advantage of the lean production, they moved to the lowest point C along the curve of the economies of scale and pressed on the accelerator arriving at D before and better than their Western competitors.

Figure 5: The Japanese Advantage on Economies of Scale Curves



Source: Adapted from Maxton Graeme P., Wormald John, *Time for model change*, 2004.

However, the JIT is not without risks and Japanese firms have well-experienced it, after the nuclear disaster following the earthquake of 2011. The changes in consumer expectations, fluctuations in commodity prices, every economic change, interruptions in the supply chain, conflicts between organisational cultures in the absence of a cross-cultural management and the slow adoption of the JIT model by smaller suppliers are the main problems in which a manufacturer adopting the TPS may stumble.



## 4.2 New Production Paradigms: to innovate or to imitate?

Just lean production is not sufficient. Innovation too is a key factor in the development; literature shows the effects arising from research and development (R&D) in terms of increased productivity in the use of factors of production, capital and labour, promoting growth. The effects go beyond the boundaries of the firm to the use/advantage of other companies in the sector (intra-sectorial effects) or in other sectors (cross-sectorial effects). High-tech sectors invest the most in research and development (R&D) with an impact on productivity and social return (generation of externalities) higher than that found in sectors with lower technological intensity and in firm with modest dimensions.

From R&D activity arise many knowledge flows that are divided into different networks:

- the flow is conveyed from standardised/encoded manufacturing processes which allow the passage of knowledge from company to company;
- the transfer of knowledge is accomplished through collaborative alliances for the development of new technologies or through the mobility of workers from company to company (R&D experience a multipolar development that encourages the creation of decentralised technological development structures which operate with multi-ethnic personnel and are located in the most important world cities);
- the knowledge transfer also takes place through collaboration with universities and other public and private research institutions (the role of world cities)<sup>67</sup>.

Globalisation produced a structural change in business networks. The primacy of knowledge management, the worldwide localisation of production and the new policies of innovation and imitation have been modified in opportunities for global competitive alliances and joint ventures. Global networks significantly reduced the importance of 'context specific skills' because of nowadays Internet, which pushes the knowledge into a standardised format with minimal cost that can be readily transferred across country

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<sup>67</sup> See. Unioncamere, Brondoni Silvio M. and Corniani Margherita.

borders and firms<sup>68</sup>. Industrial rivalry takes place between rival technological and production networks defined by a large number of differentiated firms with different knowledge bases, particularly focused on management of innovation and creative imitation. The R&D activities represent a key-intangible asset, aiming to develop the firm innovation and imitation policies, to anticipate demand trends and the initiatives of the competition, even collaborating with key competitors. Innovation are complex technical systems that usually originate from the collective efforts of inter-related firms even if the innovation value chain is not completely internalised within individual firms; while global production networks identify different categories of imitations as product pirates, or counterfeits; clones, or knockoffs; design copies; creative adaptations; technological leapfrogging; and adaptation to other industry<sup>69</sup>.

Global markets impose an important transformation of the firm's growth policies where innovation and imitation of products and processes play a primary role in over-supplied competitive landscapes. Even if they both have the common goal of maximising profitability and performances in the short term, in open markets, innovation therefore loses its role of 'ideological hierarchy' over imitation. Global networks emphasise the relation between innovation and imitation while they pay less attention to the capacity to accumulate know-how, because the success of R&D is measured by the capacity to exploit the competition. So, networks are induced to target R&D spending on open innovation policies in which: the boundaries between imitation and innovation are fluid; the profit level of the innovation/imitation initiatives is an

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<sup>68</sup> See Brondoni Silvio M., 2002.

<sup>69</sup> Brondoni (cf. Brondoni Silvio M., 2012d) citing Bolton defines the different categories of imitations. Counterfeits and knockoffs are duplicative imitations, but only the first is illegal. Counterfeits are copies that merely imitate an original brand. In contrast, knockoffs are legal products that closely copy the original products in the absence of copyrights, trademarks and patents and sell them with their own brand names at far lower prices, knockoffs often present a better quality than original products. Therefore, when it is legal, duplicative imitations are a bright strategy for the firms with low wages and mature technology. On the contrary, global networks consider as creative imitations the imitative products regarding: design copies; market adaptations; technological leapfrogs; and adaptations to another industry. Design copies follow the market leader but stay on the market with their own brand name and specific engineering features. Product adaptations are innovative, with improvements inspired by existing products. Technological leapfrogs get advantage with newer technology and enable the imitator to leapfrog the innovator. Finally, adaptations to another industry take on the application of innovations in a certain industry for using them in another. In general, creative imitations are focused on generating imitative products, but with new features. These imitative products involve benchmarking, strategic alliances, and substantial investments in R&D.

absolute priority; and finally, a return on investment can be achieved in the very short term<sup>70</sup>.

‘Global corporate policies of innovation can be summarised in:

- *Global product innovation.* The creative development of a new product grounded on new technology and linked to unmet customer needs. Product innovation, research and development are targeted to create products destined to break the existing continuity in the link between supply and demand (breakthrough), and, naturally, even between competitors;
- *Global process innovation.* The development of new ways of producing products that leads to advantages on costs, time or quality, where costs devoted to product development take priority. Global process innovation targets the investments in development and research to create products that are destined to maintain the existing relationship between supply and demand, improving only the competitive advantage provided by the product’s distinctive features;
- *Global competitive innovation.* Large corporations with heavy investments on R&D pursue global policies of competitive innovation when corporate growth is focused on the development and research of products specifically designed and produced jointly with competitors.

Therefore, the imitation processes are the result of corporate strategies created by largest corporations to compete and to grow on global and over-supplied markets. Conversely, global networks define the corporate policies of imitation as:

- *Global product imitation.* With the global product imitation, firms pursue a competitive policy as followers, to reduce R&D costs, to minimise the risk of acceptance of a product on different markets, and finally to choose the ‘right moment’ to enter a market (*time-based competition*). Development and research activities of global product imitation are focused on increasing the quantities of specific products offered pursuing global competitive policies based on oversupply.
- *Global process imitation.* Products designed and manufactured in massive quantities imitating similar products. Global process imitation pursues a policy

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<sup>70</sup> See Brondoni Silvio M., 2012d, cit.

of corporate growth, in markets that are in recession and over-supplied, with a competitive advantage based on products obtained with highly imitative manufacturing processes. Global process imitation expresses a very aggressive competitive policy, directed at implementing a range of highly profitable products, made up of products that are poorly differentiated and designed to satisfy very similar needs and preferences.

- *Global competitive imitation.* Products designed and assembled in close collaboration with competitors. This policy demands high investments in R&D, aimed at creating products with high commercial margins and with high short-term returns on the capital invested. Global competitive imitation policies based on global cooperative alliances allow global players to share the risks of launching and handling imitative products on a vast scale<sup>71</sup>.

In global managerial economics, knowledge production becomes the critical competitive factor and forces the Nation-States to develop a global perspective in developing world cities, large cities, leader in knowledge production designed to meet the growing needs of global networks<sup>72</sup>: the innovative capacity of a country results in goods, services, organisation of the production process of increasingly high quality. Product and process innovations are to support long-term growth, increasing the overall productivity of the system.

## **5. Global Networks and Localisation Choices in Global Managerial Economics**

In global corporate policies, the localisation of 'business areas' is articulated and has high variability due to collaboration and cooperation both horizontally and vertically, which results in short-term effects. In fact, the static localisation becomes a constraint from a market-driven point of view for the global firm, while the short term dynamic localisation is an opportunity to exploit economies of scale and networking. It thus refers to the relocation of production, research, business and so on. Delocalisation allows: reducing production costs; having specialised labour at low cost; having raw materials on the spot; operating in the presence of markets with a strong development;

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<sup>71</sup> See Brondoni Silvio M., 2012d, cit.

<sup>72</sup> See Brondoni Silvio M., 2010a, cit.

integrating the production process vertically; establishing partnerships with potential competitors; overcoming trade barriers; using facilities and financial simplifications. On the other hand, the relocation also presents numerous disadvantages: reduction in the employment level; country risk; increase of logistics costs; quality control loss and consequent increase of them; risks related to the transfer of know-how, image loss; loss of domestic production.

‘From the point of view of manufacturing processes, the highly intense competition that corporate networks have to address on today’s markets derives from the complex interaction of numerous factors: the over-supply of numerous products, well above the capacity of demand to absorb it, the central importance of the time factor in manufacturing processes and demand satisfaction, and environmental instability. A company that addresses this complexity tackles the manufacturing issue, and therefore its own relation with time and with space (manufacturing localisation) from a new angle. Markets dominated by over-supply stimulate companies to search for solutions that can satisfy the timing (reduction of action-reaction times) and spatial demands of manufacturing (control of strategic areas with neighbouring manufacturing units). Companies seem to respond to these needs with complex mechanisms designed to develop competitive relations ‘individually’ or in association with other companies, either suppliers, distributors or even competitors. Manufacturing localisation is therefore becoming a particularly complex problem and the criteria usually adopted in the choice of a location (proximity to supply markets, country incentives, etc.) must be supplemented with a range of additional considerations. As a result, the choice of manufacturing localisation abandons the sphere of static, long-term evaluation, typical of proximity relations between the manufacturing and consumption of a product. At the same time it is not conditioned in the long term by public measures to encourage settlement, giving priority to the critical nature of certain competition costs (R&D, local antitrust mechanisms, marketing, etc.), which are very sensitive for a company’s management and development. As a result, manufacturing localisation takes on specific connotations of dynamism in time and in space. With globalisation, therefore, the decision to localise production brings out the most competitive corporate strategies, which focus specifically on:

- ‘upsizing’ policies (implemented with acquisitions, mergers, joint ventures and alliances), designed to control the manufacturing agreements with certain suppliers (co-makers) and above all with the competitor system. The success of increasingly complex products and services (and related added value processes) shifts competition to a chain of added value and the network of competitors, since the competitive advantages derive from the integration of management functions that go beyond the corporate boundaries of client, manufacturer and supplier;
- policies to develop the company’s ‘corporate profile’, which is considered a competitive factor. The policy to state a corporate personality, which is valued inside and outside the organisation, aims to establish a specific ‘invisible asset’. The corporate culture thus constitutes a determinant that is intended to extend the competitive space, making it possible to shift the physical boundaries of manufacturing outside the company (for example, by backing up traditional manufacturing processes with outsourcing or networking policies), while maintaining close control over the identifying characteristics of brand equity. In companies that focus on ‘market-space management’, the decentralisation of manufacturing therefore presupposes raising the profile of ‘corporate identity’. In company networks set up to compete on open markets (market space management), the attraction of the ‘network identity’ thus prevails over the local opportunities of the ‘development paths’. At the same time, the planned and encouraged rotation of employees (by entrance/exit times and conditions) is replacing traditional continuous training programs (linked to the static nature of the manufacturing plants). And finally, salary developments (once based on seniority) have been replaced by incentive plans on entry and by selective development plans, which tie salaries to achievement of economic and meta-economic ‘tasks’ (network corporate responsibility),<sup>73</sup>

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<sup>73</sup> See Brondoni Silvio M., 2010b.

## **6. Global Networks and Distribution Policies: Brick-and-Mortar and Click-and-Mortar**

Globalisation and digitalisation have an impact also on network distribution strategies: Internet allows businesses to assess market-space management to face over-supplied markets, eliminating physical distances and allowing access to products and services on a global scale. This leads to a multi-channel management, to new forms of competition where different distribution channels are used to access the same markets: virtual distribution channels are alongside physical ones (click-and-mortar distribution). ‘The term ‘click-and-mortar’ denotes an integrated distribution system in which traditional distribution elements (physical stores, warehouses, stocks, information systems for distribution cycle management) are supported by tools made available by the new telecommunication technologies (online shopping, information platforms for distribution management, partnerships to run ‘virtual’ warehouses). The expression combines the words ‘click’ (highlighting the virtual aspect) and ‘mortar’ (highlighting the physical aspect), thus highlighting the integration of Internet-based (online) business and traditional (onland) elements. ‘Click’ represents the online world: ‘dot.com’ and ‘e-tailer’ businesses characterised by innovation, high turnover, potential for development of one-to-one marketing, and ability to reduce the structural and workforce costs that characterise brick-and-mortar businesses to a minimum. ‘Mortar’ represents the offline world: traditional businesses recognizable by a retail POS sign, customer loyalty, high physical organisation costs, well defined distribution networks, stores and distribution centres or warehouses and customer-handling processes. The concept of click-and-mortar represents the ability to integrate the two worlds (online and offline) and create the ideal combination’<sup>74</sup>.

When a click-and-mortar distribution policy is established networks must manage initially increasing distribution costs related to multiple channels, different channel margins deriving from the adoption of different sales prices and, last, the establishment of channels with hybrid features (with reduced investments, different distributors can expand the offered assortment with products, services and functions typical of other trade intermediaries) and possible conflicts both internal and external. The benefits

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<sup>74</sup> See Tesser Emanuela, 2002, cit.

deriving from click-and-mortar businesses are: cost savings from previous offline brand awareness of company name and existing customer base; avoidance of bad choices and no wasted resources deriving from information owned by demand; profitability tolerance of periods of sales below the break-even point; well-established infrastructures and distribution logistics; possibility to reach markets not yet served, complementing and existing market (i.e. expanding the range of products). The decision to combine e-commerce with traditional distribution also involves the management of conflicts. In the activation phase of a new distribution channel the total sales volume are redistributed among different channels generating friction among the leaders of the different channels as well as phenomena of cannibalisation of existing channels by the new ones. The request for physical facilities (warehouses, offices, branches, etc ...) by traditional sales channels can cause the erosion of most margins, therefore the shift of the production volume on the online channel, according to a lean approach, would lean the structure of fixed costs. At the same time, if the physical structures are not sold, they would have huge damages on firm profit. As stated above, it also would generate price conflicts: the offline channels have higher prices than those charged by the online sales channels. Finally, at the early days of e-commerce, the use of an online brand fully bonded to the traditional realities may undermine the success of the online strategy, since the customer expects a certain degree of integration between the online channel and the offline one.

A manufacturer who chooses the multi-channel strategy must face and manage possible conflicts, that can be summarised in the establishment of a direct sale channel by manufacturer, loss of control over sales channels and last shifts within the value creation chain. The establishment of a direct sales channel by producers contribute to deteriorate the relationship with the sales structures that could link up with competitors. Anyhow, the presence of Internet sites, which allow the end user to find product information, would lead to a change in the value chain, redefining the role of the distributor. Although companies often do not manage relations with customers directly, they seek to exercise some control over sales channels, through the formation of sales areas, merchandising and presentation of products and promotions, which is very difficult to do with the online channel strategy.



In multi-channel distribution policies, the use of e-commerce is therefore aimed at streamlining distribution processes with adequate information systems, in order to enter new markets or segments and to create demand bubbles, thus creating cost savings upstream and downstream in the chain. In the virtual space, the threat of competition comes also from entities that go beyond the line of traditional sectorial boundaries (competition based on different uses and different needs). The redefinition of the traditional boundaries and forms of competition can also be realised through the change in the trading power for example, increasing customers one, given the information asymmetry created by electronic commerce.

## **7. Network Communication, Corporate Governance and Corporate Responsibility**

Corporate Governance is a set of rules, relationships and control established by the management of a company. As observed by Gandini<sup>75</sup>, it is extended to all the stakeholders and it represents a strong connection with the system of network intangible assets: in fact, corporate governance creates and spreads culture through the whole network, defines the structure of information system and the flows of information, keeps network identity to compete in global markets. According to the subjects who exercise control on management and targets, networks are characterised by two different models of corporate governance: the outsider system (or market-oriented system) and the insider system<sup>76</sup>. Globalisation unifies governance approach<sup>77</sup> while we can easily observe that a network can easily imply both a market-oriented system and an insider system.

Market-driven management is a critical factor for corporate governance in open markets where the bottom up vision is based on network communication. Therefore, an adequate approach to communication is needed. The keyword of corporate governance communication is transparency. Transparency means the willingness of a firm to acknowledge the key stakeholders of socio-economic and financial corporate facts. For

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<sup>75</sup> Cf. Gandini Giuseppina, 2006.

<sup>76</sup> Cf. Gnechi Flavio, 2006. Outsider system is found in large listed companies with a dispersed ownership, separated by the supervisory bodies (control is moderate and implemented by a large number of shareholders); while, insider system is typical of enterprises that are owned and excessively controlled by a small number of internal shareholders.

<sup>77</sup> Cf. Salvioni Daniela M., 2004.

years the concepts of transparency and corporate governance communication in global networks, have resulted in the production of an abundance of information dispersed on a plurality of separate reports in order to meet the information needs of different stakeholders, but easily shared in network logic with powerful information systems, digitisation and the development of Information Communication Technology (ICT) . Today, transparency is met with the actual need for sustainability of business development, experiencing evolution from the early beginnings of globalisation to date in terms of greater attention to the principles and values that dominate the internal and external relations. In a context of global markets, where the effectiveness of firm-environment relationships, characterised by growing dynamism and complexity, involves the sharing of ethical principles and values within the network through a renewed corporate communication. A new concept of *integrated reporting*<sup>78</sup> is outlined: a single, strategy-focused and future-oriented report, intended for all stakeholders, which integrates information based on sustainability and creation of value of strategy and resources allocation; the business activities undertaken and on company results; financial and social achieved and future objectives.

The complexity of global markets and transparency required by a wide competitive space, emphasise the cultural dimension of market-driven management in terms of corporate responsibility and corporate social responsibility (values)<sup>79</sup>. Global managerial economics of intangibles imposes network policies of corporate social responsibility<sup>80</sup>, dominated by economic sustainability, eco-responsibility, worker protection and so on: this demands the strengthening of the worldwide organisms responsible for monitoring companies, and the formulation of new rules and standards that are in tune with the global contexts of network competition on the other. A competitive approach to the market is therefore manifested from the bottom up, to

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<sup>78</sup> See Salvioni Daniela M., Bosetti Lucia, 2014, p.34 and p. 49. 'An integrated report is a document by which a firm informs all the stakeholders in a clear, truthful and comparable way about how it has accomplished its responsibility and about the results it has obtained. (...)An integrated report should be direct to all stakeholders and should permit them to evaluate the firm's governance structures and strategy, as well as the past, present and future performance concerning financial, social and environmental aspects. In other words, suitable information should be prepared to improve the firm's communication to stakeholders, by emphasising the basic conditions of unity, continuity and transparency'.

<sup>79</sup> Cf. Brondoni Silvio M., 2012b.

<sup>80</sup> According to Brondoni Silvio M., 2014, p.24, corporate social responsibility is the relationship between the economic, environment and social setting.

‘force’ the intersection of supply and demand, developing exchange and push/pull communication flows<sup>81</sup>. In global managerial economics, corporate responsibility therefore amounts to the unstable and dynamic equilibrium, on a global scale, between the concerns of corporate governance bodies, stockholders, shareholders, management, employees and, finally, stakeholders.

Corporate responsibility must mediate between firm profitability, firm long-term growth and social and environmental issues, both at a corporate level and at the level of individual operating entities, thus defining the complex social responsibility. The corporate social responsibility imposes to be open to dialogue with the stakeholders<sup>82</sup>.

## **8. Network Metrics and Control of Global Business Relations**

Market-driven management strategy demands a network culture and local organisations motivated by results, market policies that monitor the instability of the competition and the variability of demand. In a market-driven management orientation, the reorganisation of the company to ‘global business’ rather than to markets and products, exploits the preparation of new metrics to evaluate and to stimulate network performance (intangible and tangible factors). Such new metrics are related to competitive relations with other networks and, more broadly, within the market.

In an unstable, complex and dynamic context, customer, product and corporate contribution margins assume a critical role due to the reduced market forecasting ability. In terms of marketing costs, the indicators of historic results on a local basis, as the market share and share of voice, are replaced by impact strength. The impact strength measures the ability of a network to assert its identity on global markets, or the results that a network achieves in time and space in relation to its offerings (product brand) and to implemented market policies (corporate impact), highlighting the volatility of marketing costs.

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<sup>81</sup> Cf. Corniani Margherita, 2008.

<sup>82</sup> According to Brondoni Silvio M. and Salvioni Daniela M., this can profoundly influence short-term results and long-term tasks at a local and corporate level, sometimes with devastating consequences, setting up specific corporate and local communication tools (such as ethical codes, social balance sheets, environmental balance sheets, lobbying through associations, etc.).

In terms of sales, the cost/income ratios as ROI, ROE, ROS are particularly important. Even the shelf turnover, stock ratios and the durability indexes, that make explicit the critical variable time, are fundamental. Some management methods help the management in the study of these indexes: they are the direct product profitability (DPP) and ABC method. The DPP method is an important management tool that allows determining the direct cost of the product, i.e. all costs associated with it since its entry to the exit of the warehouse store. Calculated as the multiplication between margin and rotation, it measures the direct product profit, the receipt, handling and administration costs, and the necessary space for product management, highlighting how the profitability of the product is not solely linked to the commercial margin (price less purchase cost). The ABC method is useful in the management and in the set-up of the warehouse and/or of the shelf. The methodology is based on the 80/20 Pareto law, allowing to assess the products (class A, class B, class C that generate different percentage of turnover) on which to focus in order to define allocation policies on the shelf and of assortment. The main limitation of the test method is that it considers sales volumes but not stocks; it is therefore necessary to cross the ABC sales data with ABC data of unsold and unsaleable, to reduce the risk of stock outs and to reduce inventory of few sold products optimising assortment policies.

'The hyper-competition requires increasing investments to maintain global economies of scale, which constitute barriers to entry of new global players. In this regard, the growing concentration of corporate resources on global production (to achieve global economies of scale, scope and experience) requires a strong selectivity of investments and marketing expenses, on a global and local level, essential to control sales and purchase channels (physical and digital) increasingly sophisticated and complex. A piece of evidence is, for example, an 'increasingly small number of mega-organisations which can create specific products and services that are based on dimensional economies suitable for global markets and also enable innovative development spaces and appropriate levels of profitability in a continuous competitive benchmarking imposed by processes global imitation'. Other performance indicators are social, environmental measuring respectively the level of corporate social responsibility initiatives and the impact of firm's activities on environment.

## COMPETITIVE STRATEGIC ALLIANCES IN THE AUTOMOTIVE INDUSTRY

*‘La festa è finita. (...) dopo la crisi economica resteranno solo sei grandi gruppi. Ossia riusciranno a sopravvivere soltanto quelli con una produzione superiore a 5,5 milioni di auto all’anno, (...) per i costruttori di massa alla fine ci sarà un americano, un tedesco, un franco-giapponese, probabilmente con una ramificazione negli Usa, uno in Giappone, uno in Cina e un altro potenziale player in Europa. (...) Non posso continuare a lavorare sulle auto da solo perché ho bisogno di una macchina molto più grande che mi aiuti. Ho bisogno di una macchina condivisa’<sup>84</sup>.*

*Sergio Marchionne, CEO FCA.*

The Automotive Industry is the branch of the manufacturing industry that deals with the design, development, production, marketing and selling of motor vehicles. The term is a hybrid form that comes from Greek *auto* meaning ‘self,’ and from the Medieval Latin adjective *motivus* meaning ‘in motion’, and it is referring to any form of self-powered vehicle. It is the quintessential industry by far, both in terms of ability to provide jobs and in terms of products, both in developed countries and in emerging countries. For several years this sector, which is in a state of over-supply, is going through a time of deep trouble: the effects of the regulation of the more economically developed Nation-States and supranational bodies, the attack of the Asian tigers and competitive countries with low labour costs emphasise the importance of market-driven management as logic of global competition beyond the mere sizes of product-based and marketing based competition.

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<sup>84</sup> To the author's work translation. ‘The party is over. (...) After the economic crisis there will be only six large groups. Those with a production bigger than 5,5 million cars per year will survive. (...) Mass market OEMs will be an American one, a German one, a French-Japanese one with some branches in the United-States, a Japanese one, a Chinese one and a potential European one. (...) I can’t continue to work alone in the automotive industry, because I need help from a bigger machine. I need a shared machine’.

## 1. Automotive Industry History

This section will cover a brief history of the automotive industry<sup>85</sup> with the exception of its European part which is further explained in the following chapter, entirely dedicated to the analysis of the European industry and its decline.

The car is a European product.

Initially, the cars were 'pleasure cars' or a luxury products reserved to few wealthy customers. A product mainly used for racing, an expensive and unreliable product: security was not a discriminating factor between the purchase variables. The primacy of production is attributed to Daimler and Benz, who first used oil and sensed its revolutionary potential for the transport sector, thus defining a new design or rather a new standard. At the beginning, it was not clear if the car were to have three or four wheels, or was to be fuelled by internal combustion engine, steam engine or batteries. The first evolution in the industry took place in the United States certainly not indifferent to the charm of racing. With the introduction of *mass production*, Henry Ford legitimises the use of the internal combustion engine as standard by placing it over the other types of propulsion. In those difficult years, Ford was a genius who soon realised that there was a new way of manufacturing and a latent market for the car that was no longer a bargain for only rich people, making the fortune of Highland Park and Model T, that customers could choose in any colour as long as it was black. The idea of Ford was revolutionary with respect to the production process, because it created economies of scale to lower the costs and made the price affordable to a wider audience (strong price elasticity). In the assembly line, the car ran down a line where the experts could carry out several operations in sequence one at a time; the components used were interchangeable and standardised. When the system was fully operational, the production went up to 146 cars per hour: the increase of the volumes reduced costs dramatically. Ford, however, was also an obnoxious character who wielded absolute and arbitrary authority in companies, showing a strong attachment to money. With the closing of Highland Park and the opening of River Rouge, he abandoned the idea of openness to the outside and relationship with suppliers (see for example the supply of engines from the Dodge Brothers) and vertically integrated supply chain. From these

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<sup>85</sup> Cf. Pellicelli Claudio, 2014.

choices sprang the decline of his business, Henry Ford did not understand that the demand was changing; the consumer was no longer the same. The T model collapsed because it was unable to compete against the Chevrolet of General Motors. He left the company to his grandson Henry Ford II, who declined the virtually zero cost purchase of what is today's Volkswagen, missing the opportunity to enlarge its market share and deal with GM. It was the beginning of the rise of General Motors, marking the transition from mass production to market segmentation. General Motors was founded in 1908 and after two troubled managements, in 1923 Alfred Sloan<sup>86</sup> came to lead the firm. He soon understood that the inhabitants of the city clearly wanted something different, a car for every purse and every purpose. Alfred Sloan adopted the rules of mass production but its customers perceived the products as if they were constructed on the basis of their needs. GM was actually going to do *mass marketing*, through segmentation, positioning, product renewal, premium price, branding and advertising. Sloan also introduced a new organization based on divisions with its own market, its own product portfolio with a small headquarters dictating the strategies and rules and exercised control over the entire group. The various companies/brands belonging to General Motors had to be ordered in a hierarchy according to the price and the segment of cars which were intended to eliminate overlapping models. General Motors sold to those who acquired the second and the third car and not more the first one as Ford did. General Motors had an unchallenged superiority: 1) it held 50% of the American car market; 2) it was the first manufacturer of parts and components in the world; 3) it was also considered a technology innovator as in the case of the introduction of the 'closed car' (cheap production) and the development of a quick-drying paint. The years that followed were those of the Great Depression, the collapse of Wall Street and the Second World War: the years in which sales of luxury cars and of many other manufacturers collapsed perishing, where many production facilities converted production from civilian use for military use. At the end of World War II, the third trend in the auto sector is given by the rise of Japanese car industry, or better with Toyota, the founder of *lean production*,

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<sup>86</sup> Cf. Sloan Alfred, 1963

according to which the production was to come according to the needs of consumers, pulled or driven by actual demand<sup>87</sup>.

### **1.1 American Automotive Industry History: the Detroit Big Three from the ‘Golden Age’ to the End**

The so-called Detroit Big Three, Ford, General Motors and the smallest Chrysler, have effectively dominated the history of American automotive industry. Detroit had produced airplanes and tanks instead of luxury cars during the war; despite this the conversion of the plant was really fast, but there arose some conflict with the unions demanding wage adjustments. In the coming years, the Big Three lost market shares because of the entry in the US market of Japanese and European companies, the decision to stop producing small cars, convinced that the segment was not sufficiently profitable for all car manufacturers. The 50s were the years of the Golden Age, the years that doubled the number of cars on the road, richest of chrome and accessories, with a much faster frequency of new launches. At the same time, offer range of car decreased consumer loyalty and, therefore, increased marketing expenses to tackle it, particularly increased advertising supported the manufacturers and dealers who are found with high levels of unsold. General Motors produced 43% of commercial vehicles. Not having such strong competitors, General Motors put in command managers from the finance area, concerned about the cost and competitive prices rather than the taking care of product. In particular, at that time staff were opposed to the installation of certain security devices in favor of profitability. In 1973, the first oil shock decreed the embargo of the Arab oil-producing countries and, as a result, the Americans were forced to buy cars that consumed less, thus by opening the way for the Japanese Toyota and Nissan. The entry of the Japanese finally broke the oligopoly of three American and even the UAW. Under the pressure of the crisis, the Big Three and the powerful UAW simplified and made less onerous their contracts. After a few years, the above reduced the quality and productivity gap between American and Japanese competitors, by introducing new products such as minivans, the cross between car and wagon, a traditional small van but more spacious than a station wagon which paved the

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<sup>87</sup> See the previous chapter and the section analysing the TPS, Toyota Production System. In this part of the research I will discuss about modularisation and built-to-order as extension of the TPS, to enhance flexibility.



way to the SUV's boom in the 90's, a new idea of product marketing existing for some time, and partially modified. Chrysler bought American Motors owner of the Jeep brand in 1987, believing that the market would have gone in that direction. To the success of the minivan, Ford preferred the SUVs, a three-volume mid-size car called Taurus was successful both for design and engineering; It was withdrawn twenty years after the launch because Ford did not have the determination to continue to invest and to defend the success he had achieved against the Japanese. General Motors declared itself not concerned with the progress of Ford, launching a new business model: 1) it stipulated a program with the union named Jobs Bank, under which an employee dismissed because of technological progress would have been entitled to 95% of salary until he found a new job; 2) it took the road of a very strong diversification that led it to acquire aviation firms and companies producing satellite systems. Ford and Chrysler were forced to follow General Motors, both with regards to union and acquisitions: in 1989, the Big Three spent over 20 million dollars in acquisitions eroding much of the profits, while the Japanese concentrated on the car putting on market brands such as Lexus, Infinity and Acura. In the 90s, the Big Three were still enjoying the benefits arising from achieved high profits in previous years, but the scene changed quickly showing the vulnerability of the auto industry compared to the economic cycle. It emerged that, although their strategies were different, the Big Three had one thing in common: they sold more SUVs and minivans than normal cars (passing from car companies to truck companies. Only GM sold more cars and trucks and bought Saab). In 1998, Daimler Benz bought Chrysler as part of a globalisation strategy to change the face of the automotive industry, and chose a stake in Mitsubishi Motors to enter Japan. General Motors and Ford were worried that the new company could become a formidable competitor. But on the threshold of the new millennium the situation in Detroit seemed improved and the Japanese car manufacturers were forced to stop their penetration because they lost the SUV boom: Honda was hit by an internal scandal in it, while the nearly bankrupt Nissan went for sale and was bought by Renault. The success with light trucks slowed the incentive to improve the quality and productivity of American manufacturers. In 2000, General Motors bought 20% of Fiat Auto paying \$ 2.5 billion in GM stock. With 5% of shares Fiat became the largest shareholder of General Motors, who in turn had access to Fiat's diesel technology. A put option weighed on the alliance;

Marchionne asked to exercise it in the beginning of 2005: although GM had made high profits with its financial division, it decided to end the global alliance with Fiat. General Motors' economic situation was pitiful, it had too many brands that duplicated itself, a large excess of production capacity, or too many factories, too many employees and too many dealers: there were rumours of bankruptcy. In the 90s, the Ford family wanted to regain control of the company, but the new appointed CEO undertook a crazy way of diversification (Volvo, Land Rover, Aston Martin and Jaguar) eroding much of the advantage so far accumulated: Bill Ford announced 'The Way Forward', a breakthrough that involved the abandonment of Taurus, the closure of many factories and consequent layoffs. In 2006, the Ford family proposed Mullaly as CEO, who immediately asked the banks for a loan of 23,6mld of dollar, to finance the turnaround, giving everything as collateral. Even Chrysler was for sale and then bought by Cerberus, a private equity fund. 2008 is the year of the crisis and the Big Three have been postponed at the first hearing of the Senate; at the second hearing, as mentioned earlier, Ford declared that it could do it on its own. Meanwhile, Obama activated a task force to rescue General Motors and Chrysler, rejecting the idea of a merger between the two. The new Fiat turned out as a candidate, it started the low fuel consumption production that the two US manufacturers needed. The government put money to keep Chrysler alive until Fiat branded autos were launched on the US market: Fiat closed the Chrysler acquisition deal in 2014. General Motors was instead facing bankruptcy, it received the money from the Treasury (72.5% control) with the condition of reducing brands and rationalise product lines.

## **1.2 Japanese Automotive Industry History: the 'Keiretsu' and the Culture of continuous Improvement**

In the early 1900s, some motor enthusiasts developed the first prototypes of cars. For example, Yamaha, in 1904, developed the first bus with steam engine. Only with the earthquake of 1923, car production became a serious business: the car was an effective alternative to the damaged railways. The government then bought 800 frames of Model T to adapt and use as bus. Then began the knocked-down (KD) production, initially European and then American, in particular of Ford and GM. As with the production plants of Osaka and Yokohama, Americans dominated the Japanese market, the

government decided to implement a protectionist policy that forbade foreigners and closed plants, favouring the birth of Nissan, Toyota and Isuzu, even if with limited financial resources. While Nissan merely import a package of technology, Toyota made own the American and European technologies, setting the basis for the Toyota Production System in the 50s. World War II led to a recession of the economy from which Japan recovered thanks to American orders of trucks to fight the Korean War. With the transfer of technologies, the recovery was rapid, increased wages, quality of life and purchasing power. In fact, in the 60s the production increased exponentially, bringing Japan to be the largest car manufacturer and increase the quality and the competition between different Tier. Meanwhile, the Ministry of Commerce and Industry failed with the attempt of concentration of the automotive sector in three major companies. In the following decade, the oil shock dominated by the Arab embargo, led to a turnaround in growth of demand for cars: exports are the masters, increasing by 5 million a year, mainly to the US market, where the Japanese machines had cut the slice of the cheap market segments. The appreciation of the Yen, pushed Japanese firms to build production facilities abroad to reproduce the exact same structure adopted in Japan, the so-called 'transplants'. The Big Three understood the importance of making alliances; the most famous is NUMMI, including GM and Toyota. The bubble economy of the Nineties made Japanese automotive industry losing competitiveness, with the spiral of increasing fixed costs and raising the break-even point due to diversifying investments (ICT and CIM) without taking into account the profits. In recent years, Japanese companies have recovered ground, driven by the development of green technologies and the introduction of the hybrid engines.

□ *The principal Japanese OEMs are Toyota, Nissan, Honda, Suzuki, Mazda, Daihatsu, Subaru, Mitsubishi, Hino and Isuzu.*

□ *Honda Motors Co., Ltd. is a public multinational corporation known as a manufacturer of automobiles, motorcycles and power equipment. Among the Japanese, is the first car manufacturer to have had a global push, the first to build cars in the United States. The power of Honda is in the defence of its independence and the constant search for innovative solutions, both in mechanical and in marketing. Car production began in 1962 with the sport*

*car S360 and the mini truck T360, but the success came in 1975 with the introduction of Civic. In 1986, Honda introduced the luxury Acura brand to the American market in an attempt to gain ground. Following the death of Soichiro Honda and the departure of Irimajiri, Honda was at serious risk of an unwanted and hostile takeover by Mitsubishi Motors, who at the time was a larger automaker by volume and profits from the successful Pajero and Diamante. Honda changed its corporate culture, rushing through market-driven product development that resulted in recreational vehicles such as the first generation of CR-V. (See Honda Corporate Website)*

### **1.3 Korean Automotive Industry History: the Role of ‘Chaebol’**

South Korea was established in 1948, at that time was a land devoted to agriculture. The Korean industry's story began in the 60s, thanks to the engine of the motorcycle *chaebol*, family conglomerates similar to the Japanese *keiretsu*, which arose from small businesses that had come to compete with the big global players, see, e.g. Samsung Electronics, Hyundai Motors, LG. The automotive industry too was born in the Sixties, when the Government chose to protect the industry through import barriers and the introduction of duties: Auto Company Saenara first, Shinjin, Hyundai and Asia then assembled semi-knocked down kits (SKD). Later in the 70's even at Kia and Ssangyong assembled SKD in a vain attempt by the Government to modernise the sector and maintain viable economies of scale by limiting the number of manufacturers to start mass production. In fact, only Hyundai followed the directions of the Korean government that opened the door to exports and the domestic production of vehicles at low cost and therefore accessible to the local population: Hyundai abandoned the production of SKD for the Ford sub-compact model and began to produce the Pony with the help of Italdesign (Giugiaro) and Mitsubishi. It then followed the Pony II and Excel model, declaring Hyundai a market leader. Continuing the licensed production, Kia was dedicated to the Peugeot 604 and the Fiat 132 and only in the 80s struck a partnership with Mazda and Ford that led it to be the second Korean manufacturer. With a 50-50 joint-venture with GM, Shinjin created GM Korea then Daewoo, producing a variant of the Opel. Only in the early '90s, the Government stepped aside, leaving the

potential of the unrelated diversification of the *chaebol*, but the financial crisis and the depreciation of the Korean Won once again confirmed the Hyundai supremacy that had kept it squarely the way on R&D and growth strategy avoiding joint venture and cooperation that would have altered the character of the *chaebol*. In the auto sector, the main example are represented by the Samsung *chaebol*, whose core business was represented by the electronics and chemical, and Ssangyong which always had taken care of cement and construction; to prevent new entrants from reaching vital economies of scale, the 3 historical OEMs decided to increase production capacity and to relocate doubling the market share (from 2.7% to 5.8% in 7 years) which was soon accompanied by a deterioration of profitability. Hyundai acquired Kia, while in 1998 the *chaebol* Daewoo, which failed for purchasing new companies, was bought by GM (engines) and from the Indian Tata (truck and industrial vehicles).

□ *Samsung Motor Company was created in 1995 after a failed joint venture in the 80s with Chrysler and after 2 years of production under license by Nissan. In 1998, it began the production of the SM5 model with Nissan technology, able to compete with the models of the other chaebol on all fronts except the price: Nissan advanced technology and a break-even much higher than the actual capacity did not allow the achievement of important economies of scale. In 2000, the group was sold to Renault-Nissan, taking the name of Renault Samsung Motor. (See Renault Group Corporate Website)*

□ *SsangYong was founded in 1954 to produce Jeeps for the US military, as well as trucks and buses. In 1991 it starts a technological partnership with Daimler in 1991, to develop a SUV on Mercedes-Benz basis; hence, the Musso, a SUV that draws on the mechanics of E-Class. In 1997 Daewoo becomes the majority shareholder, then again the SsangYong group in 2000 and later in 2004 the Chinese SAIC buys 51% stake. After the dispute between the SsangYong and the same SAIC, accused of an incorrect management and to brought to China the technology developed in South Korea, the Indian Mahindra in 2010 acquired 70% of SsangYong for just under \$ 500 million. (See SsangYong Corporate Website)*

The State intervention, the conglomerate but not concentric diversification by the *chaebol*, the Darwinian selection of companies during the financial crisis, the continuity of the Hyundai-Kia management are the basis of the power of the Korean industry's ability to compete.

#### **1.4 Chinese Automotive Industry History: from the Socialist Economy to the World Leading Industry**

The Chinese automotive industry history is relatively young compared to those of other regions. In fact, the first Chinese motor vehicle was a truck produced in 1928; then vehicles moved by charcoal and by Tung oil (1945) appeared on the market. In the 1950s, many plants were founded and started to produce truck and few licensed auto parts and vehicles. Helped by the Soviet investments because of the blockade in Japan, many trucks based on Russian GAZ and vehicles serving the Army have been produced in modern plants. In the late '50s and during the '60s few automobile companies were set up and are today still working as Nanjing Automobile Corporation, Shanghai Automotive Industry Corporation SAIC, China National Heavy Duty Truck Group and Beijing Automotive Industry Holding Corporation. The years from '80s to '90s marked the opening of Chinese market to foreign investments and many American, European and Japanese OEMs allied with the Chinese firms to produce knock-down kit. The domestic production was very limited in the decades of China's socialist economy (only 5,200 cars produced) so that the import rose dramatically despite the duties and a two years moratorium. China tried to help local production boosting the existent joint venture but also establishing new ones that didn't allow the Chinese to learn and incorporate third parties' technologies. In the '90s the industry began to run and several new firms entered the automobile industry: Chang'an Motors, Changhe, and Hafei Motor originated from defence industry; BYD Auto, Brilliance China Auto, Chery Automobile, and Changfeng Automobile born from old state-owned companies, while from private capitals started Geely Automobile and Great Wall Motors. To face hyper-competition proper of global over-supplied markets, Chinese car makers adopted strong imitation strategies and have been accused of copying designs of other automotive players. Since the early 90's the Chinese automotive industry has developed fast. It is now the largest industry in the world in terms of production, sales and number of vehicles in use. The main industry domestic car manufacturers are all state-owned

companies and are SAIC Shanghai General Motors, Dongfeng Motor Corporation, Chang'an and BAIC Motor (see Appendix Table 16).

## 2. Automotive Industry Structure and Players

According to OICA, the International Organisation of Motor Vehicle Manufacturers<sup>88</sup>, Automotive Industry has a complex structure that includes passenger cars, commercial and industrial vehicles and buses and coaches. It defines these categories as follows:

- *Passenger cars* are motor vehicles with at least four wheels, used for the transport of passengers, and comprising no more than eight seats in addition to the driver's seat;
- *Light commercial vehicles (LCV)* are motor vehicles with at least four wheels, used for the carriage of goods. Mass given in tons (metric tons) is used as a limit between light commercial vehicles and heavy trucks. This limit depends on national and professional definitions and varies between 3.5 and 7 tons. Minibuses, derived from light commercial vehicles, are used for the transport of passengers, comprising more than eight seats in addition to the driver's seat and having a maximum mass between 3.5 and 7 tons;
- *Heavy trucks (HCV)* are vehicles intended for the carriage of goods. Maximum authorised mass is over the limit (ranging from 3.5 to 7 tons) of light commercial vehicles. They include tractor vehicles designed for towing semi-trailers;
- *Buses and coaches* are used for the transport of passengers, comprising more than eight seats in addition to the driver's seat, and having a maximum mass over the limit (ranging from 3.5 to 7 tons) of light commercial vehicles.

The three main players that operate in the industry are distinguished as follow:

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<sup>88</sup> The International Organization of Motor Vehicle Manufacturers was founded in Paris in 1919. It is known as the 'Organisation Internationale des Constructeurs d'Automobiles'. The organisation's membership comprises 38 national trade associations around the world, including all major automobile manufacturing countries, thereby covering virtually the entire motor vehicle industry all over the world. The general purposes of the organization are to defend the interests of the vehicle manufacturers, assemblers and importers grouped within their national federation and, in particular. 'OICA members represent the global auto industry that drives economic progress. Through our autos, we connect people, products and services to enhance quality of life and sustainable auto mobility. We are committed to technological innovation in the areas of safety, environment, fuel efficiency, and we seek global harmonization of safety and environmental standards to benefit all countries'. See [www.oica.net](http://www.oica.net)

- original equipment manufacturers (then OEMs);
- component suppliers;
- dealers.

## 2.1 Original Equipment Manufacturers

OEMs are the vehicle manufacturers, in other words the assemblers of final product. They can be distinguished by volumes and strategies. First, we can have OEMs that are characterised by mass and volumes, whose target is the mass market in which they compete on differentiation and cost reduction searching for economies of scales.

□ *PSA Group - Peugeot Citroën Group - is a French vehicle manufacturer that was created in 1976 by the merger of Citroën S.A. and Peugeot S.A. The group has had 54.7 billion euros of revenues in 2015 and 184,107 employees worldwide (including automotive, Banque PSA Finance, Faurecia, and other smaller business). It is the second largest car maker in Europe with 11.5% of market share. Its portfolio is made up of three brands, obviously, Peugeot, Citroën and DS from 2014. With its three brands the Group is present in 160 countries with a strategy that will reposition the three brands, clarify their product range to ensure more complementarity and improve their price positioning and, on the other hand, to ensure better market coverage. During the years PSA group has embraced numerous competitive strategic alliances in order to penetrate new markets, to minimise costs producing cars onto the same platforms, to gain new skills and technologies. For example, in 2011, PSA Group and BMW invested 100 million euros in a new hybrid technologies joint-venture. (See PSA Corporate Website)*

Second, we identify specialised manufacturers, aiming at the top of the market and fixing high prices with a view to cost recovery. Cost recovery strategy consists of transferring part of the cost to the customer, who is willing to pay a premium price, compared to reduced production volumes.



□ *The Daimler Group is the German inventor of automobile. It is one of the biggest producers of premium cars and the world's biggest manufacturer of commercial vehicles, with a global reach. It provides financing, leasing, fleet management, insurance and innovative mobility services. Daimler's revenue in 2015 amounted to 149,467 million euros and the number of employees was 284,015. It operates both with the famous three-pointed star brand, Mercedes-Benz, and Daimler brand in different business units, i.e. Mercedes-Benz cars (Mercedes-Benz, AMG, Maybach and Smart), Daimler Trucks (Mercedes-Benz, Freightliner, FUSO, Western Star, Thomas Built Buses, BahratBenz) Mercedes-Benz Vans (Mercedes-Benz and Freightliner), Daimler Buses (Mercedes-Benz and Setra) and last Daimler Financial Services (Mercedes-Benz Bank, Mercedes-Benz Financial, Daimler Truck Financial, Moovel, Car2Go and MyTaxi). The group has also a Formula1 racing team, called Mercedes AMG F1.(See Daimler Corporate Website)*

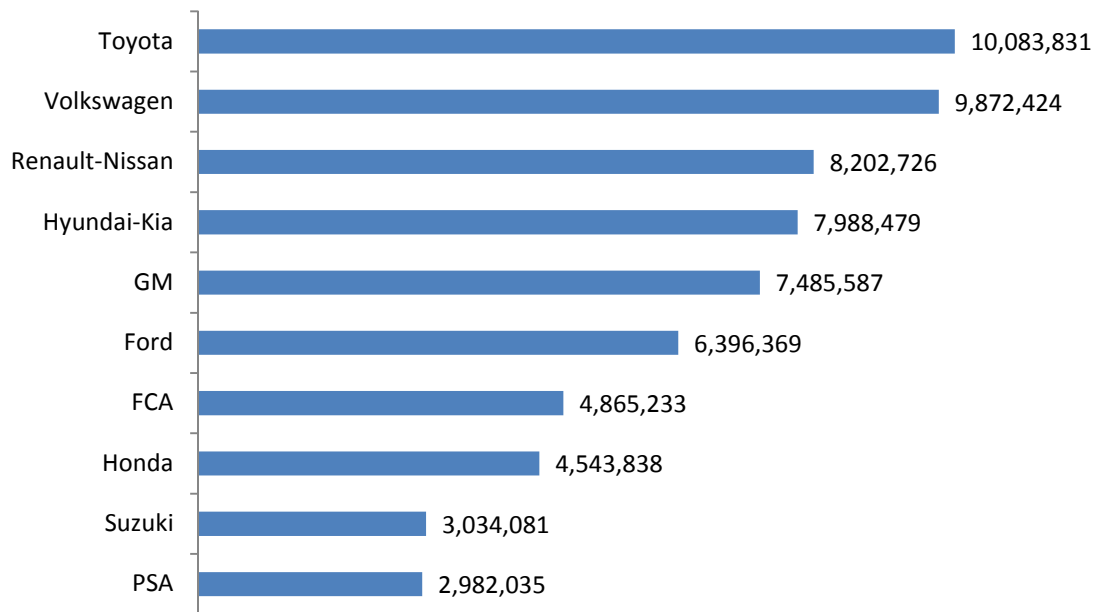
Third and final point, OEMs can be classified as niche manufacturers, belonging to luxury, very vulnerable and dependent on the economic cycle.

□ *Tesla Motors was founded in 2003 by a group of engineers in Silicon Valley. They were and are determined to prove that electric cars are much better than those on petrol. The company's mission: to ensure that the world may be converted as quickly as possible to sustainable modes of transport. First, the Tesla engineers designed a powerplant for sports cars based on induction motor with AC patented in 1888 by Nikola Tesla. The result was the Tesla Roadster, launched in 2008, that has sold more than 2,400 Roadster in more than 30 countries. In 2012, Tesla launched the Model S, the first premium electric sedan and in the last months of 2014, the Model S was presented in Dual Motor all-wheel drive version. The Model X is the latest one to be launched. In particular, the Tesla X60D is the cheapest SUV of Tesla and it costs about 88,500€. The owners of a Tesla car have the advantage of being able to recharge from home, without having to go to a distributor and without spending for gasoline. In addition, the Tesla*

*Supercharger network (in North America, Europe and Asia) ensures convenient and free access to ultra-fast charging, able to fill half of the battery in just 20 minutes. Tesla vehicles are produced in a plant that was once the headquarters of the New United Motor Manufacturing Inc. , a joint venture between Toyota and General Motors. To reduce the cost of lithium-ion batteries, Tesla and Panasonic, have assessed a huge plant in Nevada, to produce an economic vehicle and intended for the mass market: the Model 3. This isn't all, in 2020 this plant will produce more lithium-ion cells than those produced by the entire world in 2013, it will also produce battery packs to be used for the steady accumulation, in order to improve the robustness of the electric grid, to reduce energy costs for homes and companies providing a stockpile of energy. (See Tesla Motors Corporate Website)*

Hereby follows a chart with the Top10 automotive manufacturers worldwide as of 2015, ranked by production (see Figure 6). We see that concentration in large groups is the result of mergers and acquisitions, which belong to different brands. It is the network response to market instability in line with what Avvocato Agnelli and Dr. Marchionne said. In terms of vehicle sales and revenue, Toyota, Volkswagen and Renault-Nissan are the most successful automakers in the world. The Chinese manufacturer SAIC, Dongfeng, Geely, Chang'an and BAIC are beginning to cut the cord from their joint venture partners from other parts of Asia and the Western world (see Appendix Table 16).

Figure 6: Top 10 of World Ranking Manufacturer in 2015 (World motor vehicle production. Data are all vehicles)



Source: OICA. Author's graphic design. Data of Renault and Nissan have been summed according to the aim of the thesis.

## 2.2 Component Suppliers

The automotive production process is marked by different phases and times, depending on the proximity or less to suppliers, but it is also highly dependent on the saturation of the market and the management of supplier and stock relationships (time compression). See Table 2 to better understand.

All OEMs limit themselves to design and assemble automotive parts or component groups, most of which are provided by external suppliers. Suppliers provide approximately 10,000 pieces for the final car assembly, thus creating the final 60-70% of the value/cost of a vehicle. Some examples of auto parts that are manufactured by automotive suppliers are exteriors, interiors and air conditioning components, electrical and electronic equipment, vehicle chassis and powertrains.

Table 2: Value Chain Phases

Phase	Time between order and delivery in each phase
<b>Iron mineral extraction</b> <b>Crude oil production</b> <b>Silicon extraction etc.</b>	900-300 days
<b>Alumina production</b> <b>Iron and steel production</b> <b>Aluminium production</b> <b>Polymers</b>	11-26 days
<b>Semi-finished materials</b> <b>Bars, ingots, granules, sheets</b>	3-26 days
<b>Components</b>	1-21 days
<b>Modules</b>	30-180 minutes
<b>Car Assembly</b>	12-18 hours
<b>Trade/Dealers/Sales</b>	40-70 days

Source: Nieuwenhuis Paul and Wells Peter, 2003.

The competition carried out by Japanese OEMs, such as Toyota, has pushed European and US ones to revise their relationships with suppliers, adopting the idea to have few selected suppliers of prefabricated complex systems getting advantages of cost, time and quality. The abandon of the idea of using multiple suppliers to put in competition with each other, pushes OEMs to adopt a strategy that requires supplying companies the development of new skills but also new forms of cooperation between the two sides, such as the outsourcing relationships. This means system integration along the entire product lifecycle. The relation with suppliers is organised by OEMs by three tiers:

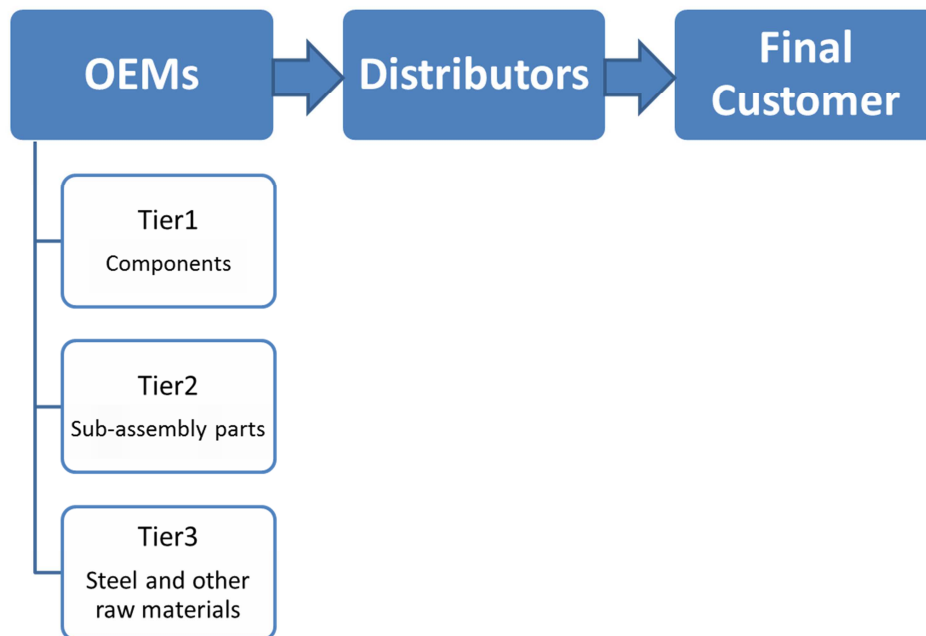
1. *Tier 1* players buy from Tier 2 and Tier 3 and supply directly OEMs often through R&D partnerships. They are responsible for product development and

technological innovation, working strictly to OEMs in the project, production and delivery of complex vehicle systems such as interiors.

2. *Tier 2* firms produce parts for sub-assembly phase. They buy from Tier3 and supply Tier1.
3. *Tier 3* suppliers provide materials and services such as heat treatment to Tier2.<sup>89</sup>

The trend is to reduce frequent trading to go towards stable relationships between OEMs and a few specialised suppliers, especially Tier1.

Figure 7: Automotive Value Chain



Source: Heneric Oliver, Licht Georg, Sofka Wolfgang (2005b).

The effects of globalisation, the choices of relocation and consequent new locations, competitive strategic alliances and modular production, means that also the industry of components is in a phase of restructuring and consolidation, or concentration particularly in Tier 1 segment<sup>90</sup>. This also brings benefits, such as access to new markets, electronic innovation and access to new skills deriving from outsourcing: the power still remains in the hands of the big automotive manufacture houses, because ‘the

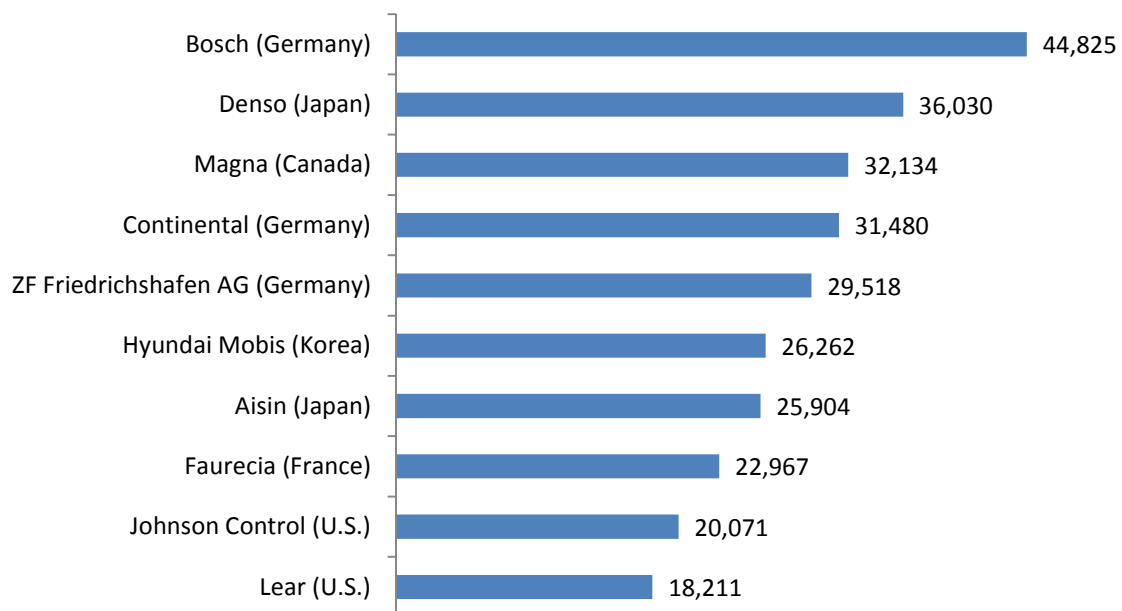
<sup>89</sup> Cf. Candelo Elena, 2009, p. 14.

<sup>90</sup> Cf. Heneric Oliver, Licht Georg, Sofka Wolfgang, 2005b.

vehicle is more than the sum of its parts'<sup>91</sup>. Mega-suppliers are then set up, who have resources to relocate and build the plants wherever they serve (new supplier-parks), support R&D to benefit from the growing use of common platforms by car manufacturers<sup>92</sup>.

The following chart (Figure 8) shows the leading automotive suppliers, based on worldwide revenues in 2015 (see Appendix Table 17). The ranking of the world's largest automotive suppliers is dominated by European and Asian manufacturers, especially German and Japanese.

**Figure 8: The leading global Automotive Suppliers in 2015, ranked by Sales of original Equipment Parts in 2015 (dollars in million)**



Source: Automotive News, June 2016. Author's graphic design.

The German Bosch is ranked first, while Japanese Denso ranked second. Bosch's core products include controls, electrical drives, brakes, starter motors, generators and

<sup>91</sup> See Heneric Oliver, Licht Georg, Sofka Wolfgang, 2005a.

<sup>92</sup> Cf. Pellicelli Giorgio, 2014; Parry G. and Graves A., 2010. The supplier park are clusters in which operate both suppliers and car manufacturers. They are different by location, carried out activities and size. The effects of globalisation, the need for integration of the supply chain, the proliferation of models and the need to simplify the production, ensure that the supplier park are still rising, especially in emerging countries that always attract strong foreign investment. In a supplier park, the number of suppliers is variable but they mostly are Tier2 and Tier3, as typical tasks are warehouse management and inventory, assembly of modules and systems to be delivered to OEMs and time management (just-in-time).

steering systems, while Denso is especially active in the field of powertrain control systems, electronic and electric systems, small motors and thermal systems. The Canadian Magna produces body, chassis, exterior, seating, powertrain, electronic, vision, closure & roof systems & module. The rank shows the primacy of German, Japanese and American in the suppliers business. Continental (the German supplier of electronic brakes, stability management systems, tires, foundation brakes, chassis systems, safety system electronics, telematics, powertrain electronics, interior modules, instrumentation, technical elastomers) slipped fourth after being on the podium in 2014.

According to the major consultant groups, new challenging market trends, such as the shift to lighter manufacturing materials, the electric/autonomous/connected car, and the alternative fuel powertrains will shake up the entire industry and in particular will increase R&D expenditures in the suppliers' balance sheets. Sometimes, the parts and components come from companies based in Eastern Europe, China, South East Asia and Mexico; the low labour cost advantage is mitigated by the long transfer times to the supplier park in Europe and in the United States, limiting the flexibility of productions.

### **2.3 Distributors or Dealers**

In a saturated market, the dealers are having to adopt aggressive pricing and discount policies to ensure that the customer won't leave the car showroom. If they succeed, given the fierce competition of the Internet, that allows the end user to search for information and to have pre-buying experiences calibrated on its needs, this will result in lower profits for the dealer and greater customer satisfaction. But is this a right price to pay? Where does it lead? The customer is not usually loyal in its buying behaviours in an over-supplied market. Internet does not always allow the sale, so that dealers' gain is in the spare parts sale and in loans. Even here, however, the finance company is owned by the OEM.

□ *FCA Bank S.p.A. is the holding of an international banking group born in 2015 from the equal joint venture between FCA Italy S.p.A. and Crédit Agricole Consumer Finance S.A. The group has a very widespread diffusion in the EMEA region, particularly in Italy, Greece, Portugal, Spain, France, Switzerland, Belgium, Germany, Netherlands, Austria, UK, Ireland,*

*Denmark, Sweden, Norway, Finland and Poland. It aims to be the bank of automotive customers. (See FCA Bank Corporate Website)*

Industry profitability is very low, because the sector is characterised by high fixed costs of production and development that determine at any decrease in demand the stop of production lines with many consequences of industries. Indeed, the useful life of a vehicle generates profit for automotive gasoline market, insurance players, suppliers of spare parts and so on. This requires an abandonment of the only product-based approach in favour of integration with an orientation to product, corporate and network intangible asset: if it is true that a good product range or line can make a difference, it is also true that pre and post sales services, brand, corporate culture, are key elements of a successful global market-driven firm. So, who are the market-driven winners in the automotive industry then? Those players who make the ability to compete and the efficiency of the activities of the value chain the keys to success.

□ *The automotive industry provides an important example as regards click-and-mortar distribution policies. The online search for detailed information on motor vehicles has become a solid step in the car buying process. A traditionally important role of the dealer is then less, diminishing the importance and therefore the bargaining power with the parent company.*

### **3. The State of Art Automotive Industry**

There is a relationship between growth of economic development and motorisation rate: the increase of the first results in an increase in demand for vehicles. According to some research based upon the above report, the car industry would not be in a stage of maturity, but it will also see growth in world demand (See Figure 9). The global vehicle fleet is on the rise. This does not imply a brighter future for the OEMs and suppliers of the Triad (North America, Europe and Japan), it rather means that their strategies should be directed towards new markets. The rankings referred to in the previous paragraph are explanatory. Considering the relationship between economic development and motorisation rate, we note that in mature economies of the Triad the slow economic and demographic development and the replacement rate of cars guide



the weak demand for new vehicles, while the emerging economies, such as BRIC and STIM, are populated by millions of people who are going to buy their first vehicle; not surprisingly, China is the first market for sales volumes (see Figure 9). The main causes of a 'replacement demand' in the Triad are due to weak economic growth, the stagnation of incomes, the volatility of financial market, the political uncertainties but also to the improved quality of the vehicles. In Western Europe, a considerable fragmentation is emerging: national economies grow at different rates and the peripheral ones still suffer a lot from the crisis that began in 2008, compared with the core countries such as Germany; German manufacturers concentrated in 'high-end' but also German Tier1 suppliers of components suffered less of the reduction in profitability due to the crisis. The United States is the Triad country that has suffered the most the crisis, but the monetary policies of the Fed which allowed quick access to credit, the 'fuel efficient' technologies and the confidence in the recovery have allowed a rapid exit from the crisis: unlike European firms, American companies have reduced the capacity to boost sales. Japan, like Europe, is driven by a demand for replacement and, like the United States, has reduced its domestic manufacturing capacity by expanding production overseas: the population is aging rapidly (by 23% over 65 years), urbanisation, excellent public transportation network, the lack of steady employment and high car ownership taxes (it is estimated that a Japanese pay 50 times more than an American and 4 or 5 times more than a German and an English) motivate young people to move to city where the car are not needed and more generally the population to buy minicars (35% Japanese cars market). Finally, in low-growth economies such as Africa, although poverty is declining but it is still high, mobility is a factor of ambition. So, it is clear how maturity is in the Triad and not in the world: Triad had to face an increasing competition, if in the 80's with the globalisation of markets, the threat was represented by the Japanese, today the battle for market share is to fight with the Koreans, the Chinese and the Indians. The Koreans have always been accused of dumping (that is to sell at prices below costs) from North America, Europe and Japan, but actually the Korean success comes from structural and strategic factors such as the abundance of global supply, the delocalisation choices, the strategic investments in R&D and the achievement of significant economies of scale. The Chinese and Indians are a threat both in the low-price segments both in the top segments: by buying Saab, Volvo, Jaguar

and Land Rover they had given them new life re-launching the icon brands, opened to joint-ventures importing and improving Western technologies, and last they had increased their image in the domestic market and in emerging ones.

The current competition is based on the proliferation of models and on the convergence of price and differentiation strategies. It is a dog chasing its tail; as it seeks to increase profitability by attracting new customers with the broadening of the offer in terms of innovation and imitation, new product lines, models and versions (but low-volumes per model) introduced on the market. Stand out with innovation is not easy, because of the short life cycle of the product and the fastest response of competitors in the introduction on the market of imitation products. It is obvious that the decrease of the life cycle, on the one hand, brings with it the advantage of continuous renewal of the range, on the other hand it adds costs (development and distribution) reducing profits and weakening competitive position. All the manufacturers have passed the gates of the premium and low cost segments through flexible production strategies that converge in similar product concept, softening the differences between high-end and mass. In the 'First Community, Second Business' logic, profitability is given on the market offering the right product at the right time according to the logic of just in time production and time to market. The need is to follow in the footsteps of Toyota and introduce the concept of lean manufacturing to the entire design, manufacturing and supply chain: the cars remain in the factory for up to two days but remain in distribution for two months on average (importance of inventory supply management and distribution relationships). Alliances and the search for synergies and economies is a way but not all alliances achieve success<sup>93</sup>. What's the role of consumers? Do they have more power than builders? Yes, they do. Changes in consumer behaviour and non-loyal purchasing behaviours emphasise also in automotive the primacy of the role of marketing research to answer what-if questions and understand the consumer. In fact, it doesn't exist a world unique car, but there are individuals that belong to segments that are similar into separate physical markets and individuals who may come into unstable aggregates demand in a market (e.g. new Fiat Tipo priced €12,500). Competition is now based on intangible assets both related to product and corporate/network.

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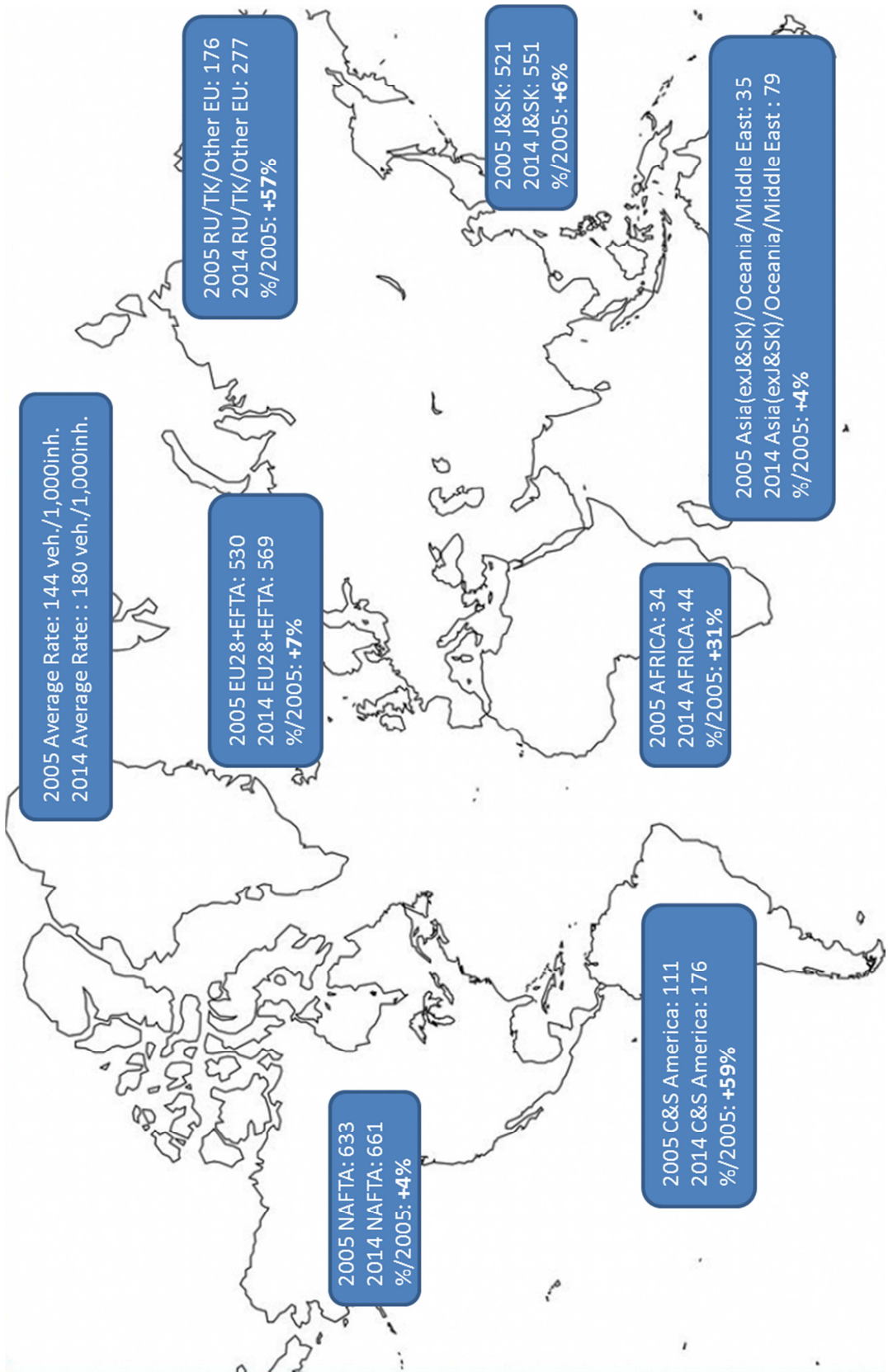
<sup>93</sup> See the previous chapter and Daniela M. Salvioni researches.

### **3.1 Automotive Industry Production and Sales**

The trend of a growing demand in emerging economies and a flat demand in developed countries in the automotive market had already been lived in the years before the Great Recession; with the recent crisis, the decline in demand in the advanced economies has widely spread. The European market appears resized and with a still uphill road to recover from the crisis, while Canada, the US and Japan, which suffered in the period between 2008 and 2011, more recently have relocated to pre-crisis levels. Among all emerging countries, China stands out, stealing the role of first market since 2009 to the United States. The weight of the Chinese market in terms of GDP is increasingly significant, the expansion of the middle-class, progressive urbanisation and the incentive policies to purchase are among the main factors that have enabled the development of Chinese demand. This amazing growth has also affected other markets such as Brazil, Russia and India, which in 2013 showed a width of market lower only to that of China, the US, Japan and Germany. The very positive trend of recent years, finally, allowed Thailand and Indonesia to earn a role, which is still relatively small on the global market. Despite these trends, the motorisation rate (see Figure9), i.e. the number of cars per capita, is still very low in the new markets, the indicator is an average of 79 cars per 1,000 inhabitants, in Asia excluding Japan and South Korea, compared to values higher than 569 cars per 1,000 inhabitants of the main European economies: it is likely, then, that there are opportunities for demand expansion. Between 2005 and 2013 in Europe, there has been a more marked decline in Italy and France, more modest in Spain and the UK, while Germany remained at almost stable production levels. In 2009, Japan and the United States have suffered an offer contraction, but in the following years they were marked by a certain improvement, whereby in 2012-2013 it brought production to levels similar to those recorded in 2007.

The growth of global production was therefore driven by Emerging Countries: between 2005 and 2013, China saw almost five-fold increase in its car production, now covering 28% of world supply, and substantial increases were also seen in India, Mexico and Russia. Offer, therefore, moves in areas characterised by a strong growth in demand and, often, even by lower labour costs, by incentive policies for investment and/or by preferential trade agreements.

Figure 9: Motorisation Rate 2014 versus 2005



Source:OICA Press Conference, 2016, Geneva Motor Show. (Data are ‘all vehicles’: PC, LCV, HCV, Buses. Not including police, military and administration vehicles) Author’s graphic design.

However, the production is also changing, due to other factors. First of all, manufacturers must surely accommodate an increasingly diverse and demanding demand (see above), but they must also tend towards a greater concentration of products in a limited number of global platforms to benefit from economies of scale, as well as greater synergies in production processes. Moreover, environmental compatibility constraints require the search for new solutions to reduce CO2 emissions, while the next few years seem marked by a rise in demand for 'smart' cars, able to interface with modern devices, smartphones and tablets, in particular. Therefore, if the emerging countries will continue to drive global demand in the coming years, several factors contribute to outline a more uncertain future outlook about the configuration of the global auto production. Minor doubts concern, however, the persistence in the near future of critical issues concerning the production capacity<sup>94</sup>. Let's now see the situation for every macro-area.

'North America: U.S. markets are peaking at historic levels, setting a sales record of just under 17.5 million vehicles in 2015, up 5.7% from the year before and topping the high-water mark of 17,402,486 in 2000. U.S. sales are likely to be relatively flat in the next two years and may face a moderate downturn in 2018, victim of economic cycles, higher auto loan interest rates as the Federal Reserve raises overnight rates, and an expected flood of vehicles into the used car market. Mexican auto sales outpaced forecasts in 2015, jumping 19% to more than 1.3 million units, and are expected to surpass 1.5 million by 2021. Investments in new auto factories in Mexico are surging as well; installed capacity is likely to grow more than 50% over the next five years (partially for North American consumption, but also for global export). These conditions compel automakers and suppliers to manage supply chains and factory usage cautiously in the U.S., while continuing to expand in Mexico.

European Union (E.U.): Sales have improved in the European Union since the financial downturn, but the E.U. auto industry is held hostage by local economies that are teetering on the edge of recession. In 2015, new car registrations in the E.U. rose 9.3% year-on-year, to 12.6 million units. But that is well below the record year of 2007, when more than 18 million vehicles were sold in the region. And automakers in some

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<sup>94</sup> To deepen, see chapter 3.

E.U. nations are struggling to make their economies grow — notably France, Greece, Spain, Italy, and Portugal — face losses or low profits, fragmented markets, and the inefficiencies of model proliferation. The E.U. auto industry must figure out ways to better match production capacity to market demand, while simultaneously investing in new potentially strong product areas (for example, small SUVs and crossovers) and in new automobile technologies.

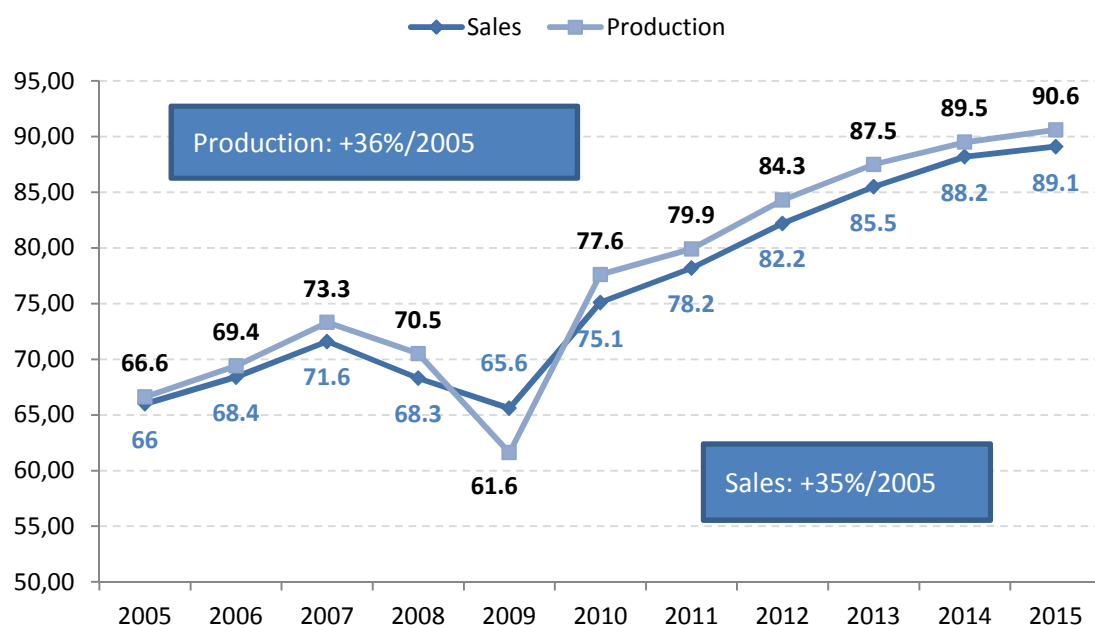
Emerging Nations: Perhaps the biggest downward macroeconomic force in the auto industry today is the underperformance of Emerging Markets, which not too long ago represented a significant opportunity for major gains in the global auto sector. While India's sales remained roughly flat in 2015, China's year-over-year growth slowed to 7.3% from a 10% gain in 2014 and 16% gain in 2013. New vehicle ownership restrictions in China's largest cities will further curtail sales in the coming years. Russia had its second straight year of precipitous decline in 2015; sales were almost 50% below the 2012 peak. And Brazil's sales fell by nearly 1.3 million units, or 30%, from its record high in 2012, a drop that was larger than the entire Mexican car market. Automakers have made massive investments in Emerging Market countries and must be extremely nimble if they are to successfully navigate the next few years. A very conservative approach — closely managing costs and factory capacity — is critical in order to staying above water in Brazil and Russia. China is a different story. Already the world's largest auto market, China is expected to boast annual vehicle sales of more than 30 million by 2020. Smart joint ventures with Chinese companies that can be counted on for consistent returns (a necessary but difficult undertaking, as many Chinese joint ventures struggle) and increased but highly managed production of more profitable, pricier models will be essential for automakers that want to take advantage of potential vehicle sales growth. Does demand grow in Emerging Countries? They have economic dynamics and political factors that differ from ours. Capture a slice of the market is not so simple, but with the help of competitive alliances, the entry in Emerging Markets is facilitated.

Middle East and Africa: Over the next five years, the Middle East and Africa (ME&A), a laggard, relatively non-motorised region, will likely see strong and consistent automobile sales growth; the biggest improvements are expected in Iran,

Egypt, South Africa, and Nigeria. Along with this growth, automaker factory activity in the region will increase significantly. By 2021, nearly 3 million cars will be built yearly in the ME&A, an output increase of about 50%, according to PwC Autofacts®. Substantial factory capacity improvements are likely in Algeria, Nigeria, Egypt, and Iran. Given the diversity of this region — there are more than 50 distinct markets — automakers face the obstacle of satisfying multiple unique local requirements in order to thrive. Among them are domestic assembly quotas, import and export tariffs and duties for parts and vehicles, gas or diesel preferences, and local customs that may dictate the design of interior and exterior features. To gain a strong sales foothold in the ME&A, automakers must also have a substantial factory and distribution presence<sup>95</sup>.

According to OICA, after a very difficult 2009, global automotive sales and production results have improved since then as shown in figure 10.

Figure 10: Global Results 2005-2015: Total Production and Sales (in Million)



Source: OICA Press Conference, 2016, Geneva Motor Show (Data are ‘all vehicles’: PC, LCV, HCV, Buses. Not including police, military and administration vehicles).

The demand for cars has also undergone changes more directly linked to consumer preferences: in Emerging Markets the development of a middle-class ready to show the acquired level of prosperity, stimulates demand for larger cars or, otherwise, belonging

<sup>95</sup> See PriceWaterhouse Cooper, 2016.

to a segment higher the basic one. In China for example, the SUV segment is the one that grew more in 2012, and also the demand from some Chinese inland areas, still relatively little known but very populous, was recording an upgrading of preferences towards brands that offer design and higher quality; the major advanced economies and particularly the countries hit harder by the squeeze on household income are showing, however, a shift in demand to smaller, compact and low-power cars; in the mass-market, consumers are more informed and demanding than ever before, requiring a greater diversity of models.

### 3.2 Automotive Industry Trends

According to PwC (PriceWaterhouse Cooper, 2015 and 2016), some uncertainty for the automotive industry future remains, the main challenge is the unevenness of global automotive markets. For the past 10 years, OEMs and suppliers have generally chased global sales growth hoping to improve margins by leveraging automobile platforms in multiple regions and striving for economies of scale. Because of long product cycles and deep capital investments, every commitment in the auto industry is a risky and complex endeavour. Now, they have to build market share and widen profits from the rapid changing products. According to the latest research, automakers and suppliers can no longer sit out the industry's transformation<sup>96</sup>. In 2015, while the record sales in the U.S. were giving a boost to the sector and the growing economic malaise was flating sales in the rest of the world, especially in Emerging Markets, the auto companies were dabbling with new technologies and vehicle concepts that have the potential to transform the transportation. PriceWaterhouse Cooper is talking about the so-called *connected car* and the *intelligent car*. The connected car is 'a fully digitised vehicle with Wi-Fi; advanced infotainment systems and apps; vehicle-to-vehicle communications, that let cars on the road 'talk' to each other, exchanging basic safety data, such as speed and position; real-time location services and routing based on traffic conditions; and networked Web links that facilitate vehicle diagnostics and repairs'<sup>97</sup>.

The intelligent car is a 'precursor of the autonomous vehicle, the intelligent car can give drivers a first taste of the experience of relinquishing control of a vehicle, with

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<sup>96</sup> See PriceWaterhouse Cooper, 2016.

<sup>97</sup> See PriceWaterhouse Cooper 2016, p.4.



such functions as self-braking, self-parking, automatic cruise control based on road conditions, automatic accident-avoidance features, computer-operated power steering, and electric parking brakes, as well as electronic throttles and engine control<sup>98</sup>. Even if the idea of fully autonomous vehicles is too futuristic for much of the driving public, for Original equipment manufacturers (OEMs) it will be an exciting period of transformation, representing enormous opportunities but also challenges to be navigated in terms of designing, manufacturing, and upgrading traditional powertrain models while staking a claim in emerging technologies and improving customer experiences.

They therefore maintain that three powerful forces are driving changes in the auto industry over the next 10 years:

1. shifts in consumer demand a new era of personal transportation;
2. expanded regulatory requirements for safety and fuel economy;
3. the increased availability of data and information.

Consumers appear to be rethinking their opinion with individual automobile brands and viewing cars more as transportation machines. This is affecting how much people are willing to pay for automobiles; such willingness is also affected by the waning of product differentiation. Infotainment is a way for OEMs and suppliers to differentiate their product. Consumers want a no-pressure car-buying experience that includes the purchase decision, financing, and insurance because they have already browsed online to gather the information they need to choose a car. In the Internet era, where purchasers want a 'buy now' button and where the earn from new-car sales is little, dealers are still an important competitive advantaging part of the value chain, so that they still want to use the test drive as a way to get face-to-face with consumers and close a sale. The new era of personal transportation, also related to connected and intelligent car, leads to new ways of thinking car even if traditional powertrains and engines will dominate the decades to come. Not only will autonomous car be a tough sell, but they also mean new type of competitors and competitive-strategic alliances. In fact, the traditional automotive companies are merging with software ones, bringing with them their own cultures, product development processes and time and so on. The cost of electronics and software content in autos was less than 20% of the total cost ten years ago, while today

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<sup>98</sup> See PriceWaterhouse Cooper 2016, p.4.

it represents as much as 35%<sup>99</sup>. The contribution of electronic systems is made up more than 90% of innovations and new features. Another chance to increase margins while becoming closer with customers is represented by telematics features, including semiautonomous driving aids such as automatic parallel parking and lane-keeping assistance as well as sensor-based reporting on car maintenance and usage<sup>100</sup>. The OEMs and suppliers' lack and the increasing presence of technology necessary to make connected and intelligent cars as web networking, sensors, and software cannot be ignored or downplayed by OEMs. Software breakthroughs are becoming more and more critical and competition is increasingly coming from non-traditional players. The most important thing is that the time frame for new vehicle launches is typically three to four years, while the cycle for new software iterations is measured in months.

□ *A lot of rumours are around the 'Project Titan', the Apple car, but it is sure that Cupertino aims to fill the gap with Google in car development before 2020. The Apple car maybe electric and fully autonomous: thousands of engineers have been hired to develop it, in particular from Tesla and some of possible cooperation with German partners have been explored. It seems that the car will be assembled in Vienna thanks to a partnership with the Austrian Magna Steyr, a specialised automotive components firm. (Source: the Wall Street Journal)*

□ *Google's goal is to transform mobility by making it easier, safer and more enjoyable. Its self-driving car is designed to navigate safely through city streets, thanks to sensors able to detect objects, pedestrians, cyclists, vehicles, plastic shopping bags and rogue birds, as far as two football field away in all directions. The testing fleet includes both modified Lexus SUVs and new prototype vehicles that are designed from Google. Because it takes a lot of parts to build a fully self-driving car, Google has established global automotive partnerships from around the world including Roush, Bosch, Continental, FRIMO, LG Electronics and many others. Recently, Sergio*

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<sup>99</sup> According to studies by Manfred Broy, a professor of informatics at Technical University, Munich.

<sup>100</sup> PriceWaterhouse Cooper invites to think about the service furnished by OEMs and dealer in alerting a car owner to upcoming maintenance or repairs. The Consultant Group invites also to think about how telematics features afford opportunities for tie-ins with insurers, such as offering discounts for customers who drive safely.

*Marchionne the CEO of Fiat Chrysler Automobiles and the ex CEO of Hyundai Motors America and today CEO of Google Car Project John Krafcik have signed an agreement to realise the self-driving car. The alliance considers that FCA will produce 100 prototypes deriving from Chrysler Pacifica model. The manufacturing knowledge of FCA needs the technological Google. With the certainty that American roads will be safer and less congested, Google has also established an alliance with Ford and Uber to press US Authorities to define clear rules on the future mobility. (See Google self-driving car website)*

Tighter corporate average fuel economy (CAFE) regulations in the United States as well as the rest of the world are more expensive for OEMs to comply with, requiring higher volume to amortise increasing costs. Regulators are also mandating that more safety-related features must be included as standard equipment on new models, so in a short timeframe automakers have to achieve step-change improvements. To improve performance and to meet stricter fuel economy regulations, automakers will have to take risks in product development, such as replacing materials with lightweight manufacturing ones, new introduction in the car lineup, improving aerodynamics, using turbo-engines and other advanced transmission and engine solutions, alternative powertrains and other types of tactics. This will add further costs.

□ *In order to eliminate inherent inefficiencies delivering much better fuel economy, Honda has recently adopted continuously variable transmissions that operate on pulleys that constantly adjust gear ratios to provide optimal performance in transferring power to the wheels.*

□ *To meet legal requirements by 2020, BMW Group, through the Efficient Dynamics development strategy, will develop efficient vehicle concepts characterised by intelligent lightweight design and optimised aerodynamic features. (See BMW Group Corporate Website)*

□ *The ‘Sustainable Zoom-Zoom’ plan was announced by Mazda in 2007, its approach is to reduce CO2 emissions ensuring driving pleasure to customers. Therefore, Mazda is improving its technologies in searching*

*thermal efficiency of an engine and weight reduction for the vehicle body, but it is also adopting a strategy that gradually introduces electric devices such as brake energy regeneration system, hybrid and other system. (See Mazda Corporate Website)*

□ *The expense of mandated safety equipment is also difficult for OEMs to pass along and according to National Automobile Dealers Association, U.S. CAFE standards, that will go into effect in 2016, are projected to add as much as US\$1,000 to the production cost of a vehicle. OEMs must consider that only a minority of auto buyers are willing to pay for more environmentally friendly choices, such as electric vehicles, so that the cost pressure would fall largely on them. For example, one of CAFE's requirements is that all new vehicles have a backup camera that increases vehicle costs by as much as \$200. A cost that some of OEMs will have to cover themselves.*

The pressure deriving from consumer preferences and stricter regulations leads OEMs to adopt next-generation platforms and platform modularisation. In other words, they are increasing complexity in terms of number of models they offer while improving product commonality, reducing the number of vehicle architectures on which they are built<sup>101</sup>.

□ *Volkswagen is the first major OEM moving toward four modular platforms. GM is going from 30 core and regional platforms in 2010 to 26 in 2015, and has announced plans to move to four flexible platforms by 2025. Toyota, Ford, and other OEMs are following a similar approach.*

And last, in recent years, the proliferation of information about vehicle usage and driver behaviour is favored by sensors and telematics systems, which have become more and more common. All players across the automotive value chain are interested in collecting more customer and car data, but they don't know how to use it. Meanwhile,

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<sup>101</sup> According to PriceWaterhouse Cooper, 'the adoption of these next-generation common platforms will also lead to a consolidation of suppliers (as said in §2.2) that will result in a smaller number of large, global players. Ford recently stated that it will reduce its supplier base from its current 1,150 to 750, and other OEMs plan to follow suit'.

digitalisation gives buyers greater bargaining power as consumers are awash in easily accessible information about automobile specifications, prices, discounts, quality, and performance. Only few OEMs have defined strategy to utilise the customer and vehicle data which they collect.

□ *‘Mercedes, for example, has a program called ‘Mercedes Me’ in Europe, which is a package of customer services covering vehicle purchasing, financing, servicing, and even short-term rentals that are tailored for individuals and available on multiple digital platforms. The goal is to consolidate disparate customer data and identifying information to increase consumer loyalty and purchases, emulating the models of Internet companies such as Apple, Amazon, and Google’ (PriceWaterhouse Cooper, 2015).*

The combined impact of these three dimensions makes us consider that, in a strategic way of acting, automotive industry players should prioritise agility and capacity to evolve to be on the market better and before competitors. In a global landscape they must be open for partnering with companies from outside the traditional automotive sphere to share revenues and the ownership of intellectual capital. In a global saturated arena, where traditional large markets, like the U.S. and E.U., are relatively easy to steer, automotive industry, through market research and marketing research, could prioritise growth in developing areas which represent as much as two-thirds of potential sales gains in the coming years. Any implemented strategy must capture competitive customer value, this means investing in new technologies and features that attract customers, developing a green factory, cementing healthy collaborative relationships with suppliers and distributors.

As Brondoni and ISTEI affirm, also McKinsey says that today’s markets are rapidly changing because of the development in emerging markets, the accelerated rise of digitalisation and new technologies, the expansion of sustainability policies, and changing consumer preferences in terms of ownership. McKinsey, together with Stanford University, has outlined 8 perspectives that confirm what PriceWaterhouse Cooper said for the short time, but they project them to 2030. Hereby follows a table explaining that digitisation and new business models are bringing into the industry four

disruptive technology-driven trends: diverse mobility, autonomous driving, electrification, and connectivity (see Table 3).

**Table 3: Overview of the Disruption Scenarios**

<b>Diverse mobility</b>
City policies discouraging private vehicles
New, on-demand business models
Modal shift away from car ownership to shared mobility
<b>Autonomous driving</b>
Regulatory challenges are overcome
Development of safe and reliable technical solutions
Consumer acceptance and willingness to pay
<b>Electrification</b>
Battery prices continue to decline
Regulator-driven emission restrictions
Consumer demand for electrified powertrains
<b>Connectivity</b>
Uptake of car connectivity globally
Consumers regularly using paid content

Source: McKinsey&Company, 2016. Author’s graphic design.

New business models moved by shared mobility (on-demand mobility services e.g. car-sharing and e-hailing) and connectivity services (data-driven services as apps, software upgrade, remote services) could expand automotive revenue pools by about 30% or up to \$1.5 trillion in additional revenue potential in 2030, compared with about \$5.2 trillion from traditional car sales and aftermarket products/services. The increasing speed of innovation and imitation processes and the rapid spread of information and communication make consumer constantly aware of technological advances into connectivity and shared mobility. This will require cars, both private ones and shared ones, to be upgradable and will shorten life cycles.

Despite this, global car sales will continue to grow driven by the overall macroeconomic development, but the annual growth rate is expected to drop from the

3.6% over the last five years to around 2% by 2030<sup>102</sup>. New mobility services may produce a decline of private-vehicle sales, that is offset by increased sales in shared vehicles that need to be replaced more often due to the wear and tear caused by higher level of utilisation.

Changing consumer preferences, tightening regulation, and technological breakthroughs will lead to a transition from a traditional market of all-purpose vehicles to a market for fit-for-purpose mobility solutions, new segments of specialised vehicles designed for very specific needs<sup>103</sup>. In accordance to what has so far been stated, up to one out of ten new cars sold in 2030 may likely be a shared vehicle and one out of three new cars sold could potentially be a shared vehicle as soon as 2050.

Automotive players need more granular view of mobility market so that segmentation processes must be conducted using city type (population density, economic development, and prosperity) as the most relevant segmentation dimension: in fact, across megacities and rural areas, consumer preferences, policy and regulation, and the availability and price of new business models will strongly diverge. The traditional regional perspective on the mobility market will be replaced by the type of city, the new key indicator for mobility behaviour. ‘By 2030, the car market in New York will likely have much more in common with the market in Shanghai than with that of Kansas<sup>104</sup>’.

Cars taking control from drivers is medium-term reality. The innovation of advanced driver-assistance systems (ADAS), developed tech players and start-ups in alliance with OEMs, will play a crucial role in preparing regulators, consumers, and corporations, even if its introduction has shown that pricing, consumer understanding, and safety/security issues are impeding a fast penetration. We have to wait until 2020, before fully autonomous cars will offer value for consumers (the ability to work while commuting, or the convenience of using social media or watching movies while

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<sup>102</sup> See McKinsey&Company 2016.

<sup>103</sup> McKinsey in its study ‘signs that the importance of private-car ownership is declining: in the United States, for example, the share of young people (16 to 24 years) who hold a driver’s license dropped from 76% in 2000 to 71% in 2013, while there has been over 30% annual growth in car-sharing members in North America and Germany over the last five years.(...) Consumers’ new habit of using tailored solutions for each purpose will lead to new segments of specialised vehicles designed for very specific needs. For example, the market for a car specifically built for e-hailing services—that is, a car designed for high utilisation, robustness, additional mileage, and passenger comfort—would already be millions of units today, and this is just the beginning’.

<sup>104</sup> See McKinsey&Company 2016, p.10

traveling) being commercially available: once technological and regulatory barriers have been overcome, up to 15% of new vehicles sold in 2030 could be fully autonomous.

Stricter emission regulations, lower battery costs, more widely available charging infrastructure, increasing consumer acceptance and incentives (tax breaks, special parking and driving privileges, discounted electricity pricing...) will help the adoption of electrified vehicles (hybrid, plug-in, battery electric, and fuel cell). The speed of their adoption varies strongly at the local level due both to the consumer pull demand and to regulatory push policies; in fact, it is expected that the adoption rate will be highest in developed dense cities, while it will be lower in small towns and rural areas until continuous improvements in technology and costs will lead to less pronounced differences. With battery costs potentially decreasing to \$150 to \$200 per kilowatt-hour over the next decade, in 2030, the share of electrified vehicles could range from 10% to 50% of new-vehicle sales<sup>105</sup>.

In a complex and diversified automotive competitive landscape, new entrants, such as the mobility provider Uber, the technology giants Apple or Google, force the traditional OEMs to simultaneously compete and cooperate with competitors on multiple fronts. Mobility providers (Uber, for example), tech giants (such as Apple, Google), and specialty OEMs (Tesla, for instance) increase the complexity of the competitive landscape.

□ *Uber Technologies Inc. was founded in 2009 in San Francisco. It provides a service of private car transportation through a mobile app, which allows consumers with smartphones to submit a trip request which is then routed to Uber drivers who use their own cars. The service is available in over 66 countries and 485 cities worldwide, the pricing is similar to that of taxis, but it is calculated on a distance basis whether Uber car is travelling at a speed greater than 18km/h, otherwise it is calculated on a time basis. The complete fare of the ride is automatically billed to the*

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<sup>105</sup> As PriceWaterhouse Cooper said, the internal-combustion engine will remain very relevant until and beyond 2030, because hybrid electrified vehicles have both a gasoline engine that an electric one.



*customer's credit card so that there's no money transfer outside Uber and the consumers. (See Uber Corporate Website)*

Traditional automotive players, that are seeking to reduce costs, improve fuel efficiency, reduce emissions, and are becoming more capital-efficient, will lead to consolidation or to new forms of partnerships among incumbent players. In particular, the establishment of partnerships with new entrants is to develop software competences that are increasingly becoming one of the most important differentiating factors for the industry (ADAS/active safety, connectivity and infotainment).

New market entrants, such as the big tech giants, specialised OEMs such as Tesla, cash-rich high-tech companies and start-ups, the Chinese car manufacturers, with impressive sales growth, have the opportunities to leverage the ongoing disruptions to play an important role globally, targeting initially only specific, economically attractive segments and focusing on selected activities along the value chain before potentially exploring further fields.

In such complex and competitive market, automotive players should align their strategic priorities:

1. *Prepare for uncertainty*, anticipating new market trends, exploring alternatives and complements to the traditional business model such as new mobility services.
2. *Leverage partnerships* to succeed while forming alliances or participate in specialised ecosystems.
3. *Drive transformational change*, through innovation and software-enabled consumer value definition, cybersecurity, data privacy, and continuous product updates.
4. *Reshape the value proposition* differentiating their products/services and change their value proposition from traditional car sales and maintenance to integrated mobility services.

#### 4. Automotive Industry Competitive Strategic Alliances

The automotive world is characterised by mergers, acquisitions and alliances that continually reshape its perimeters. The phases of the automotive industry are characterised by periods of consolidation and mergers that change the competitive global scene and by periods of entry of new players such as emerging countries. The rapid adoption of digital technology in emerging markets is reshaping the world's markets since developing economies now have easier access to capital, talent, intellectual property and other resources that were unavailable to them in the past<sup>106</sup>.

□ *The history of Chinese Automotive Industry has been analysed in the first section of this chapter. As shown previously, the China's industry started in the 1950's and reached a boost in the 1990's. Foreign and domestic players have set up several joint ventures respectively to enter in the Chinese market overstepping duties and to increase local production. In 1983, American Motors Corporation signed a 20-year contract to produce Jeep-model vehicles in Beijing. In 1984, Volkswagen established an alliance to assembly passenger cars in Shanghai, while Peugeot agreed to produce vehicles Guangzhou.*

□ *Indian automotive industry began in the 1940s. As India began to liberalise its automobile market in 1991, a number of foreign firms also initiated joint ventures with existing Indian companies. The industry attracted billion of foreign direct investment during the period April 2000 to June 2015 and only by 2000 there were 12 large automotive companies in the Indian market, most of them subsidiaries of global companies. Maruti Suzuki was the first and one of the most successful new entries. Ford plans to manufacture in India two families of diesel and petrol engines by 2017 to power Ford vehicles globally. General Motors planned to increase the capacity plant while Fiat-Chrysler planned to manufacture Jeep Grand Cherokee model and Mercedes Benz the GLA. Also the supplier business is interested to increase capacity in India as for example the case of the world's largest air bag suppliers Autoliv Inc, Takata Corp, TRW*

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<sup>106</sup> See, Lambin Jean-Jacques 2014, cit.

*Automotive Inc and Toyoda Gosei. BMW, instead, has announced to procure components from seven India-based auto parts makers.*

This research aims to study the competitive-strategic alliances in the automotive industry, verifying, as mentioned in the introduction, Avvocato Agnelli's words, according to which the automotive industry, especially in the mass market, will have to restructure favouring the concentration in a few large groups, sharing knowledge, processes, costs and risks and also taking advantage of technological convergence. Therefore, in this research it is proposed: 1) a qualitative analysis of the networks arising from major equity alliances according to the disclosure of available information issued by large groups; 2) a quick view of some cooperation agreements between companies in the sector. The research is coupled with the existing literature which a) demonstrated how horizontal alliances shape the global automotive industry into distinct strategic blocks that become a basis for competition within the industry; either brings together firms with complementary differences or pool together firms with supplementary similarities<sup>107</sup>; b) have stressed how vertical networks and individual ties within them have become structured over time<sup>108</sup>.

#### **4.1 Equity Strategic Alliances in the top 10 OEMs**

This paragraph aims to investigate international joint ventures, equity participation merger and acquisition that have been activated by the top 10 OEMs. All the information in this paragraph originates from Corporate Websites, in particular those provided in the Investor Relation section.

##### *Toyota Motor Corporation*

The history of the modern Toyota keeps its roots in the inquisitiveness and thirst for knowledge di Sakichi e Kiichiro Toyoda. Trying to improve society by making a positive contribution, they set out to improve the weaving industry. After many years of continuous improvements, or Kaizen, they started to search for new opportunities travelling to Europe and to the United States, investing in automotive and on gasoline-powered engines. The Automobile Department was established in Toyoda Automatic

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<sup>107</sup> Cf. Gulati Ranjay, 1998; Nohria Nitin and Garcia-Pont Carlos, 1991.

<sup>108</sup> Cf. Gulati Ranjay, 1998.

Loom Works, Ltd, in 1933, while operations started in 1935. Today's Toyota Motor Co., Ltd. was established in 1937 and now has a few divisions in its branding toolkit: Lexus serves affluent customers with luxury vehicles; Scion used to appeal to younger drivers exclusively in North America; Daihatsu focuses on super-small vehicles and Hino is dedicated to commercial trucks. The Lexus brand was launched in Japan in 2005. It was first launched in the US to target yuppies, the new rich who had acquired considerable wealth within their own generation. In 1989 the Lexus dealership was established and the brand gained rapidly the recognition as a luxury brand with competitive pricing 10.000\$ lower than the Mercedes-Benz model. As shown in Table 4, Toyota owns Daihatsu, Hino Motors (manufacturer and seller of large trucks, buses, small commercial vehicles, passenger vehicles, engines and spare parts) and two of the leading global suppliers Denso Corporation (manufacturer and seller of auto parts) and Aisin Seiki (manufacturer and seller of electrical components for automobiles and other applications, air conditioning equipment and general appliances and electrical appliances). Toyota also holds a 26.7 percent stake in Fuji Heavy Industries parent company of Subaru.

In 2016, Toyota Motor Corporation and its subsidiary Daihatsu Motor Co., Ltd. reached an agreement whereby Daihatsu will become a wholly-owned subsidiary of Toyota by way of a share exchange to enhance the value of both brands. Both companies will utilise each other's bases of operations in emerging markets. While Daihatsu will take the lead in enhancing efficiency and adaptability in development, procurement, and production processes, Toyota's sales expertise and infrastructure will be utilised to improve Daihatsu's branding and profitability in Japan. Although Toyota and Daihatsu will engage in friendly competition and maintain separate management styles, the aim of the agreement is to develop ever-better cars by adopting a unified strategy for the small car segment: 'the differentiation between Toyota's and Daihatsu's brands will continue, and the product line-ups of both will be optimised in accordance with customer preferences, with Daihatsu taking the lead in developing products offered within the small car line-ups of both brands. At the same time, Daihatsu will continue to focus on developing vehicles aimed specifically at customers in the areas in which the brand already has a strong presence, while also honing its expertise and processes

related to product planning and technological development for mini-vehicles'<sup>109</sup>. The agreement helps to achieve sustainable growth, but also jointly overcome future prohibitive resources-undertaking obstacles, such as the development of next-generation technologies and entry into business areas with growth potential. 'Both companies will share development and deployment strategies for new technologies from the initial conceptual stages. Toyota's focus will remain on technologies related to the environment, safety, user experience, and comfort, while Daihatsu will continue to leverage its aptitude for turning technologies into packages for vehicles, as well as developing cost- and fuel-efficient technologies. Daihatsu will also contribute to the development of next-generation technologies from the perspective of cost-efficiency and miniaturisation. The company's specialised car manufacturing expertise will be shared within the Toyota Group, which will contribute to further enhancing the cost competitiveness of larger vehicles'<sup>110</sup>.

**Table 4: Toyota Group in Japan**

<b>Company Name</b>	<b>Establishment</b>	<b>Main products/activities</b>	<b>Capital (¥ million)</b>
TOYOTA INDUSTRIES CORPORATION	Nov. 1926	Manufacture and sales of spinning and weaving machines, industrial vehicles and automobiles; logistics	80,462
AICHI STEEL CORPORATION	March 1940	Manufacture and sales of specialty steel, forged steel products and electromagnetic parts	25,016
JTEKT CORPORATION	Jan. 2006	Manufacture and sales of machine tools, auto parts	45,591
TOYOTA AUTO BODY CO., LTD.	Aug. 1945	Manufacture of auto and special vehicle bodies and parts	10,371
Toyota Tsusho Corporation	July 1948	Business transactions related to various items in Japan and between foreign countries, import and export	64,936
AISIN SEIKI CO., LTD.	Aug. 1965	Manufacture and sales of auto parts	45,049

<sup>109</sup> See Toyota Motor Corporate Website, cit.

<sup>110</sup> See Toyota Motor Corporate Website, cit

DENSO CORPORATION	Dec. 1949	Manufacture and sales of electrical components for automobiles and other applications, air conditioning equipment and general appliances and electrical appliances	187,457
TOYOTA BOSHOKU CORPORATION	May 1950	Manufacture and sales of vehicle interior parts, filters and power train mechanical parts and textiles	8,400
Towa Real Estate Co., Ltd.	Aug. 1953	Owning, managing, buying, selling and renting out land, management and rental	59,450
TOYOTA CENTRAL R&D LABS., INC.	Nov. 1960	Fundamental research and testing for technical development for the Toyota Group	3,000
TOYOTA MOTOR EAST JAPAN, INC.	July 2012	Manufacture of automobiles and parts, all-wheel drive powered wheelchair, automatic vehicle maintenance lift	6,850
TOYODA GOSEI CO., LTD.	June 1949	Manufacture and sales of rubber, plastic and urethane products, semiconductor related products, electronic products and adhesives	28,027
Hino Motors, Ltd.	May 1942	Manufacture and sales of large trucks, buses, small commercial vehicles, passenger vehicles, engines and spare parts	72,717
DAIHATSU MOTOR, CO., LTD.	March 1907	Manufacture and sales of automobiles, specialty vehicles and parts	28,404
TOYOTA HOUSING CORPORATION	April 2003	Planning, sales, construction and after-sales service of housing	7,400
TOYOTA MOTOR KYUSHU, INC.	Feb. 1991	Manufacture and sales of automobiles and parts	45,000

Source: Toyota Motor Corporate Website.

One of the most important equity alliances that Toyota activated in past it was called NUMMI.

□ NUMMI New United Motor Manufacturing Incorporated was a 50-50 joint-venture company established in the early 80's by Toyota and General Motors. Toyota contributed to the blueprint or to the exchange of technologies, while General Motors furnished a plant operated by Toyota producing the Chevrolet Noda a new Corolla-based General Motor vehicle. General Motors expected to gain higher sales volumes and compact car production expertise, but it was so difficult to incorporate what it learned from Toyota. On the other hand, the Japanese reached what they set themselves as a goal: they expanded in North America; opened a new wholly-owned plant three years later the born of NUMMI and started to produce the new Corolla; gained the UAW's consensus on Toyota Production System and, last, they quickly adapted their systems to local procedures in terms of ordering and purchasing methods with local suppliers. In September 2009, NUMMI was closed.

In Japan, Toyota maintains separate dealership sales channels. In fact, it operates through three different types of dealers: 1) Vehicle Dealers which sell and provide after-sales servicing of vehicles (new and used) and automotive parts and accessories, auto insurance services, and other related and peripheral services; 2) Parts Distributors which distribute repair parts for Toyota vehicles and other automotive parts and accessories; 3) Rent-a-Lease Dealers who Rent and lease Toyota vehicle. In the rest of the world, Toyota has built a solid global sales network of almost 200 overseas distributors. As the main sales channel for their respective regions, overseas distributors execute sales strategies that are sensitive to the needs of local consumers. They perform a crucial role in keeping all of Toyota in tune with market changes and customer needs and in creating new Toyota fans by boldly pioneering potential demand.

### *Volkswagen AG*

Volkswagen was founded by Hitler in 1937; he decided to convert the luxury production into a mass and popular one to gain the people's approval. Nowadays, the Volkswagen group consists of two divisions: the Automotive Division that comprises both the Passenger Cars Business Areas and the Commercial Vehicles/Power

Engineering Business Area and the Financial Service Division which combines dealer and customer financing, leasing, banking and insurance activities, fleet management and mobility offerings. The Group comprises twelve brands from seven European countries: Volkswagen Passenger Cars, Audi, SEAT, ŠKODA, Bentley, Bugatti, Lamborghini, Porsche, Ducati, Volkswagen Commercial Vehicles, Scania and MAN. In addition, the Volkswagen Group offers a wide range of financial services, including dealer and customer financing, leasing, banking and insurance activities, and fleet management.

**Table 5: Volkswagen Group**

<b>Divisions</b>	<b>Brand/Business</b>
<b>Automotive</b>	Volkswagen Passenger Cars Audi SKODA SEAT Bentley Porsche Volkswagen Commercial Vehicles Scania Man Other
<b>Financial Services</b>	Dealer and customer financing Leasing Direct Bank Insurance Fleet Management Mobility Offerings

**Source: Volkswagen Group Corporate Website, Annual Report 2015.**

With the exception of the Volkswagen Passenger Car and the Volkswagen Commercial Vehicles brands, all the other brands in the automotive division are legally separated entities. The Volkswagen Group is also active in manufacturing large-bore



diesel engines for marine and stationary applications (turnkey power plants), turbochargers, turbomachinery (steam and gas turbines), compressors and chemical reactors, vehicle transmissions, special gear units for wind turbines, slide bearings and couplings as well as testing systems for the mobility sector.

The history of the Group is characterised by multiple equity alliances. In 1964 it started its expansion by buying Auto Union (Audi's owner) from Daimler. 99.55% of Audi is the property of Volkswagen AG. Lamborghini is 100% owned by Audi, while Italdesign Giugiaro (acquired in 2010) and Ducati (bought in 2012) are fully owned by Lamborghini. The Volkswagen Group also has a joint venture with the Chinese FAW Group (established in 1991 and called FAW-Volkswagen Automobile Co., Ltd): the ownership is 51% FAW, 20% Volkswagen AG, 10% Audi AG and 19% Volkswagen (China) Invest. The company manufactures Audi and Volkswagen branded passenger cars for sale in China.

After the break of the agreement between FIAT and SEAT, Volkswagen bought the latter in 1981. Ten years later, the Škoda brand has been integrated into the Group, it has been totally owned by Volkswagen Group from 2000. In 1998, Bentley, Bugatti, Lamborghini brands were totally bought out. From 2008 the Group has owned the majority stake of Scania AB, including 70% of voting rights and 45.5% of capital rights. In July 2009, the Porsche integration operation started for almost 49.9% of stakes and, later in August 2012, the remaining 50,1% was acquired by the Group. July 4, 2011, the Volkswagen Group ensured a majority in MAN SE, with 53.7% of capital and 55.9% of the voting rights; the acquisition was aimed at creating a hub of heavy vehicles in Europe, through the merger of the newly purchased Scania AB.

In January 2010, the Volkswagen Group became the partner of Suzuki, thanks to an investment of 1.6 billion Euros needed for the purchase of 107,950,000 shares (19.9%) of the Japanese car manufacturer. The deal was definitely closed in 2015.

### *Hyundai Motor Group*

The South Korean multinational conglomerate Hyundai Motor Group is the largest vehicle manufacturer in South Korea, the 2nd largest South Korean *chaebol* or

conglomerate after the Samsung Group (Hyundai Motor group, Hyundai Heavy Industries group, Hyundai Development group, Hyundai Department group, and Hyundai Marine and Fire Insurance group) and was formed through the purchase of 51% of South Korea's second-largest car company, Kia Motors, by Hyundai Motor Company in 1998. Today's Hyundai owns 33.88% of Kia Motors. The Hyundai Motor Company was established in 1967, it produced the Pony model, Korea's first automobile; while Kia Motors Corporation (established in 1944) has made steady progress to become one of Korea's major automakers. The two companies have a production capacity of almost 8million vehicles per year, sold in over 200 countries through 48 sales offices and about 12,200 dealerships. Currently the group has 6 divisions and 32 subsidiaries that confirm the winning diversification strategy of the Korean *chaebol*<sup>111</sup> as synthesised in the following table.

**Table 6: Hyundai Motor Group**

<b>Divisions</b>	<b>Subsidiary</b>	<b>Activities</b>
<b>Automobiles</b>	Hyundai Motor Company	Manufacture and sales of automobiles through Hyundai and Genesis brands
	Kia Motor Company	Manufacture and sales of automobiles through Kia brand
<b>Steel</b>	Hyundai Steel	Manufacture and sale of steel products for automobiles, shipbuilding, construction and other industrial fields
	Hyundai BNG Steel	Manufacture and sale of high quality stainless for automobiles, construction, IT and home appliances
	Hyundai Special Steel	Manufacture and sale of wire rods, steel bars, automotive parts and materials
<b>Construction</b>	Hyundai Engineering &Construction	Infrastructure, environmental engineering, plants, construction, housing, nuclear & electric power plants

<sup>111</sup> See section1.3 Korean Automotive Industry History: the Role of 'Chaebol'.

	Hyundai Engineering	Chemical processing plants, power & energy plants, infrastructure, environmental plants, industrial plants, construction, housing, asset management
	Hyundai Engineering & Steel Industries	Construction of steel frames for bridges, buildings and plants, ocean structures, leasing of land & marine equipment, leasing of heavy machinery
	Hyundai Architects & Hyundai Engineers Associates	Architectural design, construction management and supervision, urban planning, structural safety inspection, construction
	Hyundai City Corporation	Taeon Enterprise City Real Estate Development Project
<b>Parts</b>	Hyundai MOBIS	Automotive parts & manufacturing, module assembly, aftermarket parts and accessories
	Hyundai WIA	Manufacture of machine tools, automotive parts, industrial machinery, defence industry
	Hyundai MSEAT	Manufacture of auto parts (seats)
	Hyundai KEFICO	Development and manufacture of parts for automotive electronic control systems
	Hyundai AUTRON	R&D, manufacture, sale and service of automotive semiconductors and electronic control system
	Hyundai MNSOFT	Digital map solutions, in-vehicle infotainment devices (navigation software, black boxes), LBS
	Hyundai POWERTECH	Manufacture of automotive parts and

		power train technologies
	Hyundai DYMOS	Manufacture of automotive parts for cars and heavy-duty vehicles, special projects
	Hyundai IHL	Manufacture of automotive lamps
	Hyundai PARTECS	Manufacture of automotive service parts
<b>Finance</b>	Hyundai Capital	Auto financing, personal loans, mortgage loans, financing for the self-employed
	Hyundai Card	Credit card services
	Hyundai Commercial	Credit finance (industrial financing, corporate financing)
	HMC Investment Securities	Personal banking, corporate banking, retirement pensions, and derivatives
	Hyundai Life	Life insurance
<b>Others</b>	Hyundai GLOVIS	Integrated logistics, distribution services
	Hyundai Rotem	Manufacture and operation of rolling stock and railway systems production of ground weapon systems, manned and unmanned weapon systems, construction of steelmaking facilities, car manufacturing plants, and environmental plant
	INNOCEAN WORLDWIDE	Marketing & communications services
	Hyundai Farm Land & Development	Agriculture and livestock production, processing, distribution
	Hyundai AutoEver	Total ICT services including information system consulting, system integration (SI), IT outsourcing, and IT convergence service
	Hyundai NGV	R&D service and HRD

Source: Author's contribute, design from Hyundai Motor Group Corporate Website.

### *General Motors (GM)*

The American General Motors is one of the Big Three, whose story has been documented in the first section. It was founded in 1908 as a holding company controlled by William C. Durant, owner of Buick. It was the most important competitor of Ford and its Model T, because of the strategy to sell the second car to the Americans, a car for every purse and purpose. What is sure is that General Motors has played a pivotal role in the global auto industry for more than 100 years, from the first Buick horseless carriages to the technological Chevrolet Volt.

The current GM shed a number of divisions when it went into bankruptcy in 2009 (the notable Pontiac, Hummer and Saturn), but from electric cars to heavy-duty full-size trucks, it provides a complete range of vehicles that meets the needs and expectations of drivers on a truly global scale through 10 brands sprinkled all around the world: Chevrolet, Buick, GMC, Cadillac, Opel, Vauxhall, Holden, Baojun, Wuling, and Jiefang. With such a structure, there are over 20,000 dealers selling vehicles in over 125 countries. To re-establish customer financing after the 2009 bankruptcy, the GM Financial Services divisions acquired: 1) AmeriCredit in 2010; 2) FinanciaLinx, one of the largest independent leasing companies in Canada in 2011; 3) in 2012, Ally Financial's international assets operating in Austria, Belgium, Brazil, Chile, Colombia, France, Germany, Greece, Italy, Mexico, the Netherlands, Peru, Portugal, Spain, Sweden, Switzerland and the United Kingdom. The General Motors Groups is also vertically integrated, owning three automotive components and parts suppliers: AC Delco, DMAX and GM Components Holdings (see Table 7).

**Table 7: General Motors Group**

<b>Divisions</b>	<b>Brands</b>	<b>Activities</b>
<b>Automotive</b>	Cadillac	American luxury vehicles maker, selling worldwide

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	Buick	Premium automobile brand, selling luxury vehicles in China, United States, Canada and Mexico, positioned above GMC and Chevrolet while below the flagship Cadillac
	GMC	American automobiles, commercial vehicles and trucks manufacturer selling worldwide
	Chevrolet	American automobiles, commercial vehicles and truck manufacturer
	Opel	German mass market car manufacturer
	Vauxhall	English passenger cars and light commercial vehicles manufacturer
	Holden	Australian automobiles and engines manufacturer
	Baojun	Chinese youngest automobile brand born from a joint venture between General Motors, SAIC Motor and Wuling Automobile Company Limited.
	Wuling	Chinese automobiles (small and mini-car), truck, buses, engines sold in China and other global markets
	Jienfang	Chinese high-quality light-duty trucks manufacturer
<b>GM Financial Service</b>	AmeriCredit FinanciaLinx Ally Finance	Global providers of auto finance, with operations in the United States, Canada, Europe, China and Latin America.
<b>Automobile Parts</b>	AC Delco	High-quality parts for vehicle systems, as well as off-road, marine and industrial equipment supplier: car batteries, spark plugs, oil filters, air filters, wiper blades, brakes, alternators, radiators, chassis and

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		heating/cooling components.
	DMAX	Joint venture between and operated by General Motors and Isuzu which manufactures diesel engines for trucks.
	GM Components Holdings	Automotive components producer and distributor

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Source: Author's contribute, designed from General Motors Corporate Website.

### *Ford Motor Company*

The Ford Motor Company was founded by Henry Ford and incorporated on June 16, 1903. The company's core business includes designing, manufacturing, and marketing, financing, and servicing Ford cars, trucks, SUVs, and electrified vehicles, as well as Lincoln luxury vehicles. At the same time, Ford provides a wide variety of financial services through the wholly-owned subsidiary Ford Motor Credit Company LLC. Ford vehicles, parts, and accessories are sold through approximately 11,971 distributors and dealers, the substantial majority of which are independently owned. The motor company sells parts and accessories, primarily to dealerships and to authorised parts distributors, while it purchases a wide variety of raw materials (e.g., steel, iron castings, aluminium, palladium, natural gas and polypropylene) from numerous external players around the world.

During its life Ford has activated numerous joint ventures, some of them are still active. AutoAlliance (Thailand) Co., Ltd. ("AAT") is a 50-50 joint venture between Ford and Mazda that owns and operates a manufacturing plant producing Ford and Mazda products for domestic and export sales. Ford has another joint venture with Mazda, the Chang'an Ford Mazda Engine Company, Ltd.: the company produces engines for Ford and Mazda vehicles manufactured in China and its 25% owned by Ford, 25% by Mazda and 50% by Chang'an. The latter is also partner of other two joint ventures with Ford: the first is equally owned and it is called Chang'an Ford

Automobile Corporation, Ltd. that currently operates five assembly plants, an engine plant, and a transmission plant in China where it produces and distributes an expanding variety of Ford passenger vehicle models.

**Table 8: Ford Motor Company**

<b>Divisions</b>	<b>Brands</b>	<b>Activities</b>
<b>Automotive</b>	Ford	Production and sale of mass passenger cars
	Lincoln	Production and sale of luxury vehicles
<b>Financial Services Ford Motor Credit Company</b>	Ford Credit	Providing of financial services worldwide
	Lincoln Automotive Financial Service	Providing of financial services of Lincoln customers
<b>Customer Services</b>	Service	Development and maintenance customer loyalty and satisfaction of Ford and Motorcraft engineered parts and tools
	Quick Lane Tire & Auto Centre	Providing of maintenance and services
	Ford Parts and Motorcraft	Production and sale of engineered parts and tools
	Ford and Lincoln Accessories	Production and sale of original accessories
	Ford Protect and Lincoln Protect Extended Service Plans	Service contracts and maintenance programs
	Ford Fleet/Commercial Vehicles	Rental of fleet-specific vehicles
	Fleet Service Operations	Maintenance of fleet vehicles

Source: Adapted from Ford Motor Company, Annual Report 2015.



The second is JMC a publicly-traded company 32% owned by Ford and 41% by Jiangling Holdings which is in turn a 50-50 joint-venture between Changan and Jiangling Motors Company Group. JMC assembles Ford light-commercial vehicles, heavy duty trucks and engines, and non-Ford vehicles and engines for distribution in China and in other export markets.

In Europe, Ford has two principal joint ventures. One is Getrag Ford Transmissions GmbH a 50/50 joint venture which operates plants in Europe producing transmissions for Europe business unit. Ford Otomotiv Sanayi Anonim Sirketi is a Turkish joint venture among Ford (41% partner), the Koc Group of Turkey (41% partner), and public investors (18%). Owning two plants, a parts distribution depot, a product development centre and a new research and development centre, it is the major supplier to Transit, the producer of Cargo trucks for the Turkish and export markets, the manufacturer of certain engines and transmissions and the sole distributor of Ford vehicles in Turkey.

#### *Renault-Nissan Alliance*

Renault-Nissan B.V. was founded on March 28, 2002 and it is equally owned by Renault and Nissan (Alliance Board). Each company has a direct interest in the results of its partner because Renault holds a 43.4% stake in Nissan, while Nissan owns 15% of the French company shares. In the mid of the 90s there were large disparities between the Japanese manufacturers and at that time Nissan was the automaker that made the biggest mistakes: it closed plants, reduced the workforce and cut costs, but still remained deep in debt. In 1998, it opened ties to foreign companies and, later, in 1999 the Nissan-Renault alliance was announced. Renault acquired a strong position in the Asian market but also in the US, English and Mexican ones thanks to the most efficient Nissan assembly plants. In turn Nissan got open doors to Europe through the distribution network of Renault. The strategy of Renault to lift Nissan was identified based on four drivers: 1) reduction of debt costs; 2) exit from the *keiretsu*; 3) cuts in the distribution network; 4) cut in the product range. The alliance was not the typical fusion but aimed at a mutual respect of cultures and to maintain the two brands separate identities, the collaboration ranged from standardisation to the use of common product

platforms. The Alliance objective is to develop synergies in five key areas: engineering, manufacturing and logistics, purchasing, and human resources. The Alliance Board is the common governance body established in 2009, to accelerate synergies (advice teams in partner companies) and best-practice sharing. The Alliance has benefited from the CMF effect or from the synergies unlocked by a new approach that will be progressively extended across the Renault and Nissan vehicle ranges between 2013 and 2020. It is called the Common Module Family (CMF) and yields economies of scale through the standardisation of parts and module, diversity in design and flexibility in manufacturing. CMF is a three segments modular architecture system that dissects the vehicle into five fundamental zones: the engine compartment, cockpit, front underbody, rear underbody and the vehicle's electronic architecture. The segments are: 1) CMF-A: small, fuel-efficient vehicles particularly in high-growth markets; 2) CMF-B: mid-sized vehicles; 3) CMF-C/D: larger vehicles, including SUVs and crossovers. From an industrial point of view the simplest strategic aspect of the Alliance is the possibility to leverage common platforms for models and to mark the vehicles of both manufacturers with the respective brands, in function of the image of the same in origin markets. For example the B platform of the Nissan Micra, Note and Juke, Renault Clio and Modus or C platform, used for Nissan Qashqai and Renault Megane or again the D platform to Nissan Altima and Maxima in the US, Renault Laguna in Europe, and Samsung SM5 in South Korea. So that the Mexican Nissan Platina is in fact a Renault Clio, while the Renault Kangoo, Trafic and Master are respectively Nissan Kubistar, Primastar and NV400. In the Alliances the research and development of diesel engines are Renault's prerogative, while the gasoline ones especially those of large capacity are Nissan. All Nissan diesel vehicles are powered by Renault, while Nissan engines are on numerous Renault models.

**Table 9: Renault-Nissan Alliance Brands**

<b>Players</b>	<b>Brands</b>	<b>Activities</b>
<b>Renault</b>	Renault	Production and sale of passenger cars and commercial vehicles
	Dacia	Production and sales of low-cost passenger cars
	Samsung Motors	Production and sales of cars, including electric models and crossovers.
<b>Nissan</b> <sup>112</sup>	Nissan	Production and sales of mass and luxury passenger cars, commercial vehicles, outboard motors, forklift trucks
	Datsun	Production and sale of passenger cars targeted at emerging markets
	Infiniti	Production and sale of luxury passenger cars
<b>Alliance</b>	Lada	Production and sale of passenger cars

**Source:** Author's contribute, designed from Renault and Nissan Corporate Websites.

The Renault-Nissan Alliance has entered into numerous strategic partnerships since its creation, as in the case of the long-term collaboration agreement with Daimler AG set in 2010. The aim of the agreement is to increase efficiencies worldwide, joint develop of vehicle platforms and powertrain components, primarily in Europe. The Renault-Nissan Alliance has a 3.1% stake in Daimler and so does Daimler both in Renault both in Nissan. In particular, as reported in the booklet Alliance Facts & Figures 2016, the pact considers: 1) for Renault, Nissan and Daimler the joint development a new direct-injection, turbocharged small gasoline engine family for 2017. The engines feature

<sup>112</sup> At the end of 2016, Nissan will complete the acquisition of 34% of Mitsubishi Motors, assuming its control. It will become the third largest group in the automotive sector, with 10 million vehicles sold annually. Through Zoe, Leaf, Outlander and iMiev it will also become the leading manufacturer of electric vehicles. The current Renault-Nissan Alliance is also the only carmaker to offer a large range of all-electric vehicles, the share of the zero-emission vehicle market reached 63%, including Twizy, Renault's little two-seat city vehicle.

advanced technology with significantly improved fuel efficiency. 2) For Nissan and Daimler a) the production of Mercedes-Benz 4-cylinder gasoline engines at Nissan's new powertrain assembly facility in Decherd, Tennessee, for Infiniti and Mercedes vehicles; b) the supply of the Daimler 2.2-liter turbo diesel engine, coupled with a 7-speed automatic or 6-speed manual gearbox for the Q50, Infiniti's new flagship sedan; c) the cross supply of Mercedes Canter – Nissan Atlas trucks in Japan; d) the development of Q30 and QX30, Infiniti's new compact vehicles using components from Daimler's compact car architecture. The premium cars are built at Nissan's Sunderland plant in the UK. The Q30 was launched in November 2015. The QX30 was launched in 2016; d) the manufacturing of Daimler's advanced 9-speed automatic transmission for Nissan and Infiniti vehicles starting in 2018; e) the co-development and joint production of next-generation, premium and compact vehicles in Aguascalientes, Mexico starting in 2017; f) the co-development of 1-ton pickup trucks sharing architecture with the all-new Nissan NP300 for Mercedes-Benz and Renault. Pickup trucks to be produced in Nissan's Barcelona plant in Spain and Renault's Cordoba plant in Argentina by the end of the decade. 3) For Renault and Daimler: a) the joint development of a new common architecture for Daimler's smart and Renault Twingo successors. Both four-seater vehicles are produced at Renault's plant in Novo Mesto, Slovenia. Cars have been on sale since second half of 2014; b) the development and supply of Citan, a new light commercial vehicle under the Mercedes-Benz brand, based on Renault technology and produced in Renault's plant in Maubeuge, France, since late 2012; c) the supply of ultra-low-consumption diesel and gasoline engines, starting with a 1.5 litre diesel engine, manufactured by Renault in Valladolid (Spain), adapted by Mercedes-Benz as entry powertrain for the Mercedes A and B Class, CLA and GLA models; d) Additionally, Renault supplies Daimler with a 1.6 litre, 4-cylinder diesel engine adapted by Mercedes-Benz as entry powertrain for the Mercedes C-Class. A variant of this engine combined with a Renault transmission is equipped on the new Mercedes-Benz Vito with front-wheel drive; e) New Renault ZOE electric motor to be fitted in EV versions of the smart fortwo and forfour, which was on sale on late 2016. Motor produced at Renault's Cleon plant in France.

In 2012, Renault-Nissan acquired a majority stake in Alliance Rostec Auto BV, a joint venture with Russian Technologies which will control 74.5% of AVTOVAZ, Russia's

leading carmaker, by 2014. The objective was to capture a 40% market share in the country with AVTOVAZ in 2016. In particular, the alliance was to create a new B0 assembly line at Togliatti plant (LADA Largus and XRAY, Nissan Almera, Renault Logan and Sandero are models currently produced on the line) and a pooled purchasing structure for Renault, Nissan and AVTOVAZ to supervise procurement and to lead to substantial savings.

The project underlying the Renault-Nissan and Mitsubishi Motors agreement (2013) would concern the sharing of electric-vehicle technologies and latest-generation platforms, notably for the North American market. Further projects included the joint production and sales of small cars and three-box sedans.

Last, the Renault-Nissan Alliance has recently announced its entry in China with the main state-owned enterprise Dongfeng Motor Corporation, already a Nissan partner. The agreement set up the Dongfeng Renault Automotive Company (DRAC) a 50-50 joint company to produce vehicles on site.

#### *Fiat-Chrysler Automobiles*

Fiat Chrysler Automobiles (FCA), the seventh car manufacturer in the world, designs, develops, manufactures and markets around the world cars, commercial vehicles, components and production systems. FCA operates through companies located in 40 countries and has commercial relationships with customers in over 150 countries. In the first quarter of 2014 Fiat S.p.A. purchased the remaining shares in the capital of Chrysler, so reaching a 100% share. The integration process began in 2009 with an agreement which sanctioned the entry of the Fiat group in the company's capital as a result of the concession and sharing of certain engines and platforms technologies. The agreement also provided for the possibility to go up to 35% of the capital to the fulfilment of certain requirements in terms of technological development; more, there was the option to go up to 51% of the capital after the repayment of public funds obtained by the American company. In July 2011, after reaching the targets and repaying the debt, Fiat came to control the majority of shares with 53.5%. Since 2012

the share have risen further to 58.5%. Since 2011 the company has been consolidated in full in the financial statements of Fiat.

FCA Italy S.p.A., Chrysler L.L.C. (ex-Chrysler Group), Maserati, manufacturers of components Magneti Marelli, Teksid and Comau 100% belong to the group. Through subsidiaries, joint ventures and agreements with specialised financial operators, the Group also operates in activities related to communication and financing, leasing and rental services. In 2014, the spin-off of Ferrari NV was announced, which as of January 4, 2016 was separated from the FCA group to be directly controlled by Exor, already the majority shareholder of FCA. As shown in the table below, the Group operates in the automotive market with Abarth, Alfa Romeo, Chrysler, Dodge, Fiat, Fiat Professional, Jeep, Lancia, Maserati and Ram, plus SRT, the sports division dedicated to high-performance vehicles, and Mopar, the brand that offers after-sales services and spare parts.

**Table 10: Fiat Chrysler Automobiles Structure**

<b>Subsidiary</b>	<b>Brands</b>	<b>Activities</b>
<b>FCA Italy S.p.A.</b>	FIAT	Manufacture and sale of passenger cars. Low-consumption and low-emissions engines design.
	Alfa Romeo	Production and sale of sporty and luxury passenger cars.
	Lancia	Manufacture and sale of passenger cars. The brand is positioned above the Fiat brand.
	Fiat Professional	Manufacture and sale of light commercial vehicles.
	Abarth	Manufacture and sale of racing cars.
<b>FCA US L.L.C.</b>	Ram Trucks	Manufacture and sale of pickup
	Dodge	Manufacture and sale of cars, trucks, SUVs, vans/minivans. The brand is positioned below the Chrysler brand.

	Chrysler	Production and sale of mainstream vehicles.
	Jeep	Production and sale of sport utility vehicles
	SRT	Manufacture and sale of racing cars
	Mopar	Manufacture and sales of spare parts
<b>Maserati</b>	Maserati	Production and sale of luxury passenger cars.
<b>Magneti Marelli</b>	Magneti Marelli	Design and production of high-technology systems and components for passenger cars.
<b>Teksid</b>	Teksid	Production of cast iron and aluminum. Teksid Iron produces cast iron parts of suspensions and other components for cars and industrial vehicles. Teksid Aluminum produces aluminum parts such as cylinder heads and crankcases.
<b>Comau</b>	Comau	Manufacture of production systems ranging from metal cutting to robotics
<b>Other activities</b>	e.g. FCA Bank	Communication and Services

Source: Author's contribute, designed from FCA Annual Report 2015.

### *Honda Motor Co.*

Honda began as a manufacturer of pistons in 1937 and soon became one of the suppliers of Toyota. In 1948, Honda had the idea of mounting a simple small capacity engine on a bicycle frame, recognising the need for a new motorisation and creating an easy and cheap means of transport.

Since the Sixties the company has gradually introduced many other models of mopeds and motorcycles and conquered other markets through a continuous diversification: Honda began to produce cars, focusing initially only on the Japanese domestic market, in a second time on Formula 1 racing and then on US and European markets. Honda

was the first Japanese automobile manufacturer to release a dedicated luxury brand: Acura was launched in 1986 and it currently serves mainly the North American market. Aside from their core business cars and motorcycles, Honda also manufactures garden equipment, marine engines, personal watercraft, power generators and other products. In 2000, Honda released ASIMO robot, since it has been involved with intelligence/artificial robotics research during the last 30 years.

Honda has four reportable segments: motorcycle business, automobile business, financial services business and power product and other businesses

**Table 11: Honda Motor Co Businesses**

<b>Divisions</b>	<b>Products</b>	<b>Activities</b>
<b>Motorcycle Business</b>	Motorcycles, all-terrain vehicles (ATVs) and relevant parts	Research and development Manufacturing Sales and related services
<b>Automobile Business</b>	Automobiles and relevant parts	Research and development Manufacturing Sales and related services
<b>Financial Services Business</b>	Financial services	Retail loan and lease related to Honda products
<b>Power Product and Other Businesses</b>	Power products and relevant parts, and others	Research and development Manufacturing Sales and related services

**Source: Honda Motor Co. Condensed Consolidated Interim Financial Statements.**

### *Suzuki*

It started business in 1909 as Suzuki Loom Works and then entered the motor-vehicle field with the launch a 2-cycle motorized bicycle. Since its foundation, Suzuki has steadily grown and expanded and it is constantly pursuing opportunities and areas of cooperation with other manufacturers where effective use of companies' business resources and mutual benefit can be expected. Suzuki manufactures and sells a full range of motorcycles, automobiles, outboard motors and related products, such as motorised wheelchairs and industrial equipment. Automobiles are manufactured by the



Company as well as overseas, by subsidiaries, Magyar Suzuki Corporation Ltd., Maruti Suzuki India Limited and by an affiliate, Chongqing Chang'an Suzuki Automobile Co., Ltd. and others. Some parts are manufactured by Suzuki Auto Parts Mfg. Co., Ltd. and other manufacturers, and they are purchased by the Company. The marketing of automobiles is carried out in the domestic market by a subsidiary, Suzuki Motor Sales Kinki Inc. and other marketing companies throughout the market, and in overseas markets, by a subsidiary (Suzuki Deutschland GmbH). The business of logistics services is conducted by a subsidiary, Suzuki Transportation & Packing Co., Ltd. (See Table 12)

**Table 12: Suzuki Group in Japan**

<b>Divisions</b>	<b>Subsidiaries</b>
<b>Manufacturing companies</b>	Suzuki Auto Parts Mfg. Co., Ltd. Snic Co., Ltd. Suzuki Akita Auto Parts Mfg. Co., Ltd. Suzuki Toyama Auto Parts Mfg Co., Ltd.
<b>Non-manufacturing companies</b>	Suzuki Transportation & Packing Co., Ltd. Suzuki Business Co., Ltd. Suzuki Engineering Co., Ltd. Suzuki Support Co., Ltd. Suzuki Finance Co., Ltd. Suzuki Consultant Co., Ltd.
<b>Sales companies</b>	54 directly managed domestic distribution companies 44 directly managed overseas distribution companies Suzuki Marine Co., Ltd

**Source: Suzuki Motor Company, Annual Report 2015.**

The principal equity alliance was established with General Motors. In 1981, Suzuki entered business tie-ups with the American GM. In particular, GM purchased a 5.3% stake in Suzuki. Later in 1998, Suzuki and General Motors Corporation agreed on joint development of compact vehicles in Europe and to strengthen the business tie-up and form a strategic alliance. At the same time, General Motors Corporation increased its equity stake in Suzuki to 10%. Only two years later, this stake was doubled up to 20%

and Suzuki started supplying the small Chevrolet MW to General Motors Corporation for the Japanese domestic market on an OEM basis. In 2004, Suzuki and General Motors Corporation agreed to produce GM's global engines. In 2006, General Motors Corporation changed its equity stake in Suzuki from 20% to 3%.

□ *In 2009, Suzuki and Volkswagen signed an agreement through which Suzuki would have shared new technologies investment costs, while Volkswagen would have developed competencies in small car production and design, but would have also gained position in the Indian market. Since the beginning, the alliance didn't work at the top, because Suzuki aimed to remain independent. In 2015, after four years of legal debates, the alliance was dissolved by the International Court of London, which established that Volkswagen must re-sell the 19.9% of Suzuki shares. Even if the decision of the arbitration court paved the way for a quick divorce, Suzuki is still facing strategic problems. Because it is much smaller than the other Japanese rivals (Toyota, Honda and Nissan), the company has to search for a new partner (it may be Fiat Chrysler, the company with which Suzuki signed an agreement to purchase diesel engine, failing alliances with Volkswagen) to cope with hyper-competition.*

Other minor equity agreements have been reached with Isuzu, Daewoo and Fuji Heavy Industries. As in the case of GM, the tie-up with Isuzu also started in 1981 but was dissolved in 1994. The Production of Suzuki cars in Korea through a technical tie-up with Daewoo Shipbuilding and Heavy Machinery Ltd started in 1991. In 1999 Suzuki entered a business tie-up with Japanese automaker Fuji Heavy Industries Ltd.

### *PSA Group*

Peugeot Société Anonyme was founded in 1966. Ten years later, the merger of Citroën S.A. and Peugeot S.A. gave rise to the PSA Peugeot Citroën. The Group harnesses its solid results to buy out Chrysler Europe in 1978, making it Europe's number-one group and world number-four. The Group's operations are organised

around three main business segments as shown in Table 12: 1) the Automotive Division, covering the design, manufacture and sale of passenger cars and light commercial vehicles; 2) the Automotive Equipment Division, corresponding to the Faurecia Group; 3) the Finance Division, corresponding to the Banque PSA Finance Group (BPF). To address an effective balance of power, the Group has a two-tier management structure comprising a Managing Board, responsible for strategic and operational management, and a Supervisory Board, responsible for oversight and control. The Automotive Division was reorganised in late 1998 to align legal structures with the new functional organisation: Automobiles Peugeot and Automobiles Citroën transferred all their motor vehicle development and manufacturing assets to Peugeot Citroën Automobiles. The Group is vertically integrated; in fact, it owns Faurecia, a Tier-1 supplier born in 1998 from a friendly merger between equipment manufacturer Bertrand Faure and Ecia, a company set up in 1987 by the merger of Aciers et Outillages and Cycles Peugeot. At the end of 2012, PSA decided to sell 75% of capital of the logistics specialist GEFCO S.A. to JSC Russian Railways, while in March 2015 the Group acquired Mister Auto, an e-commerce leader for spare parts for all automotive brands on the European market. Banque PSA Finance, the ex-PSA Finance Holding, provides financing for Peugeot, Citroën and DS brands. In July 2014, it signed an agreement on European level with Santander Consumer Finance (SCF). The PSA Group has subsidiaries jointly-owned with other car manufacturers, such as Dongfeng Peugeot Citroën Automobiles (50% Peugeot Citroën Automobiles – 50% Dongfeng Motors); Toyota Peugeot Citroën Automobiles (50% Peugeot Citroën Automobiles 50% Toyota Motor Corporation); Sevelsud Società Europea Veicoli Leggeri (50% Peugeot Citroën Automobiles - 50% Fiat); PCMA Rus (70% Peugeot Citroën Automobiles - 30% Mitsubishi Motors Company);CAPSA, Chang'an PSA Auto Company Ltd (50% Peugeot Citroën Automobiles - 50% Chang'an).

Table 13: PSA Group

Divisions	Subsidiary/Brands	Activities
<b>Automotive</b>	Peugeot Citroën Automobiles	Design and production. Manufacturing companies and entities jointly-owned with other car manufacturers
	Automobiles Peugeot	Trade
	Automobiles Citroën DS	Subsidiaries and entities in the dealership network (passenger cars and light commercial vehicles) Subsidiaries and entities in the dealership network for replacement parts
<b>Automotive equipment</b>	Faurecia	Interior Systems, Automotive Seating, Automotive Exteriors and Emissions Control Technologies
<b>Finance</b>	Banque PSA Finance	Retail financing to customers of the three brands and wholesale financing to their dealer networks

Source: PSA, Registration Document 2015.

## 4.2 Other Equity and Non-Equity Strategic Alliances: some Examples

Global and over-supplied markets require companies to deal with hyper-competition based on competitive management of space and time. To address these challenges, companies must organise in networks, which are not only the result of equity competitive-strategic alliances but also the result of many cooperation agreements. In this case, the automotive industry offers several examples of non-equity alliances activated both horizontally and vertically, not only with the traditional players of the sector, but also with partners, new players belonging to different industries (in some case distant from the automotive business), sign of an inevitable technological

convergence. Here are some illustrative examples that reflect what has been analysed until now.

□ *One of the most famous production agreements is represented by Toyota Peugeot Citroen Automobile Czech, s.r.o., established in 2002. The production plant, using common platforms started to manufacture the 'Toyota Aygo' along with 'Peugeot 107' and 'Citroen C1' through a joint venture with PSA Peugeot Citroen in the Czech Republic in 2005 (See Toyota and PSA Corporate Websites).*

□ *On the subject of new mobility ecosystems and connected car, Seat, Samsung and SAP announced a close collaboration between research and development teams. Samsung aims to bridge the gap between consumer electronics and the automotive industry, providing the most advanced mobile technology at the disposal of the driving experience, while the presence of Sap strengthens the partnership on the side of the application and internet of things. An example of focus area would be on back-end parking systems: taking advantage of the standard integration through Sap Vehicles Network (SVN) and cloud platform, Seat can access global data for the on-street parking, that the user can pay using Samsung pay % (See SEAT-VW, Samsung and Sap Corporate Websites).*

□ *In 2010, Tesla and Toyota announced their intention to jointly develop electric vehicles, parts, and production system and engineering support using Tesla powertrain technology and Toyota off-the-shelf parts. The plan included that: 1) Tesla would purchase NUMMI plant from Toyota; 2) Toyota would invest \$50 million in Tesla; 3) the plant would build a jointly developed Tesla-Toyota vehicle using Tesla powertrain and battery components, matched with components sourced from an existing Toyota platform (See Tesla Corporate Website).*

□ *One of the most important trend innovation in automotive industry is connectivity. Salesforce.com and Toyota form strategic Alliance to build 'Toyota Friend' the social network for Toyota Customers and Their Cars.*

*Salesforce Chatter, a private social network used by businesses, and will be offered, first in Japan, initially with Toyota's electric vehicles (EV) and plug-in hybrid vehicles (PHV) due in 2012. Toyota Friend will connect Toyota customers with their cars, their dealership, and with Toyota; as it is a private social network, a customer could choose to extend communication to family, friends, and others through Twitter and Facebook. Toyota Friend will provide a variety of product and service information as well as essential maintenance tips, creating a rich car ownership experience. For example, if an EV or PHV is running low on battery power, Toyota Friend would notify the driver to re-charge in the form of a "tweet"-like alert. The service will also be accessible through smart phones, tablet PCs, and other advanced mobile devices (See Toyota Corporate Website).*

□ *In 2009 BMW and SGL Group signed an agreement for the exclusive supply of carbon fiber materials to the BMW Group, so that it would be the first automotive manufacturer to use carbon fiber reinforced plastic (CFRP) in series production of BMW i models. (See BMW and SGL Group Corporate Websites).*

## **5. Automotive Industry Strategies: Innovation and Cost Competitive Management**

A company creates competitive value if the profitability exceeds that of the industry by allowing cost reduction, a premium price introduction or a combination of both. It can be affirmed that a firm creates value through four main drivers:

- 1) efficiency (economies of scale: flexible technologies; just-in-time; reduction in defective products and products easy to produce);
- 2) quality in terms of responding to the needs of the buyer both from the product point of view on the principle of value for money, and in terms of increased productivity, cost reduction or price increase according to Toyota Total Quality Management;

- 3) innovation and imitation processes of both OEMs and suppliers. In fact, innovation in the auto industry is very important, as manufacturers have to differentiate their models from those of the competitors, because the triad market is primarily a replacement market and customers should be encouraged to buy again with innovations. This is more important for suppliers, as in recent years they have increasingly replaced manufacturers in research and development, taking on a role of specialised players;
- 4) responsiveness to customer needs through customisation or adaptation of the supply to the demand. Improve efficiency, develop new products and therefore improve the other elements on which the competitive advantage is based, means responding to customer needs.

To offer a variety of products and to keep production capacity high, automotive industry needs production flexibility (technologies of plants and product design). The increase in product variety also leads to an increase in parts and components as well as an increase in fixed costs that are distributed on a bigger number of models: the solution is to develop common parts that enlarge production flexibility and diminish the complexity of product design. Modularisation is the answer to these needs or it divides the system in smaller parts, the modules. The module is a product that facilitates the manufacture of a more complex product through a limited range of interchangeable components. Firms adopt modularisation because the segmentation is more and more refined, resulting in proliferation of brands and models to cover as much of the market. The inevitable consequences are therefore also those of a proliferation of the parts and components serving to produce vehicles, and the increase in those costs. For the OEMs, modularisation has meant the reduction of components' suppliers and the rethinking of their relationships: for example, some players, such as Bosch, tend to a global expansion of their businesses investing in design and strategic use of modular components, thus marking the beginning of a new phase in the vehicle assembly.

But if the OEMs are reducing costs exploiting modularisation and common platforms, what about innovation? There are significant differences in cost, quality, and new product development across automotive manufacturers that are driven primarily by the extent to which they outsource and the nature of their relationships. The Detroit Three

have caught up with Japanese OEMs, and the mass market is catching up with luxury<sup>113</sup>. Oversupplied markets require OEMs to find a balance between the advantages obtained in differentiating products on one hand and the need to standardise part of the whole product portfolio on the other. The use of the same modules in different finished products can overcome this problem and keep low the internal complexity of the vehicle. It also allows for the best use of the production capacity on which it depends much of the manufacturers' profitability and for a wisest management of time (time-based competition). The impact is also about the life cycle of the products due to hyper-competition effect and to offer variety: manufacturers constantly offer new models resulting in shorter product cycles and modularisation allows redesigning only individual modules and consequently accelerating the design a whole new vehicle by shortening times significantly. This shifts the power towards the supplier, the manufacturer is even more dependent from Tier-1 (system integrators and module suppliers) as part of a competitive outsourcing strategy oriented to modularisation. As stated in the previous chapter, the innovative activity in technology-intensive sectors, such as automotive, plays an important role, as the high-tech firms not only invest more in research and development, but the impact of such activities productivity is higher than that found in sectors with lower technological intensity. By studying the balance sheet of the major automotive player, it appears that the trend in spending on R&D, as a percentage of revenues, is an indicator that oscillates between 3 and 6% of sales, a share that confirms that auto industry is one of those more oriented to innovation and research<sup>114</sup>. If the knowledge networks that spread within the automotive supply chain reflect the features highlighted above, the innovation that develops in it also presents some peculiarities:

- *The global dimension of innovation.* Large manufacturers groups use resources spread internationally. In particular, they tend to concentrate production in a limited number of global platforms; this means that if a car is built to be sold in a given market it will ensure the characteristics suitable to satisfy the tastes of that specific customer, but it will also incorporate technology and components used to produce other cars of the same platform.

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<sup>113</sup> See PriceWaterhouse Cooper, cit.

<sup>114</sup> Cf. Unioncamere, 2014.

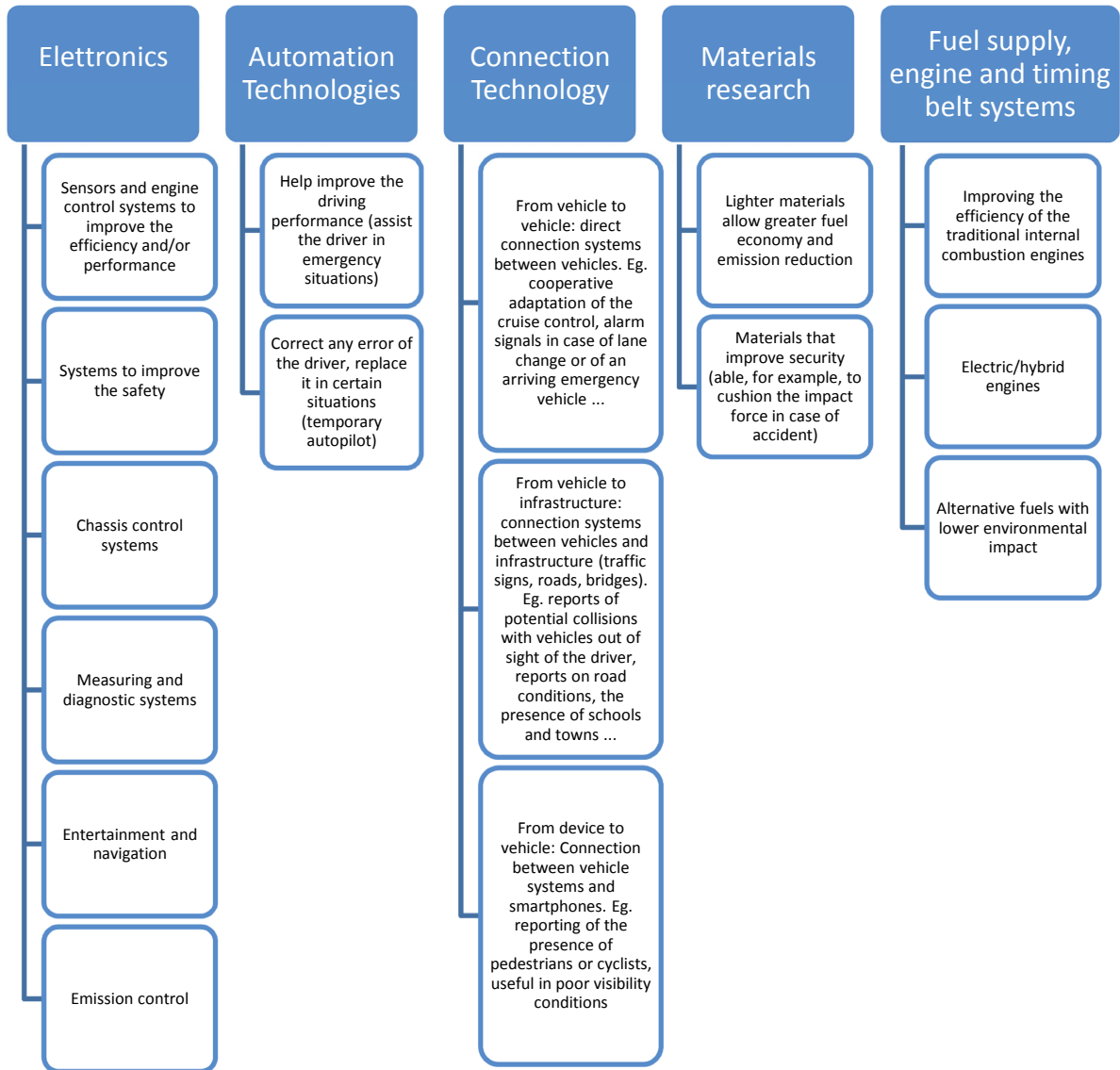


- *The development of the innovative process.* The innovation in the automotive sector has an increasingly central role in recent decades. On the one hand the introduction into the production process of increasingly sophisticated electronic components has expanded the technological areas involved in the production; on the other hand, the greater competitive pressure has forced automakers to speed up the product development process, improving its quality, but at the same time reducing costs. Large manufacturers, therefore, use laboratories and test centres around the world to develop and validate new products. But innovation within large automakers spreads even outside of the structures specifically dedicated to research, through strategies that aim to bring out new ideas (periodic meetings with employees, meetings between various levels of management and technical staff, etc.).
- *Relationships with suppliers.* Along the automotive industry a significant contribution in terms of technology and innovation is offered by components suppliers, which often develop independently high-tech products entering the production process.
- *The collaborations for research.* Applied research, carried out by the different actors of the automotive industry, is often preceded by a research activity shared by enterprises. Among these, for example, agreements have been signed to jointly develop a technology base that each signatory organisation may then enhance and customise into their own products. As well as in a collaborative way between firms, basic research can also be carried out by independent institutions (universities and specialised research centres) which allow companies to share the most innovative core technologies.

The following schematic Figure 11 outlines the most directly related to automotive research fields.

It is evident that the choice of privilege one rather than another flows from the consideration of multiple factors (evaluation of the costs, the market demands, environmental regulations, etc.).

Figure 11: Leading R&D Areas in Automotive Industry



Source: Unioncamere, 2014, p.174. Author's translation.

As innovative processes, spillover effects and knowledge network between companies are fundamental for the individual firm, which gets gains in competitiveness, and for the economic system, which is placed on a more solid growth path in the long run. Their measurement is arduous. This difficulty derives from the complexity of the phenomenon that it is like to be measured on the basis of indicators that ensure comparability at temporal and global level.

## 6. Automotive Industry new Challenges: they all say green!

The basis of a sustainable economy is a society with a one-planet footprint, where all energy is derived from resources that naturally replenished: this is called green economy<sup>115</sup>. From the economic boom to date, the number of cars has grown exponentially, reaching approximately 2 billion units (see Figure 9). Cars which have become synonymous with status and, above all, freedom, has brought increased traffic (congested cities) and air pollution (carbon dioxide emissions). OEMs, suppliers, governments, consumers and oil companies are all called to work on the future of auto industry, of the world and of our health (see Chapter 1, p.14 the global capitalism basic drivers). In particular, the OEMs are called to intervene, in the first place, on the vehicle in terms of aerodynamics, rolling resistance, innovations in materials (less mass, less gas as in the case of aluminium or carbon fibre) and engines. The main interventions are focused on engines; both in terms of internal combustion engine (ICE) and of electric vehicles. Internal combustion engines won't have rivals at least until 2030 or even up to 2050; the efforts of OEMs have been numerous, especially as regards the cylinder reduction (e.g., TwinAir Fiat), the transmission capacity and the introduction of technologies such as EPS, start-stop systems and regenerative breaks for power management (the aim is to achieve fuel economies). The penetration of electric vehicles there is, it there will be, but it will be slow. There are four types of electric vehicles, whose characteristics and the relative advantages and disadvantages are summarised in the table below (see Table 14).

**Table 14: Electric Vehicles Characteristics, Advantages and Disadvantages**

Type	Characteristics	Advantages	Disadvantages
<b>HEV Hybrid-Electric Vehicles</b>	Vehicle driven by an internal combustion engine (primary source, gasoline or diesel) and an electric one (short distances or aid to the engine ICE)	Higher fuel economy; Energy recharge when braking; Allowed urban circulation in zero emission areas; Higher efficiency to combustion engine.	Higher weight; Higher cost.

<sup>115</sup> See Lambin Jean-Jacques, 2014b, cit.

<b>BEV Battery Electric Vehicles</b>	Vehicle with electric engine and reserve of energy in a battery. Energy is transferred to the vehicle by connecting to the power grid or by battery replacement	Zero gas emissions and zero rumours; Reduction of energy consumption and pollution; Higher energy efficiency.	High cost of batteries
<b>PHEV Plug-in Hybrid Electric Vehicles</b>	Hybrid electric vehicle with a larger usable energy battery, recharged like a plug-in. It therefore has an internal combustion engine or a fuel cell (gasoline, diesel, CNG, hydrogen, other fuels) and an energy storage device.	Higher autonomy than a traditional car	Technically is not a zero emission vehicle; High cost of batteries
<b>FCV Fuel Cells Vehicles</b>	Hydrogen vehicle	Hydrogen as efficient combustible; More efficient than an ICE vehicle; Water vapour and heat emissions; Less parts and rumours, more reliability; Mobile electricity; Higher autonomy than a PHEV or HEV; Design flexibility.	No mass production due to higher costs and lack of refuelling infrastructures

Source: Author's contribute.

Another way to reduce atmospheric emissions is low-carbon, or combustible sources other than petroleum that, if placed on the market in large scale, would contribute to

provide low-emission mobility. The supremacy of petroleum products will be difficult to break down: they are liquid at atmospheric pressure and temperature, easy to store and provide adequate autonomy to the vehicle (high energy intensity per unit volume). The same considerations must be made for methanol and ethanol, the alcohol fuels derived from biomass, which, however, unlike oil products, in ideal conditions can compensate for the gas emissions needed to produce them. In contrast, the gaseous fuels, such as methane (compressed natural gas CNG and liquid natural gas LNC) and hydrogen (CH<sub>2</sub> and LH<sub>2</sub>), have a low energy density and they need to be stored in larger volumes to produce the same amount of oil energy; they also take longer refuelling (refuelling would be reduced if the product was liquefied, but in this case ad hoc tanks would serve, adding costs to vehicle) and impose limits on their use of roads and parking (risk of explosion). Second, the OEMs are required to take action towards the consumer to motivate him, especially in more advanced countries where the battle against the reduction of energy consumption and emissions has been fought for some time. From the 2008 crisis, alternative methods such as car sharing have had limited success, while the ownership and the car use are still growing (increase in home-work distances), with preference for larger and more powerful cars and inevitable increase in consumption (although it works for greener engines and fuels, in the triad there is a resistance to the use of alternative fuels and an attitude of 'wait and see' regarding the turbulence in oil prices: after the first car that is usually small, people in the Triad tend to buy larger and heavier car, often used by one person on board). In essence, the fuel economy asks to reinvent cars<sup>116</sup> using the design principles as for the combination of the electric-drive and the connected-drive technologies (electric propulsion and guidance related to vehicles and infrastructure). In particular, in recent years, we have been talking about the Internet Mobility, or of a network made up of cars with an information system that allows vehicles belonging to the network to collect and process large volumes of data for a more comfortable driving experience (route and traffic management, dynamic price of resources as charging columns, tolls, parking, transmission of information on the external environment directly on the dashboard. In an urban optic, this results in the creation of charging infrastructures and the use of clean and renewable energy).

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<sup>116</sup> Pellicelli Giorgio, 2014; MIT researches.

## 7. Emerging Imperatives and Issues

In a digital economy, the balance of power between the main market players has deeply changed, giving birth to a 'bottom-up' relationships system dominated or initiated by consumers. Internet has two unique characteristics: (a) the ability to distribute digital products at close to zero costs to a large number of customers and (b) the ability to network, i.e. to connect large numbers of people<sup>117</sup>. According to Sergio Marchionne, the need for consolidation in the auto industry is outlined, with integrations that can release all the potential of the companies which are protagonists. Dialogue, discussion and the alliance with the giants of the technology industry (Google, but also Apple) go in this direction.

**OEM priorities.** Given the increase in electronic content, OEMs need to collaborate with suppliers and experts outside the traditional auto industry. Accomplishing this will require changes in the way OEMs function. For example, they may need to use venture funds to nurture and support companies that can innovate technologically, and provide access for more non-traditional suppliers, including hardware and software companies. One promising and efficient path would be to move toward more standardised interfaces, systems, and modules for telematics and infotainment.

OEMs should also prioritise R&D and engineering projects to focus on those that offer the best value and differentiation and to address new safety and environmental regulations in the most cost-effective way. To address the new rules, they should also work closely with suppliers to determine whether the OEM or the vendor, or a combination of the two, is best equipped to develop the technology and innovative solutions needed to meet the regulations. Moreover, OEMs must improve their skills in gathering and analysing consumer data to serve their customers better and improve brand loyalty. The move to modular platforms will require OEMs to work closely with suppliers to realise the cost savings and manufacturing improvements that they hope to gain by increasing scale.

**Supplier priorities.** Suppliers should partner with innovative non-traditional automotive electronics and infotainment suppliers to utilise their speed-to-market and

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<sup>117</sup> See Lambin Jean-Jacques, 2014b, cit.

(sometimes) higher scale. They should also rationalise their portfolios and strive to be among the top two or three suppliers for each of their 'core' products. OEMs will be looking to their top suppliers to co-invest in new global platforms, and suppliers should carefully evaluate the opportunities in expanding their manufacturing footprint as their primary OEMs move toward single worldwide architectures. Early collaboration will reap long-term dividends.

Dealer priorities. Dealers need to invest in data management and customer care technologies that will make the buying transaction faster, more efficient, less pressured, and more pleasing to consumers. They must also improve their online capabilities, like all other retailers, so that the distinction between bricks-and-mortar and the Web diminish greatly. In so doing, they must foster a continuous connection with customers through vehicle life-cycle software and apps to drive ongoing service and parts sales<sup>118</sup>.

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<sup>118</sup> See PriceWaterHouse, 2015 and 2016.

## **THE CASE OF DECLINING EUROPE**

### **1. European Automotive Industry History**

This section will present a brief history of European industry, differentiating between Continental Europe and British industry as the latter does no longer exist. The history of the industry in Europe is of pioneering and rapid decline. Daimler and Benz, the pioneers of the automotive industry, launched the short European supremacy in the construction of cars, especially those racing that attracted the Americans, people enthusiasts of speed. During the two World Wars, also in Europe, the production of vehicles for civilian use ceased in favour of the production of weapons, ammunition, war vehicles etc. Mass production started in Europe at the end of World War I; mass production didn't take off early in the Century when our Continent was still the leader in the design and construction of luxury and racing cars, but it allowed the opening of the market even to the middle class. The American fashion of closed car represented the engine for the emergence of a unique personality among European car manufacturers, who preferred to internally produce the components needed to assemble the cars rather than buying them outside. Even the American multinationals invested in Europe, Ford by opening its own production facilities, while GM through acquisitions, such as that of Opel born as a manufacturer of sewing machines. But European markets were isolated and protected by tariffs that restricted the import and export procedures; they were distinct markets with dozens of manufacturers operating in a single country. Every European country had long maintained its own identity. Only after World War II, the fragmentation of the market gave way to the concentration in a few manufacturers (e.g. in Great Britain five of the six major manufacturers came together in one corporation), contributing positively to the development: Volkswagen hold about a third of the German market, Peugeot and Renault almost the same in France, while Fiat more than 50% of the Italian one. In the '70s, the end of the Bretton Woods agreements (stop to equal exchange rate and currency fluctuations that forced companies to open manufacturing facilities in the United States), the oil shock (transition in demand for cars in favour of saving gas models of Japanese players and of Volkswagen, defining an empty offering in the United States, in particular) and the progresses proper of Japanese



continuous improvement (technological innovation) indelibly marked the history of European industry by committing firms to find a rapid response strategy to the battle of market shares.

## **1.1 The Continental Europe**

At the end of World War II, the European car industry started to concentrate, aided by thirty years of protectionism: the industry appeared fragmented with many isolated markets but each one with a strong identity. The history of continental Europe goes through the great German, French and Italian brand names.

### *Germany*

The history of Germany is marked by Volkswagen, Audi, BMW and Mercedes-Benz. The German giant Volkswagen, wanted by the Nazi trade union in 1937, owes its fortune to the popular models, especially those launched from the 60s onwards. In fact, the OEM of Wolfsburg, born as a manufacturer of luxury cars was transformed by the Fuhrer in mass car producer by converting plants for military use. At the end of the Second War, Europe was recovering and the simplicity, reliability and low costs of Beetle launched the German company. In the '70s, the winning and still existing Polo and Golf models peeped out on the market. Timing was never more perfect, the world and especially post-war Germany were enjoying the economic boom. Volkswagen consolidated its position by expanding its brand portfolio through the purchase of modern Audi (1964), the Spanish Seat (1990), Lamborghini (1998), Bentley (1998), the right to use the brand Bugatti, Skoda (1999) and Porsche (2002). The history of Volkswagen is a story of vision, it was among the first European manufacturers to open production in East Germany after the fall of the Berlin Wall in 1989, to enable joint ventures in China, to open up to new geographical markets without forgetting to grow its reputation in terms of innovation and models that well meet the needs of the market. The history of innovation that made famous Audi lasted a very short time, about 11 years: the founder engineer August Horch of Audi (1909) Latinised version of "hear", left the company in 1920 to work with the Ministry of Economy. In 1928, the Danish manufacturer of motorcycles DKW bought Audi, but the models launched on the market lacked of originality and Audi started to navigate in troubled waters. In 1930,

Audi with DKW, Horch (first company created by the founder of Audi in 1901) and Wanderer formed Auto Union in order to cover from low to prestige market segments: the strategy of combining the resources of the four manufacturers did not work and Auto Union has been purchased by Daimler Benz first and by the giant Volkswagen then. Audi regained premium brand and innovative manufacturer reputation thanks to the new property (especially with Piech as CEO, strong sponsor and promoter of the independence of Audi from Volkswagen) and the launch of the spectacular A4; Volkswagen decided to give Audi the image of a brand positioned above the other Volkswagen Group's product lines, to root innovation in the organisational culture of the new Audi and to activate a premium marketing that could leverage A4 and TT. The latter won (diesel versions) in the most important rally races, thus giving a new allure of innovation and attention to new technologies of Audi brand. Mercedes-Benz, instead, originated from the first petrol engine designed by Benz (1886) and the inventions of Daimler and Maybach: it was founded in 1924, during the years of the great hyperinflation that devastated the German economy, by the merger of Daimler and Benz innovator and protagonists of motor racing financed by Deutsche Bank, which became the largest shareholder. The lifeline of Mercedes-Benz depended on Hitler, who often used a Mercedes-Benz car and downsized the German car industry structure, that had to deal with big numbers produced by the Americans in the German factories. In 1929, there were only 17 German companies producing 34 types of cars. At the top of the ranking there was exactly Mercedes-Benz. The '30s were a very creative period for Mercedes-Benz, interrupted by World War II, from which Mercedes-Benz came out winner once again: 1) its competitors were in Soviet hands and moved there the assembly lines; 2) tough competition with Maserati and Alfa Romeo took it to establish itself as a specialist in high-priced luxury cars and heavy wagons manufacturer. The wheel turned again to the part of Mercedes-Benz (1.the bankruptcy of a major competitor in the car market; 2. the withdrawal of competitors in the heavy vehicle market because of numbers that did not allow profits; 3. stable shareholder base that opened to a period of intensive development -Deutsche Bank, Mercedes Holding, Kuwait Investment Company, the Flicks and independent shareholders) until 1995, when it declared the first fiscal loss due to an entry strategy into new markets with too much high goals and with a more than wrong timing. The numbers made by

Volkswagen induced Mercedes-Benz to the merger with the American Chrysler and to purchase a participation in Mitsubishi to enter the Japanese market. Because of the high stocks held by Chrysler and the numbers of BMW and other Mercedes-Benz competitors, the merger with Chrysler was a failure. In 2012, Mercedes-Benz also lost the second position as a premium brand, surpassed by Audi which was supported by the innovative push of Volkswagen. The propeller Bavarian brand, BMW, was the first premium brand in the ranking ahead of Audi, Mercedes-Benz, Lexus and Infiniti. Founded in 1917 as a manufacturer of aircraft engines in Munich, BMW also suffered twice the stop of the production of motorcycles and cars in favour of a return to the production of aircraft engines in the period of the two World Wars. At the end of the Second World War, BMW resumed the luxury car production with which it built its reputation of high-performance engineering, but its cars cost much more than those of Mercedes-Benz. In the 60's, the Quandt family lifted BMW up again from bankruptcy, placing von Kuenheim as new CEO, who led the brand to be the protagonist on the world stage, technological innovation leader and with a strong financial position aided by a winning range of cars. In 1994, BMW acquired Rover and the whole package of the MINI, MG and Land Rover brand, but the big losses of Rover put in serious difficulty BMW which decided to sell its shares with the exception of those held in the MINI. MINI was reinvented, Land Rover was sold to Ford and, in 2000, the entire Rover Group was sold again to a group of British financiers for £10. In 2002, BMW completed the acquisition of Rolls Royce. The history of BMW states that premium brands and volume brands cannot be together, but behind the success of a premium brand there is the continuity of design.

### *France*

Renault, Peugeot and Citroën brands made the history of the French automotive industry; the latter two are now merged into a single group (PSA Group). The history of Renault deviates little from those told so far. Founded in 1899 by Louis Renault and his brothers, it began its business in car racing and later dedicated to war production during the two World Wars. Just after the liberation by the Allies, Louis Renault was accused of having helped the Germans during the occupation and was imprisoned: as a result of the imprisonment of the founder, Renault became property of the French government

until 1994, when part of shareholdings was sold to private investors. It was fully privatised in 1996. The 4CV, developed in secret during the war, was a great rival of the VW Beetle and the Morris Minor, its success laid the groundwork for expansion into Europe and in the United States then, where the Dauphine model was not, however, very successful. In the '80s, Renault reappeared to motor racing and acquired American Motors defending the Jeep brand, sold in 1987 to Chrysler. In 1999, Renault bought a majority stake in the Romanian Dacia and embarked on a takeover of the Japanese Nissan.

PSA Peugeot-Citroën group was formed in 1974 when Peugeot bought about 40% of Citroën, going to own the 90% two years later. The group now sells through the brands Peugeot, Citroën and DS. The history of Peugeot and Citroën began in the late 1800s, but while the Peugeot story is made of strength, the one of Citroën is a history of crazy and ruinous spending to counter Renault. Citroën began its activity as a small factory producing under license for Skoda; it then moved from the inevitable war production to be the first manufacturer to produce a complete vehicle in France, put on the market at a very low price. The response was immediate, as well as immediate and eager were the investments to overcome the rival Renault, such as the one to create the car dedicated to women: in 1934 the inevitable failure that saw the then creditor Michelin took the control of Citroën. The '60s were the years of attempts to ally but all were in vain and did nothing but dried the finances of the French OEM. Peugeot started as a bicycle manufacturer and then specialised itself as passenger and racing car manufacturer in 1889. The years of war stopped the production that restarted in 1946 thanks to exports to the United States. The end of the Sixties marked the beginning of the joint venture activities with several competitors such as Volvo and Renault. Through the purchase of Citroën, Peugeot maintained its identity of modern and robust car manufacturer with a good value for money ratio for a few years, becoming the first manufacturer in Europe in terms of volumes.

### *Italy*

The history of Italian automotive industry coincides substantially with a name, the one of FIAT, Fabbrica Italiana Automobili Torino. Fiat was founded in 1899 by a dozen of aristocrats, landowners, entrepreneurs and professionals in Turin, willing to establish a

plant for the production of cars. The history of the Fiat, now one of the brands of the big FCA group, retraces those previously described as regards the period between the two World Wars, namely the production of car pass of the torch with war production. It was after World War II, that Fiat affirmed its supremacy on the market by starting mass production for the 500 and 600 models through the aid provided by the Marshall Plan. The products cost a lot, almost 11 times the salary of a Fiat worker; thanks to the protection duties the company grew fast, arriving to capture 90% of the Italian market and to be second in the European rankings in terms of production behind Volkswagen. In 1969, FIAT acquired Lancia. Lancia was founded in 1906 and established itself on the market as a brand dedicated to racing and innovation, but this very strategic direction led Lancia to financial crisis. The crisis forced Lancia to sell itself to Ferrari in 1955. In 1958, Ferrari abandoned Lancia selling it to Pesenti group (cement industry), but the customer was not willing to pay a premium price to justify the high production costs. The success under the Fiat's guidance was reached with the Delta model, especially in the full version, which shared the platform with Fiat Ritmo. The abandonment of the races led Lancia to lose a bit of its market share. Lancia revived with the Lancia Y, which is currently the bestselling model. Times changed with the establishment of the EEC and the reduction of duties, as well as the need to change strategy and open up export. In 1986, the IRI (Italian Institute of Reconstruction) ceded Alfa Romeo to Fiat, the company founded in 1906 as an extension of a French automobile manufacturer. The market had always recognised a clear superiority as a manufacturer of sports cars to Alfa Romeo; this superiority has never been paid in economic terms, aided by the fact that it was difficult to give it a clear identity into the Fiat brand portfolio. Alfa Romeo is on the market as a competitor of BMW, Mercedes and Audi, but even with heritage, it still lacks of a wide range of products in order to compete with these big names. Yet the beautiful models are not missed at Alfa Romeo, just think of the first version of the Giulietta after World War II, when the production was converted to mass sports car, or of the 164 produced in sharing with Croma, Thema and Saab 9000, the GTV, the 147 GT, the Brera, the MiTo, the new version of the Giulietta and the latest spectacular Giulia. As previously mentioned, the lack of economic evidence in terms of sales led to the closure of the biggest Italian plant of Alfa Romeo in Arese, today home of a shopping centre, the Alfa Romeo museum and a

Motorvillage -owned FCA dealer- totally dedicated to the Jeep and Alfa Romeo brands. Lancia and Alfa Romeo's sales were down because of the crisis in demand, the aggressive strategies of the German premium manufacturers and the slow launch of new products. Despite the acquisition of Lancia and Alfa Romeo then, in 1990 Fiat company was still too small compared with GM, Ford, Daimler-Chrysler, Volkswagen, Renault-Nissan and to deal with the advent of the Japanese manufacturers. The path chosen to tackle with competitors' strength was that of diversification (a Romiti's desire), but then it was quickly abandoned to restore accounts that got gradually worse. The internal growth was not possible, but Fiat needed to be open to alliances and takeovers with an American partner and not with a Japanese or European one, in order not to duplicate the problems and be cannibalised by premium German brands. In 1998, Fiat tightened the agreement with put option with GM, that then brought the same GM (owning Chrysler, Jeep, Dodge and Mopar brands) to become Fiat's prey, aided by the unfavourable market timing for the American company: Wagoner signed an alimony avoiding Fiat to pass under the control of the banks. Ten years later, the market provided Marchionne a hungry opportunity: the acquisition of 20% of Chrysler, a partnership that allowed Fiat to use the important economies of scale in purchasing, the experience in large vehicle manufacturing and the openness to the richest market in the world to distribute 500 and Alfa Romeo. On the other hand, Fiat brought Chrysler the small and mid platforms, the fuel-efficiency technologies and power-train systems. In 2014, the total acquisition led FCA to become one of the biggest auto groups worldwide (ranked 7<sup>th</sup> in the 2015 OEMs top 10) and less dependent on European automotive market.

## **1.2 The British Industry died at 109**

The British car industry history lasted about 109 years, from the birth of Daimler in 1896 to the sale of Rover to Chinese competitors. 1100 British indigenous enterprises made way for the Japanese, the great German groups and the Indian and Middle Eastern capitals. The most famous brands are no longer British-owned, but still produce approximately 100% in Britain. The industry has a late birth, that comes from diversification desired by bicycle manufacturers (to name some names Humber, Rover, Singer, Hillman, Riley) through the transfer of technology from two to four wheels. The productions were purely internal and only a few years later it emerged the importance

and convenience of producing internally the essential components and ask for outsourcing for the remaining parts: it was then that the first specialised suppliers faced the market, as Dunlop in the tires. Although Britain was the richest country in Europe, at the dawn of World War I, many firms failed because of a cultural issue: the academic education of management was poor and omitted the important aspect of corporate finance (at the time there were no CFO figures in British companies) and the mechanical work was considered derogatory and vulgar. As it did for other countries, also the UK car production gave way to war materials during World War II; this set the stage for mass production in the automotive industry. In the Twenties, the industry had a great development driven also by the fashions that came from the United States, such as closed cars: given the growing number of imports, the government decided to adopt two protectionist measures to counter a possible 'American invasion': 1) it introduced a 'horsepower tax' that car owners would have to pay in relation to engine horses of owned car (the Model T which had 22.5 horses cost 22 pounds, while the Morris only 12 because it had an engine of 11.9 horsepower); 2) it decided that foreign manufacturers could sell cars only if they set up production facilities in the local area (Ford, Citroën, Peugeot and Fiat opened plants, while GM bought Vauxhall). The Big Three British, Morris and Austin Singer accounted for 75% of vehicle production in the UK and in the '30s, despite the devastating effects of the Great Depression, the country jumped to the top of the ranking of European manufacturers. Primacy was lost within a few years, recovered first by France and then by Germany, due to the high number of OEMs who competed with a wide range of models in a market that consisted of little more than 300,000 units. When the Second World War blew up, 130 factories out of 180 were damaged. Only in the 50's, when the demand for cars grew rapidly, production companies could benefit from the shadow factories built to produce engines and warplanes against Germany. The Labour government decided that the companies would export their models to gain currency and concentrate on becoming 'one model' businesses to tackle the excessive proliferation of models. It finally replaced the horsepower tax with a fixed flat tax to boost production of more powerful engines. The sports car exports seemed to work, while those for civilian use were struggling to take off: the cars were designed for the British market and infrastructure, while abroad people needed more robust machines able to tackle the most uneven roads putting a

strain on the engine, the steering wheel and the cooling system; major innovations in engineering and style were made as a result of an avalanche of complaints to after-sales. In an effort to stop the fragmentation and weakness of the industry, British Motor Corporation (BMC) was founded in 1952, it included five car manufacturers for 40% of the total market (Austin, Morris, MG, Riley and Wolseley). Three years later, BMC committed a great error in positioning the price of the new launched legendary MINI too low. MINI was an innovative car with front-wheel drive and small wheels to create space. Ford, taking advantage of BMC's fear that the public would be scared with the new technology, won a large share of the market with the traditional technology and Anglia model.

In the '60s, the BMC did not give the desired results because of labour intensive production methods that did not allow lowering prices and the high labour costs: British Motor Holding (BMH) born from the combination of Jaguar and BMC. The BMH was soon the star of a new concentration funded by the government, which joined BMH to the successful Leyland-Triumph-Rover: the fourth European car manufacturer was called British Leyland Motor Corporation (BLMC). Despite investments in latest technologies and the famous brand portfolio, the unattractive models, union conflicts, high cost and the entry into the European Union drowned BLMC, who lost 8% of market share in just two years. The number of mergers financed by the government, the captive imports of Ford and GM, the losses in developing countries as a result of the dissolution of the Commonwealth and the Japanese offensive, are the main causes that led to the beginning of the end of British automotive industry: Chrysler UK and BLMC asked for help to the government proposing a merger that was not accepted. Chrysler sold its UK activities to Peugeot (Peugeot-Talbot), while BLMC was nationalised as British Leyland (BL) and later formed a partnership with Honda to design a new car (with Japanese engine and English body) able to face Ford, Peugeot-Talbot and Vauxhall (GM) that were sharing the market. The Conservative government (Thatcher) limited the union power by encouraging the Japanese to open factories in the British territory, Nissan started first, followed by Honda and Toyota; it also continued to support the Labour plan for BL but changed its name to Rover Group, which was later bought by British Aerospace and sold to BMW in 1994: there were no longer British-owned car builders. The partnership with Honda ended and the German group decided



to invest only on MG and Land Rover, to then abandon everything in 2000 with the exception of the MINI and of the production plants: Land Rover was sold to Ford that, in 2007, ceded Aston Martin to mixed Arab and Italian capitals and, in 2008, Jaguar and Land Rover were sold to Indian group Tata Motors; while MG Rover was sold to a British private equity and subsequently to the Chinese Nanjing and Shanghai Automotive Industry. What was left of Rolls Royce and Bentley was respectively bought by BMW and Volkswagen.

## **2. The Engine of Europe**

According to ACEA<sup>119</sup>, the European Automobile Manufacturer Association, Europe's cars, vans, trucks and buses are the cleanest, safest and quietest in the world. Our continent leads the way in clean production, with decreasing quantities of water and energy used to manufacture a vehicle, and much less CO<sub>2</sub> and waste produced in the process. In fact:

- the average car engine emits 28 times less carbon monoxide than 20 years ago;
- 75% of new cars emitted less than 130g CO<sub>2</sub> per kilometre, in 2015;
- a new car today consumes 15% less fuel per 100km than 10 years ago (average);
- the noise from passenger cars has been reduced by 90% since 1970
- Europe's vans, trucks and buses are the most technologically-advanced in the world;
- trucks' fuel consumption and therefore CO<sub>2</sub> emissions have decreased by 60% since 1965 and with the introduction of EURO VI regulated emissions have been slashed to near-zero levels, down 98% since 1990.

Europe is one of the world's largest producers of, and market for, passenger cars. Cars are the number one source of mobility in Europe, where over 70% of journeys are made by car (private car, taxi or car-sharing), while buses are the most widely used and cost-efficient mode of collective passenger transport, stacking up 527 billion km every year. The European Union has almost one car for every two citizens.

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<sup>119</sup> ACEA's members are BMW Group, DAF Trucks, Daimler, Fiat Chrysler Automobiles, Ford of Europe, Hyundai Motor Europe, Iveco, Jaguar Land Rover, Opel Group, PSA Peugeot Citroën, Renault Group, Toyota Motor Europe, Volkswagen Group, Volvo Cars and Volvo Group.

Vehicles move people, deliver the goods and serve the community: so that car and buses provide freedom and mobility for all, consequently direct access to education, health and employment, while trucks and vans deliver the goods and services we need in our daily lives, or 18 billion tonnes of goods per year the 75% of all goods carried over land in Europe. 85% of all goods carried by trucks are transported over short distances of less than 150 kilometres. Postal, waste and emergency services and many other public ones are delivered by mini-buses, articulated buses, urban delivery vans, container trucks, ambulances, fire trucks, dumpers, crane trucks, pick-up trucks, car transporters and many more. About 90% of the value of all goods in Europe is transported by truck; with vans they provide an efficient, door-to-door mode of transport, making the link between producers, businesses and consumers.

The automotive industry powers the economy, generating 6.5% of EU GDP and supporting a vast supply chain with an array of business services. The 5.6% of the EU workforce is employed in the sector, for a total amount of 12.2 million people; in particular, 2.3 million are high-skilled manufacturing workers representing the 7.7% of the EU's manufacturing employment. The strategic importance of vehicle manufacturing is measured by the number of cars, vans, trucks and buses manufactured per year: European manufacturers produce 18.4 million vehicles (25% of all cars manufactured in the world and 18% of world's trucks, vans and buses ~2.4 million units) in some 296 assembly and production plants in 26 countries across Europe. The delivery of quality 'Made in Europe' products around the world makes European auto industry a global player: exports bring a €100.4 billion trade surplus, in particular European heavy-duty vehicles exports, which are first choice around the globe, generated a trade balance surplus of €4.8 billion in 2015.

The automotive industry spurs innovation; it is a key driver of knowledge and innovation, representing the largest private contributor in R&D in Europe, investing over €44.7 billion. In 2015, about 6,000 patents were granted to the automotive sector by the EPO. The industry also generates revenues for governments, accounting for over €400 billion in tax contributions in just 14 EU countries.

### 3. European Automotive Industry Sales and Production Figures

European countries struggled to react to the contraction of demand due to the recent crisis: as shown in Figure 10, in 2013 markets suffered a lot in production and sales comparing to 2005 levels and the peak of 2007. According to some studies, Italian and Spanish markets were those most downsized, while demand in Germany, France and United Kingdom was a few under the level of 2005<sup>120</sup>. In European countries penalised by the grip on family income, we register a shift of demand towards those with smaller dimensions, solid and low consuming: although the grip mass-market consumers are more and more informed and demanding than in the past due to digitalisation and require model differentiation.

Similarly to demand, also production shows a shift towards emerging areas, despite the situation of automotive industry in Europe is lightly more stable than in 2008/2009, as indicated for example by orders in the motor vehicles (see Figure 9); until now, however, it has been not possible to reach again the pre-crisis level. Production moved in more dynamic markets, where the potential of consumer growth is bigger; they are areas often characterised by a lower labour cost and by incentive policies to investments. It is possible to affirm that European automotive industry have to face an overall complicated situation: the demand is still stagnant as clearly showed by new registration trend, while extra-European markets registrer an impetuous growth. ‘Sales have improved in the European Union since the financial downturn, but the E.U. auto industry is held hostage by local economies that are teetering on the edge of recession. In 2015, new car registrations in the E.U. rose 9.3% year-on-year, to 12.6 million units. But that is well below the record year of 2007, when more than 18 million vehicles were sold in the region. Cars in the European Union are on average 9.73 years old<sup>121</sup>. The historical minimum for the European Union was reached in 2013, with 11,873,302 units of passenger cars newly registered.

In some E.U. nations struggling to grow their economies — notably France, Greece, Spain, Italy, and Portugal — automakers face losses or low profits, fragmented markets,

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<sup>120</sup> These different trends also carry weight a different spending dynamics in household consumption expense, which shrank continuously both in Italy and in Spain between 2011 and 2013, unlike what happened in the other three countries.

<sup>121</sup> See ACEA and PriceWaterhouse Cooper 2016, cit.

and the inefficiencies of model proliferation. The E.U. auto industry must figure out ways to better match production capacity to market demand, while simultaneously investing in new potentially strong product areas (for example, small SUVs and crossovers) and in new automobile technologies<sup>122</sup>.

Only few European producers benefit from foreign markets' potential. While for mass manufacturers -PSA Peugeot Citroën, Renault or Fiat who have historically sold their small and medium-sized cars particularly in Europe- the economic situation is looking increasingly difficult recording major losses, plant closures and reduction of jobs, in the high-end segment manufacturers like BMW and Daimler returned to achieve substantial increases in sales volumes.

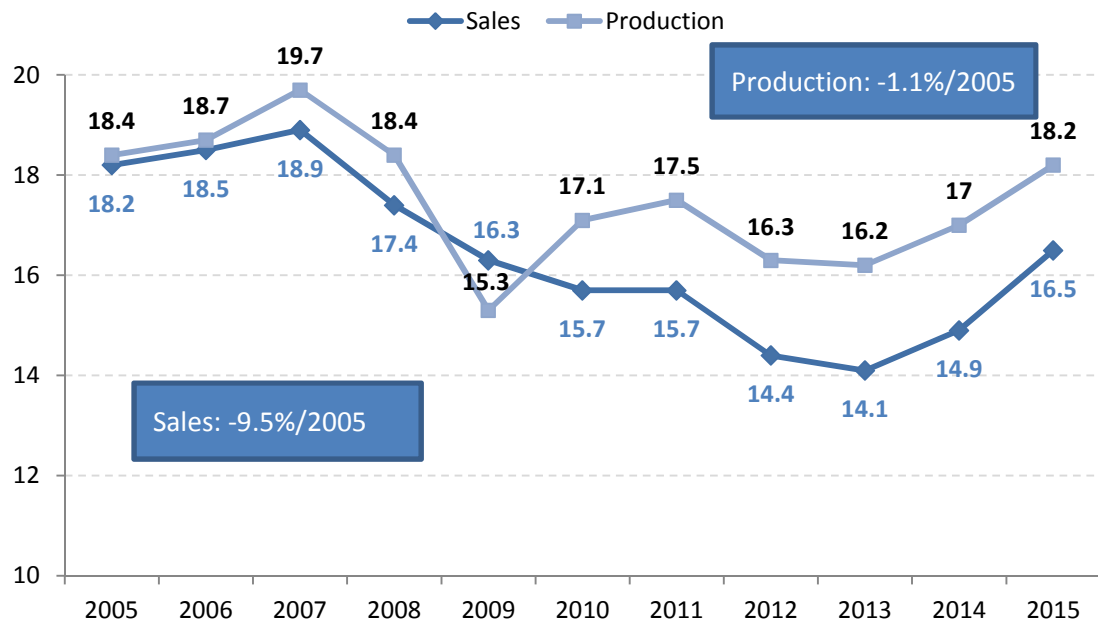
□ *Renault announced in 2013 a restructuring plan that provides for the elimination of about 7,500 jobs in France by 2016, equivalent to 14% of its total actual in the country of origin. (See Renault Group Corporate Website).*

As shown in Figure 12, from 2005 to 2015, production fell by 1.1% overall, while sales fell by 9.5%, despite the last two years are marked by an increasing line. In the leading European markets, namely France, Germany, Italy, Spain and the UK, the percentage of sales and production shows a positive differential in 2015 compared to 2014. The country with the highest growth percentage is Italy, followed in order by Spain, the UK, France and Germany (see Figure 13).

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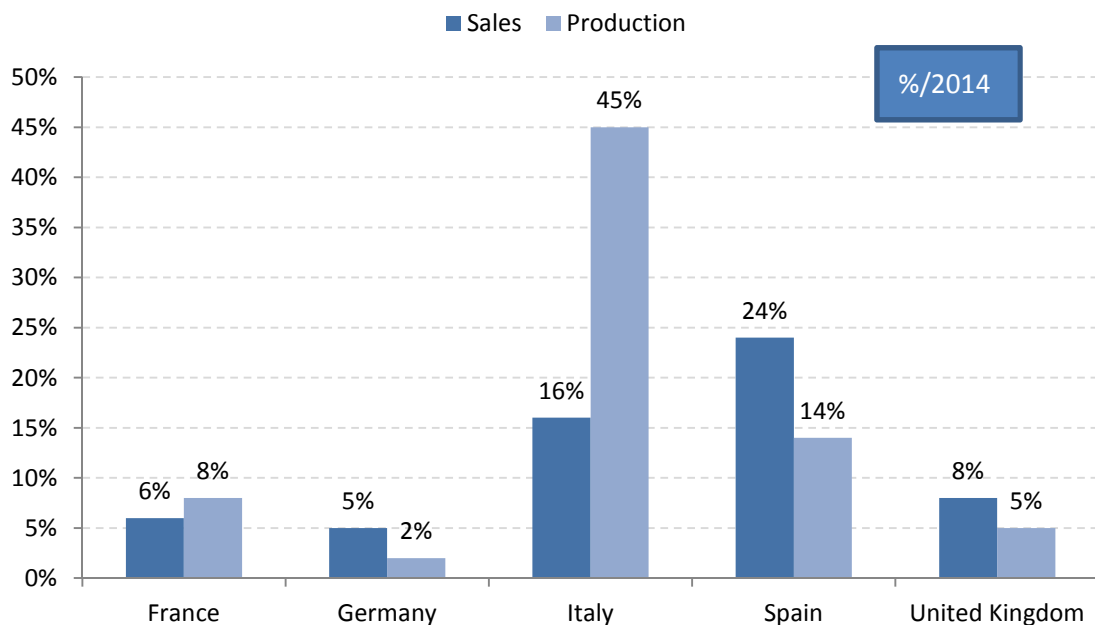
<sup>122</sup> See PriceWaterhouse Cooper 2016 and ACEA.

Figure 12: EU28+EFTA 2005-2015: Total Production and Sales (in Million)



Source: OICA Press Conference, 2016, Geneva Motor Show (Data are 'all vehicles': PC, LCV, HCV, Buses).

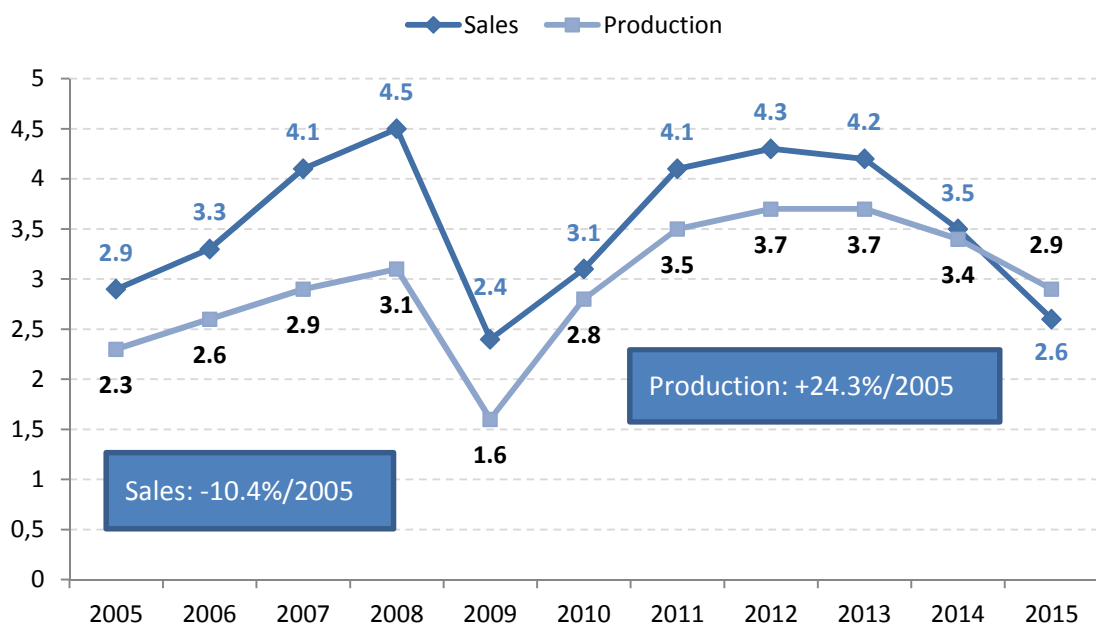
Figure 13: EU28+EFTA 2015: Main EU Markets (in Million). 2015 Total Production and Sales % growth on 2014.



Source: OICA Press Conference, 2016, Geneva Motor Show (Data are 'all vehicles': PC, LCV, HCV, Buses).

The crisis has left none exempt of the other non-European countries, such as Russia, Turkey, Ukraine, Serbia, Belarus, Bosnia, Moldova, Armenia, Georgia, Macedonia, Albania. If we look at the 2005-2015 decade we observe that, although hard hit by the crisis, these countries showed signs of recovery until 2012 and a subsequent decline until 2015. Globally, the production data show a positive differential of 24.3%, confirming the area in analysis is an attractive destination for foreign investments; sales, instead, show negative results with a decline of 10.4% (see Figure 14).

Figure 14: Other Europe non-EU 2005-2015: Total Production and Sales (in Million)



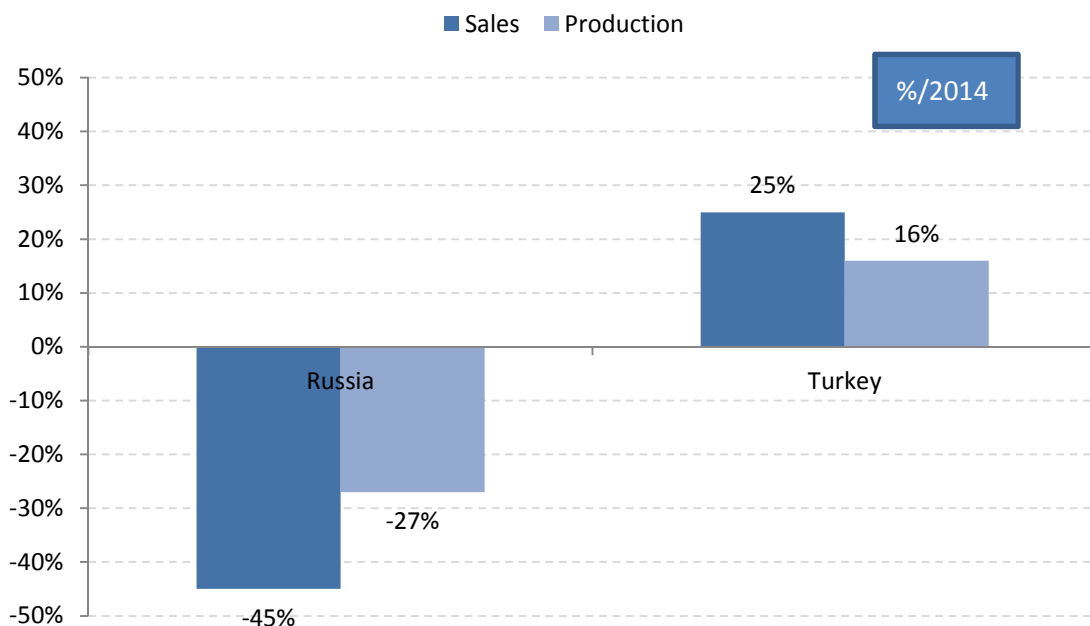
Source: OICA Press Conference, 2016, Geneva Motor Show (Data are 'all vehicles': PC, LCV, HCV, Buses).

Among the above 11 countries the main markets are represented by Russia and Turkey. If we look at the ratio between production and sale of 2015 on 2014, these countries show opposite trends: Russia data shows declining, while Turkey strong growth (see Figure 15).

□ In 2015 Opel (GM), Volkswagen, Seat, Mitsubishi and PSA Peugeot-Citroën decided to downsize activities in the countries where the business is strongly affected by the crisis with Ukraine, by international sanctions and

related retaliation. The difficult situation in the automotive market is due not only to the depreciation of the Ruble, but also to the new rules imposed to foreign producers in Russia and to importers after the country's entry into the WTO. The Kremlin allocated about 400 million euros in aid to manufacturers and incentives to clients, but this did not seem to be enough. The joint venture that produces the Citroën C4 hatchback, the Peugeot 408 and the Mitsubishi Outlander and Pajero, halted production in Kaluga; GM suspended the assembly of Chevrolet models, with the exception of the model resulting from the joint venture with Avtovaz, but it had also established the retirement of the brand Opel continuing to oversee the market only with the top range (Corvette and Camaro, or Cadillac).

Figure 15: Other Europe non-EU 2015: Main non-EU Markets. 2015 Total Production and Sales % growth on



2014

Source: OICA Press Conference, 2016, Geneva Motor Show (Data are 'all vehicles': PC, LCV, HCV, Buses).

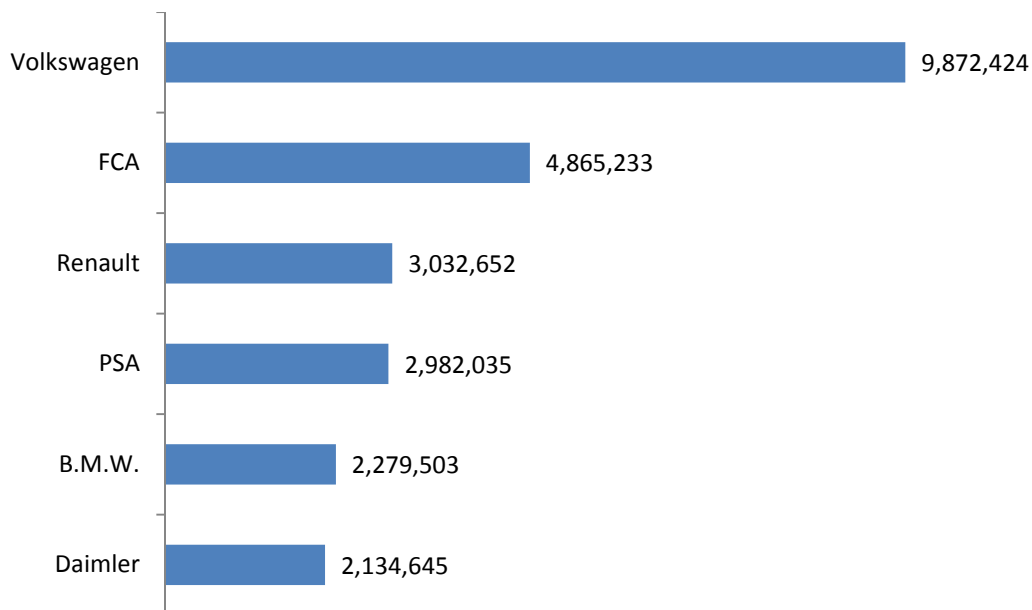
□ Turkey occupies the fifth place in the European ranking of countries that build more cars and commercial vehicles, with production increased by 16% in 2015 on 2014 equivalent to about 1.36 million units. Major OEMs in Turkey, also directly employ more than 50,000 people, which manufacture

mainly for export, (more than 1 million units in 2015) whose main target is the European market: models sold in Italy, France, Spain, Germany and the UK like the Fiat Tipo, Renault Clio or the Hyundai i10 and i20 are produced in Turkey.

#### 4. Leading European Players

The scope of this analysis includes both mass-markets OEMs both premium OEMs. Despite the recent economic crisis, that has had strong impacts on automotive profitability, Western Europe is still headquarter of major automotive companies that operates as global players; totally Volkswagen (VW), Renault, Fiat Chrysler Automobiles (FCA), Peugeot Citroën Automobiles (PSA), BMW and Daimler -the analysed groups- have produced 25,166,492<sup>123</sup> passenger cars and commercial vehicles, which account for a quarter of the world total production. (See Figures 16 and Appendix Table 16)

**Figure 16: Top European of World Ranking Manufacturer in 2015 (World motor vehicle production. Data are all vehicles)**



Source: OICA. Adapted by the author (Data are 'all vehicles': PC, LCV, HCV, Buses).

<sup>123</sup> Source OICA, data as 2015. The data is not comprehensive of Renault-Nissan alliance. Taking into account the production quota of Nissan equal to 5,170,074 units, the total production of players analysed would amount to 30,336,566.



Table 15: Businesses and Brands of the leading European Players

	Passenger Cars	Luxury Passenger Cars	LCV	HCV	Buses	Components	Financial Services
<b>Volkswagen</b>	Volkswagen, Audi, Skoda, Seat	Bentley, Bugatti, Porsche, Lamborghini	VW professional	Man, Scania	Scania		✓
<b>Renault</b>	Renault, Dacia, RSM		Renault				✓
<b>Fiat-Chrysler</b>	Fiat, Alfa Romeo, Lancia, Chrysler, JEEP, Abarth, RAM, Dodge, Mopart, SRT	Maserati	Fiat professional			Magneti Marelli, Teksid, Comau	✓
<b>PSA</b>	Citroen, Peugeot, DS		Citroen, Peugeot			Faurecia	✓
<b>BMW</b>	BMW, MINI	Rolls Royce					✓
<b>Daimler</b>	Mercedes-Benz, Smart	Maybach, AMG	Mercedes-Benz Vans and Camper	Mercedes-Benz, Freightliner, FUSO, Western Star, BahratBenz	Mercedes-Benz Buses and Coaches, Thomas Built Buses, Setra, BahratBenz Buses		✓

Source: Union Camere, 2013, p.117. Adapted by the author, data as 2015.

In 2015, the production of the six firms swung between the nearly 2 million of Daimler and the approximately 10 million units of Volkswagen. FCA has produced about 4.9 million units, Renault about 3 million (the Renault-Nissan alliance about 8.3 million), PSA about 3 million cars, and BMW just over 2.3 million. Apart from

Volkswagen, no group produces above the threshold 6-7 million pieces per year, a level that allows operating with profit and with significant economies of scale. The groups which are object of analysis have business perimeters, brands and markets very different among them. The portfolio of products and markets served by the groups is divided and differentiated, as shown in Table 15<sup>124</sup>. The most extensive portfolio is the one of Volkswagen, which consists of Passenger Cars, Luxury Passenger Cars, LCV, HCV, Buses and Financial Services and lacks only of the business of the components; while the less extensive are the Renault and BMW portfolios operating, respectively, in the business of passenger car and LCV and Passenger Car and Luxury Passenger Cars. Only two automakers out of six have their own brand of components, namely Fiat-Chrysler and PSA. Only BMW has no business in the LCV, while Volkswagen and Daimler also operate in the field of HCV and buses. All six companies offer financial services (see Table 6).

The analysis of production and sales by geographical area shows that EMEA contributes to 70% of production, consolidating groups as euro-centric, with the exception of FCA, that is the group that has more diversified and relocated its production structure (about 25% of cars in EMEA and 54% in North America with an important presence in South America, but very weak in Asia). The European automotive industry is characterised by a dense network of participations and alliances, especially for research and development and production in Emerging Countries, where the opening of new production facilities are planned.

The production capacity remains underutilised, especially for FCA and for the French groups (PSA Peugeot Citroën and Renault), which also placed the production close to end markets, where the plants are exploited profitably; while German premium brands (BMW and Daimler) are more patriotic and export-oriented, preferring to keep the production of passenger cars in EMEA: in particular, the production in Germany accounts for more than 50% of the total. For this reason, it should be noted that the employment of groups in the country of origin is still relevant and equal to about at least

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<sup>124</sup> From the original table the business of motorcycles has been excluded. For completeness of information, Volkswagen holds the Ducati brand, the PSA group the Peugeot brand and BMW operates on the market with the same brand name, the BMW one. The table doesn't take into account the alliance Renault-Nissan.

50,000 workers in every nation and that the automotive industry employs nearly 12 million people in Europe.

The main markets are differentiated as either no group can manage to convey at least 10% of its sales both in the American, Asian and European markets. Apart from Europe, FCA oversees European and both North and South American markets, while Asia has a lower impact; the Volkswagen strategy, instead, is to be less present in North America; while the premium German brand have a weak presence in South-America.

Hereby is a brief analysis of the above European groups and the alliances that they have established in the automotive market<sup>125</sup>.

#### *Volkswagen (VW)*

The Volkswagen Group is the second largest automotive group in the world after Toyota, as well as Europe's largest car manufacturer with an extensive product range that goes from the cars for the mass market (VW, Skoda, Seat), to the premium and luxury brands (Audi, Porsche and Bentley), from commercial vehicles, to industrial ones and buses (VW Professional, Man and Scania). 2014 production amounted to 9,894,891 units. It also has a financial division. Volkswagen has launched numerous alliances in the course of its life, as the acquisition of Scania in 2008 and Porsche in 2010-2012, minority stakes in Suzuki Motor and joint with the Chinese groups FAW and SAIC, with whom it also activated non-equity agreements for research and development.

#### *Fiat-Chrysler (FCA)*

FCA, the less euro-centric group among those analysed, is born after the total acquisition of Chrysler by Fiat in 2014. Seventh group in the world and second European car manufacturer, over the last 5 years it has carried out a substantial repositioning by splitting some of its business units: in 2011 those related to commercial

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<sup>125</sup> UnionCamere stresses that the joint venture or minority joint of all the groups are generally accounted using the equity/net worth method; i.e. revenues and operating costs of these companies are not counted in those consolidated group while their contribution is manifested, pro rata, as investment income (item similar to financial revenue).

vehicles, in Fiat Industrial first, in CNH International later and lastly in Ferrari in 2015. Today the company is organised into three business units: mass-market (Fiat, Alfa Romeo, Lancia, Chrysler, Jeep, Abarth, RAM, Dodge, Mopart, SRT), luxury (Maserati) and components (Magneti Marelli<sup>126</sup>, Teksid, Comau). In Europe, the Group designs, develops, engineers, produces, distributes and sells spare parts, cars and light commercial vehicles under the brand names Alfa Romeo, Chrysler, Fiat, Fiat Professional, Jeep, Lancia, Abarth and Maserati.

The group has set up several joint ventures: a) with the Serbian State for the production of 500L; b) like other automakers, FCA also entered the Chinese market thanks to an equal participation with GAC group; c) financial services<sup>127</sup> offered by FCA Bank are derived from a joint venture between FGA capital and Crédit Agricole Consumer Finance. Multiple are also the collaboration agreements: the biggest one with GM has finished in 2013, while the co-production agreements with the Peugeot group continue for commercial vehicles in Italy, with Koc Group to produce cars in Turkey; in India it cooperates with the TATA group for the development of engines and transmissions.

### *Renault*

The carmaker Renault, 15% owned by the French state, is active in the production and sales of passenger cars (Renault, Dacia, Renault Samsung Motors), commercial vehicles (Renault) and in offering financial services (RCI Banque). Also, the French group, tenth in the world ranking without counting the alliance with Nissan and third European group, has established numerous equity and non-equity competitive alliance: not exempt by the charm originated from Eastern Europe in terms of costs, in 1999 the group bought the Romanian Dacia, modernising the then existing plants. Thanks to the excellent performance of the low-cost Dacia brand, it reached to offset the decline in

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<sup>126</sup> It's recent news, but it is not yet confirmed that Magneti Marelli, the only Italian company present in the top 100 of Tier1 suppliers, will be sold to Samsung Electronics. Through this sale, FCA would reduce the industrial debt, amounting to 5.5 billion euro and, at the same time, would create closer relationships between Magneti Marelli and Samsung, which since 2009 cooperate in the production of displays for infotainment and navigation. FCA would align with the widespread logic in the automotive industry to separate the components from the main production. However, the acquisition would provide Samsung a major presence in the auto industry and the certainty of a highly competent partner to collaborate on connectivity and advanced technologies.

<sup>127</sup> Unlike the case of other groups, the financial services for FCA do not constitute a real business unit.

production of its own brand. In 1999 it also tightened an alliance with Nissan: the Renault-Nissan group, formed with the aim of enhancing the existing brands and create synergies in the process of purchasing and developing models, is the third largest group in the world constructors' ranking for 2015. Renault owns 43% of Nissan and the latter 15% of the first. Through this strategic alliance, several other participations have led Renault's entry into other strategic players: since 2010 Renault has also held 1.55% of the Daimler group, while the latter participates in the Renault group for 3.1%; since 2012 the alliance has held a majority stake of the Russian company Avtovaz. Together with Nissan, Daimler, Ashok Leyland, Mitsubishi and Dongfeng Motors, Renault is developing technologies for hybrid engines.

### *PSA Group*

The PSA Group was created in 1976 by the merger of Citroën S.A. and Peugeot S.A: tenth group in the world and fourth European automotive group<sup>128</sup>, it produces cars (Peugeot, Citroën e DS), commercial vehicles (Peugeot e Citroën) and components (Faurecia), offering financial services through Banque PSA Finance.

The group implemented numerous strategic alliances for the development and the production of cars and components: in 2012, it signed joint venture agreement with a) General Motors (Opel)<sup>129</sup> for the development and the production of car models on PSA's platforms and for the joint management of projects related to cost optimisation in logistics and procurement; b) with Fiat for the production of commercial vehicles in Italy; c) with Mitsubishi for the development in the Turkish and Russian markets and d) with Toyota for the production of city cars (Citroën C1, Peugeot 108 and Toyota Aygo) in the Czech Republic; e) with BMW for the development of hybrid engines. PSA is also interested in entering the Chinese market: the relationship with Dongfeng to produce in the local market has been intensified as a result of poor economic performance and financial debt at the beginning of 2014: the Chinese group has shares identical to those of the Peugeot family and the French State, amounting at 14%.

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<sup>128</sup> The data is referred to the OEMs Top 10, not considering the Renault-Group alliance.

<sup>129</sup> In March 2012, as part of a capital increase with preferential subscription rights of roughly €1 billion, General Motors became the number-two shareholder of PSA Peugeot Citroën with 7% of total capital. Because of models overlay, at the end of 2013, GM sold its share, while confirming the alliance with PSA Group.

### *BMW Group*

Established in 1917, BMW Group, with its 31 production and assembly facilities in 14 countries as well as a global sales network, is the world's leading manufacturer of premium automobiles, twelfth group in the global ranking and fifth in the European one. The BMW group works in premium cars segment (BMW, Mini), in the luxury one (Rolls-Royce) and provides financial services (BMW Group Financial Services). The Quandt owns the majority of shares and the company has no direct and significant participation in other automotive groups, but a joint-venture with Brilliance Automotive for the production in China. BMW's non-equity agreements are mostly concentrated in outsourcing strategies; in fact, the group signed assembly agreements in different countries such as Russia, Egypt, Indonesia, India, Brazil and Thailand. Moreover, the group develops carbon fibres in partnership with SGL, hybrid engines with PSA and electric cars with Toyota.

### *Daimler AG*

Daimler, the inventor of the automobile, is the fourteenth worldwide group and sixth European one. The automotive pioneers benefits from an expanded portfolio that consists of passenger cars (Mercedes-Benz, Smart, Maybach, AMG), commercial vehicles (Mercedes-Benz Vans), industrial vehicles (Mercedes-Benz, Freightliner, FUSO, Western Star, BahratBenz), buses (Mercedes-Benz buses and Coaches, Thomas Built buses, Setra, BahratBenz buses) and a financial services division (Mercedes Benz Bank, Mercedes Benz financial services and Daimler Truck financial). It also offers car-sharing services (Moovel, Car2go, Mytaxi). It is owned by institutional investors and investment from Kuwait as well as by the Renault-Nissan alliance. In turn, in addition to the investments in Nissan and Renault, Daimler also holds a minority stake in Tesla aimed to continue sourcing powertrain for Mercedes-Benz B-Class Electric Drive from Tesla). As the previous groups, the entry on the Chinese market is linked to the production in collaboration with a local group, in this case BAIC and its subsidiaries. It has research and development projects in the field of electric engines and cars powered by fuel cells.

## **5. Why is Europe in Decline?**

The car industry went from European Affair to European decline, although ACEA says that the sector is the engine of Europe and the industry is the leading investor in Research and Development. So Europe is a Europe of pioneers, style and speed but it is a Europe that dies. Following the main reasons:

1. Impact of industry dynamics on profitability
2. Excess of production capacity;
3. Demand stagnation;
4. Demography;
5. Market fragmentation and lack of a unique regulation;
6. Labour market, unemployment and labour unions;
7. R&D expenditures and innovation;
8. False environmental focus.

### **5.1 Impact of Industry Dynamics on Profitability**

Fixed capital affects much the automotive business, with significant impact on the income statement (depreciation); the incidence of fixed costs, however, it is important for the automotive industry, which is a kind of capital intensive industry. The management of working capital is generally positive and generates cash flows coupled also with the high bargaining power with suppliers, which takes the form of deferred payment terms.

The groups have medium-term objectives which are challenging in terms of sales and profitability and that will be achieved by exploiting networking, increasing the presence on distant markets and extending/repositioning their product range in market segments with a higher value. The analysis of financial statements, however, shows that the average debt is high: the means of third parties in relation to equity are at critical levels for Peugeot and FCA absorbing much of the gross operating profit (EBITDA). The investments made in relation to turnover are relevant to some groups and come to fully absorb the cash flows from operating activities (as per FCA in 2013), while to others are less than the capital consumption, thus effectively reducing the production base available as in the case of PSA and Renault. For the success of sales and margin

objectives above, the groups cannot, however, be exempted both from making substantial investments and from reducing costs by exploiting economies of scale and synergies for the rationalisation of purchases.

Net operating results are observed more in premium segments rather than in the mass market segments: both the operating profitability indices and the net earnings are higher for the German groups (especially BMW and Daimler), while FCA is intermediate positioned with modest but positive indices, better than those of the French groups.

## **5.2 Excess of Production Capacity**

As noted in paragraph 1, Europe is not able at first to justify mass production and now it is in a situation of non-cyclical but structural production over-capacity, independent from normal fluctuations in demand.

According to forecasters, capacity utilisation will increase but a return to 2007 levels (more than 85%) is not close: capacity utilisation at Europe's vehicle plants have risen to 70% in 2014 because of factory closures and rising sales, and may return to 80% as soon as 2016. The 85% that experts say is necessary for carmakers to run their plants profitably. Some experts agree that capacity utilisation could exceed 80% in some European regions by 2016. It could continue to improve going forward. Some well-known money-losing mass market producers affirm they could bring their operations back into the black: a slight recovery in car sales will help ease the burden of too much manufacturing capacity, but not enough to make a big difference to carmakers' bottom lines<sup>130</sup>.

□ *Ford, that has a market with 20 million units of capacity and about 14 million sales, declared its Europe unit was going to be profitable again in 2015 and it expected to be hit by \$800 million in restructuring and personnel costs as it closed its Genk facility and moved that production to Valencia, Spain.*

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<sup>130</sup> See PriceWaterHouse and Clark Jennifer, 2014, cit.



□ *GM's Opel division is going to stop lose money by 2016. In 2014, GM's plant in Bochum should have improved the region's capacity utilisation by a couple of percentage points.*

Some studies show that Western Europe has up to 10 car factories too many, consisting in billions in combined losses at mass-market carmakers such as Opel, Ford of Europe, Fiat and PSA. Europe's approach to solving the overcapacity problem has been to manage the decline step by step rather than the sort of coordinated solution adopted by the U.S. to save Chrysler and General Motors from bankruptcy.

Closing plants in Europe is expensive because of high social costs, and is politically unpopular in a weak economy. Mass market carmakers will be forced to cost cuts for years to come and 4 or 5 more plants are expected to be closed in Europe. Even if a recovering market will help, the success or failure of new models, certain OEMs growth strategies and a not-increasing demand, will drive the closures of under-used plants; to good platform policies, decrease cost and put more value-added cars on the market.<sup>131</sup>

So we can affirm that, although generally each OEM has a own development strategy and there's a strong resistance to plants closures, there is an increase in productivity<sup>132</sup> resulting from the significant progress that the industry has made in terms of cost reduction and innovation of the methods and the management of technology, reducing the ratio of number of employees and produced car, making it ever more necessary to close plants.

□ *The closure of the Fiat plant in Termini Imerese at the end of 2011 is a case in point. Founded in 1970 with a workforce of about 1500 employees, increased to 3200 employees in the Eighties, fell back in the last period to 1900 units due to the repeated restructuring of the workforce, the factory was recognised as productive model: few workers with work organised in three shifts. Although this recognition received precisely by Marchionne, following the Fiat sales decline, the plant was felt not to be very competitive*

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<sup>131</sup> Cf. Clark Jennifer, 2014.

<sup>132</sup> Productivity is computed by dividing average output by the total costs incurred or resources (capital, energy, material, personnel) consumed in that period. Productivity is a critical determinant of cost efficiency.

*for the company: both for the transport costs of the assembly components of the cars from Northern Italy to Sicily and for the fact that producing only one model at a time, the system would remain closely linked in the calculation of the production to produced car's commercial success. In 2002, several hundred of employees were laid off and the labour struggles began: these struggles initially seemed to save the factory which then ceased the production in December of 2011<sup>133</sup>.*

Between 2005 and 2013, the reduction in the degree of capacity utilisation involved all the main European countries, except the United Kingdom. The number of cars produced per plant, calculated net of the luxury and sports car segments, increased only in the United Kingdom between 2004 and 2013. The main difficulties between the big manufacturers involve Fiat Chrysler and PSA-Citroën groups, because an excess of production capacity could remain in the medium term for Italy and France, less than a substantial increase in the international competitiveness of the two countries. In the next two years, however, the weakness of demand in Europe will not allow significant improvements in terms of unused capacity.

### **5.3 Demand Stagnation**

The decline in production in Europe had a negative impact on the sector at both the OEMs level and for suppliers even if the impact on the latter seems more attenuated than the one on the producers. The players and clusters that gravitate in the European area are being affected by the risks and opportunities linked to stagnant market volumes ('crisis level') in Western Europe. The paradox is that in a Europe where demand is stagnant, as shown in the graphs in the preceding pages, as it is easier to add capacity rather than to reduce it, to serve new markets (e.g. Serbia and Russia), manufacturers must open new plants struggling to close the obsolete ones. There is at the same time both an inevitable unused capacity<sup>134</sup> and a strong call of external investment by the production capacity in Eastern Europe, thus making the asymmetric Europe<sup>135</sup>.

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<sup>133</sup> Pellicelli also reflects the closure of the factory in Aulnay

<sup>134</sup> According to ACEA in the amount of 5 million units.

<sup>135</sup> Cf. Holweg, 2010

□ *Empowerment examples: opening of a Daewoo plant in Romania by Ford; upgrading of a Mercedes plant in Hungary; modernising Fiat plants in Serbia, forecasting to double Hyundai-Kia production capacity in the Czech Republic and Slovak; Russia is ready to collect new investment.*

Although the methods of production based on JIT and BTO have changed the way we produce, they have limited use: it does not change the way of selling based on forecasts disagree with the logic 'First Community, Second Business' proper of market-driven winners: acting competitively on price to affect sales, it is inevitable that the break-even points move upwards in relation to the volumes and that the high fixed costs of the industry (labour costs, depreciation and development costs) reduce margins in relation to the volumes and bury innovations and development and consequently also the demand.

#### **5.4 Demography**

Mobility becomes increasingly complex and the diversification of means of transport increases. Analysts predict that in coming years the car as a means of personal transportation will lose its importance in consideration of the increase in urban population. This trend 'from the possession to the use of transport means' should be managed in a proactive manner and to the benefit of businesses and workers. In some regions, the automotive clusters have become 'mobility cluster' thanks to the integration of railway systems, aviation, and even bicycle (especially the electric one (e-bike) and pedal assisted (pedelec)). Diversification of production helps to exploit the capacity of the plants to the maximum and in a constant manner even in times of crisis. This trend is particularly supported by the synergistic effects achieved in the field of innovation and technology. It is registered a slow growth of the population between 15-64 years suitable of driving; unlike the baby boomers, the Gen Y is more oriented to the connection that found in smartphones and other products and less oriented to the car market: they are not licensed and the smartphone is the new status symbol, they have less purchasing power and little independence because of a penalising labour market (high unemployment) and they face the rising fuel prices in a different way, the cars that last longer (cars in the European Union are on average 9.73 years old) justify the use of parents' ones. In some markets, specific laws also limit to drive powerful cars.

## 5.5 Market Fragmentation and Lack of a unique Regulation

It is a fragmented Europe composed of so many markets traveling at different speeds in terms of growth, production and sales, a Europe of different driving styles. There are many markets, with so many different laws: what is clear is that it serves a unique regulation. 'Europe lacks authority that decides for the entire industry; little or nothing has been done to reduce excess of production capacity'<sup>136</sup>.

What is needed is the improvement in the market conditions with the application of a set of rules having well-targeted and effective principles in terms of costs, such as the removal of tariff barriers and not to trade or the complete elimination of tariffs in free trade agreements, but also in terms of environment and safety<sup>137</sup>. The international harmonisation is essential to access to global markets and also the commercial and industrial policies must be closely coordinated in order to improve the competitiveness on world markets. A supportive regulatory framework that balances between environmental policies and competitiveness fosters growth, job, investment and the strength of the European economy. The industry is fully committed to facing the green challenges as sustainable mobility, use of recyclable materials and environment protection.

As it very often happens, new regulations are introduced before the old are consistently implemented, actions should be taken to alleviate this gap:

1. 'The EU institutions should apply the principles of 'Smart Regulation' set out in the CARS21 final report and re-iterated in the CARS 2020 Action Plan'. The crux of the matter is that 'robust impact assessments, cumulative impact studies and thorough 'competitiveness proofing' should be carried out systematically whenever proposals are drafted, significantly amended by the European Parliament and/or Council, or legislation is reviewed. New regulations should have a global potential and therefore should not restrict

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<sup>136</sup> See Rattner Steve, cit.

<sup>137</sup> Example of future proposal have been made regarding both environmental topic as Real Driving Emissions (RDE) and CO<sub>2</sub>, both safety policies as regulation 661/2009 or the World Light-Duty Test Procedure (WLTP).

sales opportunities to the EU only'<sup>138</sup> and not have a strong impact on supply chain;

2. regional and local authorities can take an active role and creating conditions to support enterprises in investment, with a range of financial support up to the creation of industrial and innovation parks.

## 5.6 Labour Market, Unemployment and Labour Unions

The European labour market has different costs and it is less flexible than the American market. The role of trade unions is very strong, especially in some countries like France and Italy, where Fiat has fought for years.

□ *As reported in the annual report of FCA: 'Labour laws and collective bargaining agreements with our labour unions could impact our ability to increase the efficiency of our operations. Substantially all of our production employees are represented by trade unions and are covered by collective bargaining agreements and/or are protected by applicable labour relations regulations that may restrict our ability to modify operations and reduce costs quickly in response to changes in market conditions. These and other provisions in our collective bargaining agreements may impede our ability to restructure our business successfully to compete more effectively, especially with those automakers whose employees are not represented by trade unions or are subject to less stringent regulations, which could have a material adverse effect on our financial condition and results of operations'.*

□ *Renault and trade unions signed an agreement in 2013 that has gone down in history of French labour negotiations: the workers have agreed to cut 7,500 jobs by 2016 and more hours of work (+ 6.5% and wages frozen for the current year) in exchange for guarantees from the second French automotive group not to close factories in France, allowing the company to find the means to restore competitiveness. In return, the second largest French carmaker committed to not close any of its five factories in the country for the next four years and to produce at least 710,000 vehicles a*

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<sup>138</sup> See ACEA, 2014, cit.

*year in the French territory until 2016. Last year, Renault produced almost 530,000 vehicles in France.*

□ *Different situation for the PSA Group whose relationship with the workers was quite cracked after the announcement in 2012 related to the intention of the Company to close an assembly plant in Paris and cut thousands of jobs.*

□ *In 2009, in the biggest Italian plants, Fiat produced 650,000 vehicles with 22,000 workers, while in Poland, in a unique plant, 6,100 workers produced 600,000 vehicles<sup>139</sup>.*

Depending on the cost of work per hour, Italy occupies an intermediate position between the 5 major European countries: the cost of the manufacturing industry is about 24 euro, more than in Spain and in the UK, but less than it is detected in Germany, where you get to 32 euros per hour, and France (29.7). A central location in the country arises also for the components and the bodywork, while referring to the production of motor vehicles the cost of an Italian worker is the most modest (24.4 euros), almost half of that of a German one<sup>140</sup>. Consequently, it emerges a fragmentation also in terms of substantial differences in the wages perceived that result in different average incomes and different buying powers.

The cost of labour is not the only relevant factor in employment to exercise a significant role in the choice of where to produce; professionalism and skilled labour are also other important elements and the flexibility degree of labour market is not to be ignored. The groups then prefer to mainly use plants outside the country of origin (with the exception of German groups), generally located in countries with lower labour costs, including European ones, highlighting further deep fragmentation in a declining Europe. Even the foreign players are not exempt from the appeal of flexibility and lower labour costs in Eastern Europe.

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<sup>139</sup> See Rattner Steve, 2014, cit.

<sup>140</sup> Cf. Unioncamere, 2013.

□ *A survey of Unione industriale di Torino shows that, in Slovakia, people work 78 hours more during the year with a labour cost in the amount of a quarter of the Italian one.*

□ *Hyundai and Kia produce in the European Union, respectively in Czech Republic and in Slovakia, where labour costs is clearly lower than in the Western Europe. In a continent like Europe, where unemployment is high, every foreign investment is welcome, albeit in perspective can be a threat to the domestic industry.*

## **5.7 R&D Expenditures and Innovation**

The ability of investment is synthesised by the ratio of operating cash flow (generated from ordinary management) and investments made. The difference, however, is the free cash flow which is available after the investment have been paid off. The operating cash flows are not only used to cover investment in plant and machinery, but also the incurred costs for investments and financial holdings, or to repay debts previously contracted. They are also crucial in determining the sustainability of the business plan.

□ *In 2013, FCA Group covered the investments that it had made with cash flows generated from operations.*

□ *PSA did not cover the investments because of insufficient cash flows deriving from negative results.*

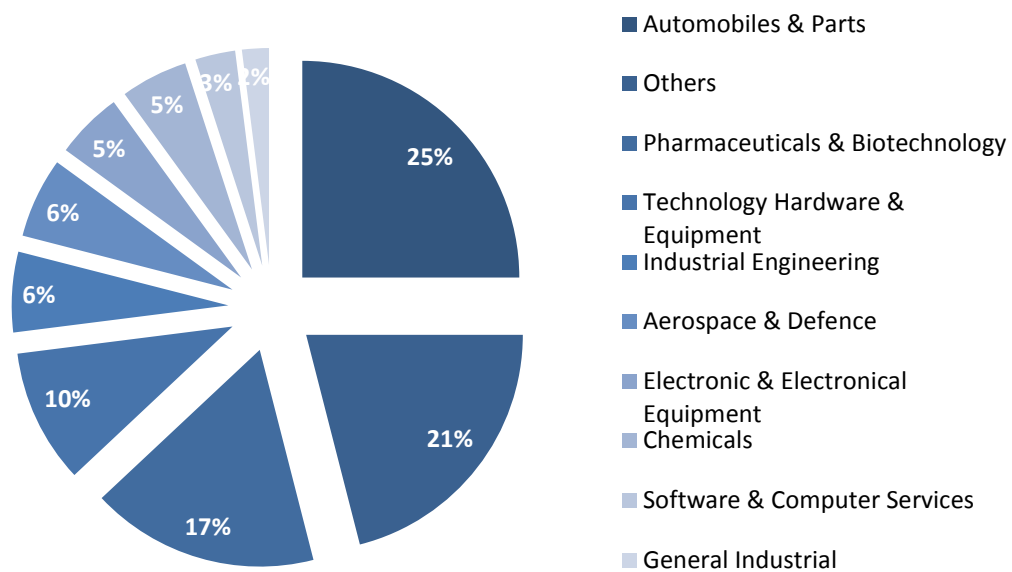
□ *Renault, instead, intended to cover the diminishing purchases of plants and equipment through operating flows.*

□ *In general, the German groups have a good capability to cover investments.*

The investments are considerable and therefore absorb the liquidity created by the current operations and leaving little margin to cover financial management. For this reason, expenditure on research and development (R&D) is a driver of competitive ability among the automotive groups. According to ACEA, European automotive industry invests in R&D, but not so much and so it loses the property of its

manufacturers which are bought by big groups (see Figure 17). Although, as shown in the chart below, the automotive industry is the leading investor, European player are not very competitive and innovative. The European Commission should have to elaborate a European initiative devoted to green vehicles<sup>141</sup> and should sustain EIB in facilitating financing access to small and mid-cap firms. The European Commission has rightly recognised that investments in research and development are central for the future of the European automotive industry.

Figure 17: R&D Shares of Sectors of Europe



Source: The 2014 EU Industrial R&D Investment Scoreboard European Commission.

A key role is played by SMEs, innovators in satellite activities: the European Commission in CARS 2020 paper refers to the sustaining of the EIB to facilitate financing to SMEs that need short-term loans and that continue to have great difficulty in accessing to finance. The red tape is still too high, the long-time of granting of any loan, but above all the low success rate of newly registered due to lacks of funding programs are the main obstacles, even in structural funds<sup>142</sup>. In a market in decline, European companies have lowered their investment in research and development both inside and outside. Employees involved in research and development are about 10% of

<sup>141</sup> Depth in the next paragraph.

<sup>142</sup> Cf. ACEA and Unioncamere, 2013.



the total. The downward trend was confirmed by French groups and initially by Daimler in 2010 and in the years to come, while BMW and Volkswagen have given new boost to their investments after 2010. FCA is the only group that has steadily increased, albeit simply, spending on R&D; the automaker states a widespread and less centralised structure (EMEA, NAFTA, LATAM and APAC), which comprises about 78 research and development sites -with a total of about 18,700 employees workforce- of which 35 located in Italy. The common denominator is the fact that all automotive groups, have opened (or plan to do so) at least one research centre in the high growth countries, China and Brazil first of all, to attract local talents, to know more closely the markets and to exploit technological traditions.

‘The concentration of production in a limited number of global platforms reinforces the international dimension of innovation in automotive: a car is built to meet the needs of a specific clientele, but it also incorporates the technology and the components used to produce other cars of the same platform’<sup>143</sup>.

## **5.8 False Environmental Focus**

The industry must address important issues such as reducing CO2 and pollutants emissions, noise pollution, road safety, alternative fuels and infrastructure development.

Close to sustainable materials and recycling, the EU Directive 2000/53/-CE dated September 18<sup>th</sup> 2000 established that, from 2015, the percentage of recovery of a vehicle must be at least 95% of its weight, allowing this way to reduce the consumption of resources thanks to recycling, as well as to reduce dependence on raw materials importers. This approach requires an analysis of the vehicle's life cycle that goes from the design phase to the phase of recycling and/or treatment for reuse, opening also great opportunities especially in the development of new sustainable materials and contributing to the achievement of the targets for reducing CO2 emissions set by Europe 2020 strategy. Considering that at the end of their life cycle, more than 75% of the vehicles end up in non-European regions, Europe is losing a great potential of resources and to produce new vehicles, it should use new raw materials, which increase the dependence on suppliers in Asia, losing de facto the ability to create new jobs. The goal

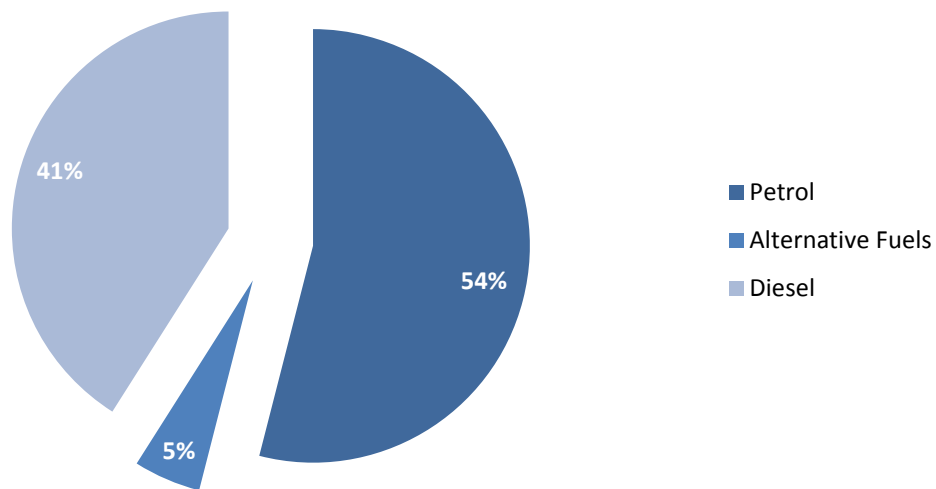
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<sup>143</sup> See Unioncamere, 2013, cit.

is to have a clear and unambiguous legislation on mandatory recycling and development of sustainable materials.

Much of the innovation activity of global automotive players is conveyed on reduction of CO<sub>2</sub> emissions and fuel efficiency, given the increasingly stringent and binding environmental standards. A recent survey of KPMG shows that OEMs around the world are focusing research on the reduction of internal combustion engines and on the development and refinement of those plug-in hybrids. As previously shown we must wait the arrival of 2020 and the following years, for the hybrid and electric engines to become the leading technology in the industry. Most cars on EU roads have an internal combustion engine: 54% of them are run by petrol and 41% by diesel. Only 5% of EU cars are using alternative fuels.

Figure 18: EU Passenger Car Fleet by Fuel Type (%/2014)



Source: ACEA, 2015. Pocket Guide 2015-2016. Alternative fuels include E85, CNG, LPG and hybrid gasoline.

Among the major European countries, patent activity for emissions reduction and fuel efficiency in the 2001-2011 decade has been more intense in Germany and France, while Italy, with 745 patent applications, holds the third position. The patent activity related to green technology has a little weight on the overall, most significant in Germany (3.1%) and France (2.1%), in the amount of 1.8% in Italy, equal to 1% in the

UK and less than 1% in Spain. If we look at the composition of patent applications for emissions reduction and fuel efficiency in the decade into consideration, despite the hybrid and electric power incidence is in general increasing, we see that the improvements of internal combustion engines continue to be prevailing. Incentives and interventions that support the renewal of the fleet in EU member States should be consistent, and innovative solutions as electric mobility could be advanced through public procurement. The EU has introduced rules to limit energy consumption and emissions into the atmosphere but has been overwhelmed recently by a scandal: after initial checks by the American authorities, the European leader Volkswagen has shown irregularities in emissions recalling millions cars sold in the world.

□ *As reported in the annual report of VW group, 'on September 18, 2015, the U.S. Environmental Protection Agency (EPA) publicly announced in a 'Notice of Violation' that irregularities in relation to nitrogen oxide (NO<sub>x</sub>) emissions had been discovered in emissions tests on certain vehicles with Volkswagen Group diesel engines. It has been alleged that we had used undisclosed engine management software installed in certain four-cylinder diesel engines used in certain 2009 to 2015 model year vehicles to circumvent NO<sub>x</sub> emissions testing regulations in the United States of America in order to comply with certification requirements. The US environmental authority of California - the California Air Resources Board (CARB) - announced its own enforcement investigation in this context. Following these announcements by EPA and CARB, authorities in various other jurisdictions world-wide commenced their own investigations. Volkswagen publicly admitted to irregularities on September 22, 2015. On November 2, 2015, the EPA issued another 'Notice of Violation' alleging that irregularities had also been discovered in the software installed in vehicles with V6 3.0l diesel engines. CARB also issued a letter announcing its own enforcement investigation in this context. In the course of the internal inquiries at Volkswagen, we also encountered evidence that irregularities in the determination of the CO<sub>2</sub> figures for vehicles' type approvals in the EU28 countries could initially not be ruled out. Volkswagen's reaction has been comprehensive and the Company is*

*working intensively to clarify the irregularities. To this end, Volkswagen ordered both internal inquiries and external investigations. (...) Around eleven millions vehicles worldwide were affected. (...) Technical solutions have been prepared for the three European variants of the type EA 189 engine affected. These solutions have been approved in principle by the German Kraftfahrtbundesamt (German Federal Motor Transport Authority) for Volkswagen AG and AUDI AG. The Group brands SEAT and ŠKODA also received approvals in principle each from their respective type approval authorities - the Ministry of Industry in Spain and the Vehicle Certification Agency in the United Kingdom. We are now working expeditiously to implement the technical solutions in order to ensure that all legal requirements are met in the EU28 member States. (...) In the course of the internal inquiries at Volkswagen of all diesel engines, we additionally found that initially we could not rule out irregularities in determining the CO2 figures for vehicle type approval in the EU28 member States. The CO2 levels, and thus also the fuel consumption figures, appeared to have been set too low in the case of some vehicle models during the CO2 certification process. On November 3, 2015, we informed the public that around 800,000 vehicles, primarily with diesel engines, could be affected. Our initial estimate put the economic risk at €2 billion. (...) As a result of the irregularities in the software used in certain diesel engines, provisions totalling €16.2 billion were recognised and charged to operating result, primarily for pending technical modifications, for repurchases, and customer-related measures as well as legal risks. The special items originally expected as a result of the CO2 issue have not materialised. We have therefore adjusted the Group's earnings targets accordingly, and have revised investment planning and intensified the ongoing efficiency program'.*

Among the EU objectives, are those of generating 20% of energy from renewable sources by 2020 and those of spread the energy efficiency and the creation of its infrastructure. The United States are currently advantaged in terms of energy costs because of the use of their shale oil sources; this determines that every year the

European industry invests €30 billion in American industry. The intensification and promotion of the use of processes and technologies for extraction (hydrogen) and storage (batteries) of electricity from renewable sources that allow you to remove the obstacle of the lack of autonomy of electric vehicles, it is a goal of Europe 2020 strategy.

Many car manufacturers (OEMs) are already working on fuel cell and hydrogen as an energy accumulator. However, the infrastructure for refuelling, or charging stations, is far from being widespread. The EU must collaborate to make joint efforts to enhance the use of alternative fuels and to create the necessary infrastructure (through quick and defined procedures), as well as in the relative legislative activity, it must consider the impact on the overall energy balance of the energy used to produce alternative fuels from renewable sources<sup>144</sup>.

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<sup>144</sup> Cf. Unioncamere, 2013.

## CONCLUSIONS

When a company reaches a certain level of growth and wants to continue in its development and in competitive value creation, it seeks to reach its objectives outside, concentrating or diversifying the business. Both strategies can be carried out internally or externally; the discriminant is in the availability of resources and competencies but also in the level of the demand of the origin industry. Globalisation plays an important role in this process, resizing competitive space and time (market-space management and time-based competition) enhancing intangible-assets. The global capitalism introduced indeed a new dimension of worldwide competition with complex dimensional growth developed and based on collaborative networks to face today hyper-competition and to reach flexibility and viable economies. From the beginning of 2010s and up to these years the network globalisation phase led to the primacy of knowledge management, to the worldwide localisation of production and to new policies of innovation and imitation that have been modified in opportunities for merger and acquisitions, global competitive alliances and joint ventures. As a result, the corporate competitiveness in global networks is constantly changing and is affected by expansion plans in order to achieve profit and growth; the development of hybrid sectors and the research of broader economies of scale. Networks are formed through competitive-strategic alliances in the equity or non-equity form, which are no free risks (probability of opportunistic behaviours of partner, wrong partner choice, incompatibility) and most of times are no succeeding. In such, competitive landscape the firm's success depends on the intensity of established relations: only market-driven companies able to manage a consistent and global portfolio of alliances can win in the competition.

The field of this research is the global automotive industry, that faced a very difficult crisis period 2008-2013 in which OEMs, suppliers and dealers have competed on product portfolio, innovation, solidity, brands, sales and marketing strategies. In general, the strategies these players have adopted converge towards: 1) production and sales of large volumes through modules and common platforms; 2) high cover of all the

segments, from low to high-end, with a consequent proliferation of models. The numbers of models increases while the volumes per models decreases, fighting the competition battle on costs and flexibility (lean production, modularity, common platforms); 3) cover different geographic markets, adapting offer to local needs (glocalisation process). The problem/opportunity for automotive companies operating in global over-supplied markets is represented by faster action and reaction times that undermine the reached and easy imitable competitive advantages. Despite the demand level is starting to recover after 2013, it is still far from 2007 levels. Therefore, there's a general excess of capacity deriving from underutilised production facilities and it is easy to say that the automotive industry have to face other difficult years. First of all, we have to consider the capital-intensive nature of the industry and its high fixed cost. Because of the high fixed costs, players register efficiencies when they reach high levels of production (product and process innovation are to support long-term growth, increasing the overall productivity of the system). Here the statement of Avvocato Agnelli and the nowadays FCA CEO Sergio Marchionne: after the crisis, in the mass-market only those who can reach more than 5.5 million cars can survive. According to 2015 OEMs' production ranking, the companies who respect this preview are: 1) Toyota Motor Corporation 10 million vehicles produced; 2) Volkswagen Group around 9.9 million; 3) the Renault-Nissan Alliance with a production of 8.2 million units; 4) Hyundai Motor Company producing 7.9 million vehicles 5) General Motors with 7.4 million units 6) and last Ford with 6.3 million units. The present situation doesn't couple with the preview of FCA's CEO, who said that on the market there will remain an American player, a French-Japanese company, a German firm, a Japanese OEM, a Chinese one and potentially a European actor. In the current competitive landscape, according to OICA there are 50 global players (see Appendix Table 16), most of them headquarters in emerging markets such as China and India. The potential growth and entry of those emerging OEMs is very high, because of the dimension of their internal markets, their law, their labour costs and their ability to reach economies of scale. Is it to say that until now they didn't generate companies able to compete with American, European and Japanese players (the Triad), but it is sure that they are waiting the right moment to follow the Japanese and Korean steps: they have already acquired dismissed

brands such as Jaguar, Land Rover and Volvo and it is not to be excluded that they will buy some participation in Triad firms. Apart from the abundance of Chinese and Indian companies' names, the ranking shows us an initial fulfilment of Agnelli's statement, or the concentration in few large groups that compete on the market with similar strategies and similar structures. The reduction of the number of players due to M&A operations is to blame to the increased competition that succumb the weakest firms. In the first 15 positions, we find the most famous global players that have carried out an intense activity of creation of competitive strategic alliances that has led them to have efficient network structures both horizontally and vertically: cooperation also helps to contain excess of supply and to surf the wave of technological convergence and hybrid sector development even in the more traditional industry as the automotive one. The consolidation process has been observed not only in OEMs business, but there is also a concentration in the business of suppliers, that comes up beside the vertical integration by car makers especially towards Tier-1 suppliers (e.g. Toyota and Denso Corp., FCA and Magneti Marelli, PSA and Faurecia). Pressure from car manufacturers on Tier-1 also went down to the waterfall on smaller suppliers (Tier 2 and Tier 3), causing the loss of independence or even leave the market. The consolidation of Tier-1 players is overturning the balance power between them and the manufacturer. In fact, Tier-1 are becoming more and more specialised, because they are involved in strong research and development processes and able to offer the same parts to different OEMs on the market (imitation processes).

Finally, the third part of the research has been dedicated to a case study in order to implement what has been analysed in Chapter two. I chose to study the European automotive industry as it has been a pioneer in the construction of cars but it is currently in a situation of decline: the national champions (PSA, Renault, Volkswagen and FCA) are generally suffering except in the premium segment (BMW and Daimler) and the hard 2008 crisis didn't save even Eastern Europe, traditional investment destination by foreign capital and not. I have identified 8 main causes to decline, that companies and institutions must address to make European automotive industry competitive again: impact of industry dynamics on profitability; excess of production capacity; demand



stagnation; demography; market fragmentation and lack of a unique regulation; labour market, unemployment and labour unions; R&D expenditures and innovation; false environmental focus.

This study is subject to limitations and evidences future research directions. The validity of the research should be further assessed by conducting more extensive qualitative and quantitative studies. First, the consolidation process will probably take several years, so the observation must be conducted constantly. Second, this work aims to study automotive industry as a whole, but it does not elaborate the dealers' business.

## APPENDIX

Table 16: World Motor Vehicle Production OICA correspondents survey. World Ranking of Manufacturers Year 2015

RANK	GROUP	TOTAL
1	TOYOTA	10,083,831
2	VOLKSWAGEN	9,872,424
3	HYUNDAI	7,988,479
4	GM	7,485,587
5	FORD	6,396,369
6	NISSAN	5,170,074
7	FIAT CHRYSLER	4,865,233
8	HONDA	4,543,838
9	SUZUKI	3,034,081
10	RENAULT	3,032,652
11	PSA	2,982,035
12	B.M.W.	2,279,503
13	SAIC	2,260,579
14	DAIMLER	2,134,645
15	MAZDA	1,540,576
16	CHANGAN	1,540,133
17	mitsubishi	1,218,853
18	DONGFENG MOTOR	1,209,296
19	BAIC	1,169,894
20	TATA	1,009,369
21	GEELY	999,802
22	FUJI	938,553
23	GREATWALL	869,592
24	ISUZU	669,284
25	ANHUI JAC AUTOMOTIVE	584,038
26	BRILLIANCE	562,308
27	CHERY	525,922
28	IRAN KHODRO	509,204
29	FAW	496,703

30	BYD	446,885
31	MAHINDRA	422,121
32	SAIPA	368,778
33	AVTOVAZ	307,890
34	HUNAN JIANGNAN	221,524
35	GUANGZHOU AUTO INDUSTRY	199,341
36	PACCAR TRUCK	152,589
37	CHINA NATIONAL HEAVY DUTY TRUCK	152,218
38	ASHOK LEYLAND	134,603
39	HAIMA CARS	111,878
40	PROTON	97,662
41	XIAMEN KING LONG	93,927
42	GAZ	83,408
43	SOUTH EAST (FUJIAN)	70,019
44	ZHENGHOU YUTONG	67,801
45	RONGCHENG HUATAI	66,119
46	NAVISTAR	65,101
47	SOLLERS	57,171
48	EICHER	46,701
49	CHENGDU DAYUN	40,422
50	UAZ	37,354

Source: OICA.net

**Table 17: Top 30 global OEM Parts Suppliers – Ranked by Sales of Original Equipment Parts in 2015**

	<b>COMPANY</b>	<b>TOTAL SALES</b> (DOLLARS IN MILLION)	<b>PRODUCTS</b>
<b>1</b>	ROBERT BOSCH GMBH	44,825e	Gasoline systems, diesel systems, chassis system controls, electrical drives, starter motors & generators, car multimedia, electronics, steering systems, battery technology, exhaust gas turbochargers & treatment systems, service solutions
<b>2</b>	DENSO CORP.	36,030fe	Thermal, powertrain control, electronic & electric systems; small motors, telecommunications
<b>3</b>	MAGNA INTERNATIONAL INC	32,134	Body, chassis, exterior, seating, powertrain, electronic, vision, closure & roof systems & modules
<b>4</b>	CONTINENTAL AG	31,450	Advanced driver assistance systems, electronic brakes, stability management systems, tires, foundation brakes, chassis systems, safety system electronics, telematics, powertrain electronics, interior modules, instrumentation, technical elastomers
<b>5</b>	ZF FRIEDRICHSHAFEN AG	29,518f	Transmissions, chassis components and systems, steering systems, clutches, dampers, active and passive safety systems
<b>6</b>	HYUNDAI MOBIS	26,262f	Chassis, cockpit and front-end modules; stability control steering, airbags, LED lamps, ASV parts, sensors, electronic control systems, hybrid car powertrains, parts & power

			control units
7	AISIN SEIKI CO.	25,904f	Body, brake & chassis systems, electronics, drivetrain and engine components
8	FAURECIA	22,967	Seating, emissions control technologies, interior systems, exterior components, modules & structural parts
9	JOHNSON CONTROLS INC.	20,071f	Complete automotive seats & seat components
10	LEAR CORP.	18,211	Seating & electrical distribution systems
11	VALEO SA	16,088e	Micro hybrid systems, electrical & electronic systems, thermal systems, transmissions, wiper systems, camera/sensor technology, security systems, interior controls
12	DELPHI AUTOMOTIVE	15,165	Mobile electronics; powertrain, safety, thermal, controls & security systems; electrical/electronic architecture, in-car entertainment technologies
13	YAZAKI CORP.	14,104e	Wiring harnesses, connectors, junction boxes, power distribution boxes, instrumentation, high voltage systems
14	SUMITOMO ELECTRIC INDUSTRIES	13,510fe	Electrical distribution systems, electronics, connection systems
15	JTEKT CORP.	11,670f	Bearings, steering systems, driveline systems and machine tools
16	THYSSENKRUPP AG	11,395f	Steering, dampers, springs & stabilizers, camshafts, forged machined components, bearings, undercarriage systems & components, axle assembly, assembled camshafts,

			<p>forged crankshafts &amp; drivetrain components, high-strength lightweight steels, electrical steel, tailored tempering, cell &amp; battery production lines, valve control systems</p>
<b>17</b>	MAHLE GMBH	11,339f	<p>Piston systems, cylinder components, valve train systems, air &amp; liquid management systems, vehicle climatisation, climate compressors, engine &amp; powertrain cooling, battery cooling, actuators, electric drives, starters &amp; alternators, electrical driven auxiliaries, powertrain engineering, services</p>
<b>18</b>	YANFENG AUTOMOTIVE TRIM SYSTEM CO.	11,242	<p>Interiors, exteriors, electronics, seating, safety</p>
<b>19</b>	BASF SE	10,613f	<p>Coatings, catalysts, engineering plastics, polyurethanes, chairman coolants, brake fluids, lubricants, battery materials</p>
<b>20</b>	CALSONICKANSEI CORP.	10,232fe	<p>Climate control, engine cooling &amp; exhaust systems; instrument clusters, console boxes, cockpit modules, instrument panels, front-end modules</p>
<b>21</b>	TOYOTA BOSHOKU CORP.	10,075fe	<p>Seats, door trim, carpet, headliners, oil &amp; air filters, door panels fabrics &amp; substrates</p>
<b>22</b>	SCHAEFFLER AG	9,990	<p>Anti-friction bearings, engine components chassis &amp; transmissions, wheel &amp; axle bearings, clutch &amp; transmission systems, dampers</p>
<b>23</b>	PANASONIC AUTOMOTIVE SYSTEMS	9,987fe	<p>Audio &amp; video equipment, cameras, video, premium audio systems,</p>

	Co.		navigation systems, compressors, batteries, motors, monitors, sensors, switches, HUDs
24	TOYODA GOSEI CO.	9,386fe	Safety, sealing & interior systems; optoelectronics, exterior trim, rubber/plastic functionals, fuel systems
25	AUTOLIVE INC.	9,170	Airbags, seat belts, safety electronics, steering wheels
26	HITACHI AUTOMOTIVE SYSTEMS	9,110 fe	Engine management, electric powertrain, drive control
27	GESTAMP	8,511	Metal components & assemblies, body-in-white, chassis and mechanisms
28	BORGWARNER INC.	8,023	Turbochargers, engine valve-timing systems, ignition systems, emissions systems, thermal systems, transmission-clutch systems, transmission control systems, torque management systems & rotating electric machines
29	HYUNDAI-WIA CORP.	7,480	Halfshafts, sideshafts, engines, manual transmissions/transaxles, transfer cases, power transfer units, chassis modules, axles
30	MAGNETI MARELLI S.P.A.	7,425f	Lighting, powertrain transmissions, electronics, suspensions systems, active & passive shock absorbers, exhaust systems, plastic parts

Source: Automotive News, Top 100 global OEM parts suppliers – Ranked by sales of original equipment parts in 2015 (e=estimate; f= fiscal yer; fe = fiscal year estimate).

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