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Katarina Presalovičová, Bsc

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Katarina Presalovičová Wien, 4.2.2016

ABSTRACT

Due to major environmental changes in today's world, the competition on the modern marketplace is dynamic and daring. The rate and complexity at which change occurs has increased significantly. Economic, social and political conditions are unstable and compound. Due to the complex economic situation new driving forces evolve demanding adaptations of strategic approaches and constant alterations of strategies. Among these influential factors are technological change, environmental uncertainty, alterations of customer needs and many more. These factors have a great impact on the industry, therefore understanding and having knowledge of them is crucial.

The European Steel Industry finds itself in a difficult situation. Currently, the industry is facing many threats including fierce competition from China and other regions, overcapacity, rising ecological pressure and environmental legislature, deficiencies in energy markets and other. Due to the before mentioned threats, the industry has to constantly adapt itself in order to maintain competitive.

The research findings indicate that the situation the European Steel Industry is facing are rather serious and cannot be ignored. The research further indicates that the major threat that the European Steel Industry is facing is the rivalry from China with cheap dumping prices. However, Chinese competition is not the only threat. To keep its competitive edge on the global market requires taking action and strategic steps. The competitive strategies have to be constantly adapted to the altering environment.

The course of the thesis works out six strategic suggestions for steel producers where focus of the steel producers should lie and where action has to be taken.

ABSTRAKT

Aufgrund der umfangreichen Veränderungen der Umwelt in der heutigen Welt ist der Wettbewerb auf dem modernen Markt dynamisch und gewagt. Die Geschwindigkeit und Komplexität, bei der Änderungen auftreten hat sich deutlich erhöht. Die wirtschaftlichen, sozialen und politischen Verhältnisse sind instabil und sehr komplex. Aufgrund der komplexen wirtschaftlichen Situation werden neue Antriebskräfte entwickelt welche

anspruchsvolle Anpassungen der strategischen Ansätze und ständige Veränderungen der Strategien erfordern. Zu diesen Einflussfaktoren zählt der technologische Wandel, Unsicherheit der Umwelt, Veränderungen der Kundenbedürfnisse und vieles mehr. Kenntnisse und Verständnis dieser Faktoren sind entscheidend weil sie einen großen Einfluss auf die Branche haben.

Die europäische Stahlindustrie befindet sich in einer schwierigen Situation. Derzeit ist die Branche von zahlreichen Bedrohungen wie starker Konkurrenz aus China und anderen Regionen, Überkapazitäten, steigendem ökologischen Druck, Mängel in den Energiemärkten und anderen gefährdet. Aufgrund der erwähnten Bedrohungen, muss sich die Industrie ständig anpassen um wettbewerbsfähig zu bleiben.

Die Forschungsergebnisse zeigen, dass die Situation der europäischen Stahlindustrie nicht ignoriert werden kann. Die Forschung zeigt weiter, dass die größte Gefahr, mit der die europäische Stahlindustrie konfrontiert ist die Konkurrenz aus China mit billigen Dumpingpreisen ist. Allerdings ist die chinesische Konkurrenz nicht die einzige Bedrohung. Diverse Maßnahmen und strategische Schritte sind erforderlich um den Wettbewerbsvorteil auf dem Weltmarkt beizubehalten.

Der Verlauf der Masterarbeit erarbeitet sechs strategische Vorschläge für Stahlhersteller, wo der Fokus der Stahlhersteller liegen sollte und wo Maßnahmen ergriffen werden müssen.

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List of Abbreviations

BRIC	Brazil, Russia, India and China
CIS	Commonwealth of Independent States
CSN	Companhia Siderurgia Nacional
CSR	Corporate Social Responsibility
EBITDA	Earnings before interest, tax, depreciation and amortization
ECB	European Central Bank
Etc.	etcetera
ESTEP	European Steel Technology Platform
EU	European Union
GDP	Gross domestic product
i.e.	that is
NAFTA	North American Free Trade Agreement
OECD	Organization for economic co-operation and development
OMC	Organização Mundial do Comércio
PEST	Political, Economic, Social, Technological
R&D	Research and Development
QE	Quantitative Easing
ROW	Rest of the world
SWOT	Strenghts, Weaknesses, Opportunities,Threats
US	United States
WTO	World Trade Organisation

1. Introduction

Identifying and formulating strategic attitudes also named business strategies has been a traditional research field of Business Administration. Over the years, many researchers have been defining the term "strategy". As the terminology progresses and many academics dedicate their work to identifying and analyzing strategy and strategic attitudes in the business environment, it is challenging to concentrate merely on one definition.

A prosperous business strategy decides upon the continued existence and future development of the company. Companies necessitate a strategy *"to give direction and purpose, to deploy resources in the most effective manner and to coordinate decisions made by different individuals."* (Grant, R. M. & Jordan, J. J., 2012, p. 8)

In the 1960's when the environment was rather unchanging and steady it was satisfactory for companies to aim attempts towards long term objectives and arranging to accomplish them. (Ansoff, 1965, p. 23) Yet, environmental circumstances have changed. Competition in today's modern marketplace is dynamic and daring. It is well known that today, the rate at which change happens has increased significantly. Although the environment had always been changing and will continue to change, what distinguished the contemporary stage from the preceding stage is the tempo and the complexity of environmental change. Economic, social and political situations have gotten more compound and dynamic. From the 1990's uneven and quickly increasing change characterizes the environmental progress. Depending on the economic situation, new driving forces evolve, which require new strategic approaches and lead to new strategic positions. Each company has to consider certain aspects to be able to structure and form the most efficient competitive behavior. These influential factors include technological change, environmental uncertainty, alterations of customers´ needs, and many more (Dagnino, 2012, p. 21). They can have a great impact on the industry, therefore understanding and having knowledge of them is crucial. Due to the constantly changing economic situation, companies are often forced to modify their strategies, i.e. create a new source of competitive advantage. The challenge is to maintain the competitive advantage over time.

Over the years, mostly after the acceptance of the liberalization policies all over the world, the Steel industry has experienced a rapid growth. Deregulations, globalization and digitalization have led to an intense competition, higher complexity of customer needs and dissemination of corporate networks. The boom in the steel industry, which was mainly caused by

development projects, has caused the production in 2014 to reach the level of 1,665 million metric tons out of which approximately one third falls on 15 global corporations (Worldsteel Association, 2014). Europe is considered to be the second largest producer after China; however the chances of growing of the developing markets, particularly BRIC countries (Brazil, Russia, India, China) markets, will in the long run affect the structure, persistence and success of each steel producer.

1.1. Objectives of the Thesis

The thesis analyzes and delivers an insight into the Global Steel Industry on a strategic level. The main objective is to propose strategic decisions for the development and maintenance of competitiveness of the European Steel Industry. Therefore the main research question to be answered is:

"What are the possible strategic options for European Steel Industry in order to stay competitive and successful?"

Besides the main research questions more precise sub questions are to be answered throughout the thesis:

"How can the European Steel Industry exploit its strengths and use its opportunities?"
"How can the European Steel Industry improve its weaknesses and threats?"

The thesis furthermore contains a global outlook where a competitor analysis is made. The competitor analysis examines the biggest rivals of the European Steel Industry, their strengths, weaknesses as well as their opportunities and threats. The following questions are answered:

"What strengths, weaknesses, opportunities and threats do the competitors of the European Steel industry have?"

Throughout the thesis, the above stated research question will be answered and explained in more detail. Various studies from Business Management will be used to examine the critical issues regarding a companies' ability to succeed in todays' competitive environment.

1.2. Structure of the Thesis

The thesis is divided into a theoretical part and a case study. The first part comprises the theoretical foundation of the Master Thesis. The theoretical part includes a short introduction and main aspects of the steel industry. Following, definitions and strategy studies are presented. After the theoretical part, the thesis resumes with the practical part.
In the practical part the aspects of the European Steel Industry are presented. Afterwards a SWOT analysis is made and the possible strategic options are analyzed. A global outlook of the steel industry is given and chosen competitors of the European steel industry are presented as well as analyzed through a SWOT analysis. The thesis resumes with a conclusion, where the answers to the main research question as well as the sub questions are summarized.

1.3. Methodology

In this Master Thesis both primary and secondary data are assembled. The secondary data has been critically assessed and selectively gathered from applicable and relevant sources i.e. literature, databanks, internet sources etc. Primary data on the other hand is collected through semi-structured qualitative interviews with industry experts.

2. The steel sector

In order to analyze and discuss strategies for a business operating in the steel industry, the key aspects of the steel industry will be presented at this point.

2.1. Key aspects of the steel industry

Today's world is dependent on steel as it is necessary for our daily life. Steel is considered as the most important substance in engineering and construction. Everything we use either contains steel or has been made using steel. Houses, chemicals, cars or food all depend at some point on steel.

In today´s world, steel is considered as a main driver of worldwide economy:

- The manufacturing of steel employs over 2 million people worldwide
- The average use of steel per capita has grown from 150 kg in the year 2001 to 217 kg in the year 2014 (Worldsteel Association, 2015).
- Steel is the key product supplier to automotive, building, electronics, mechanical and electrical engineering (Worldsteel Association).
- World's production of crude steel has risen from 851 (2001) megatons to 1,665 (2014) megatons (Worldsteel Association, 2015).
- It is expected that by 2050 the world's steel use will be 1.5 times higher than the present level (Worldsteel Association).

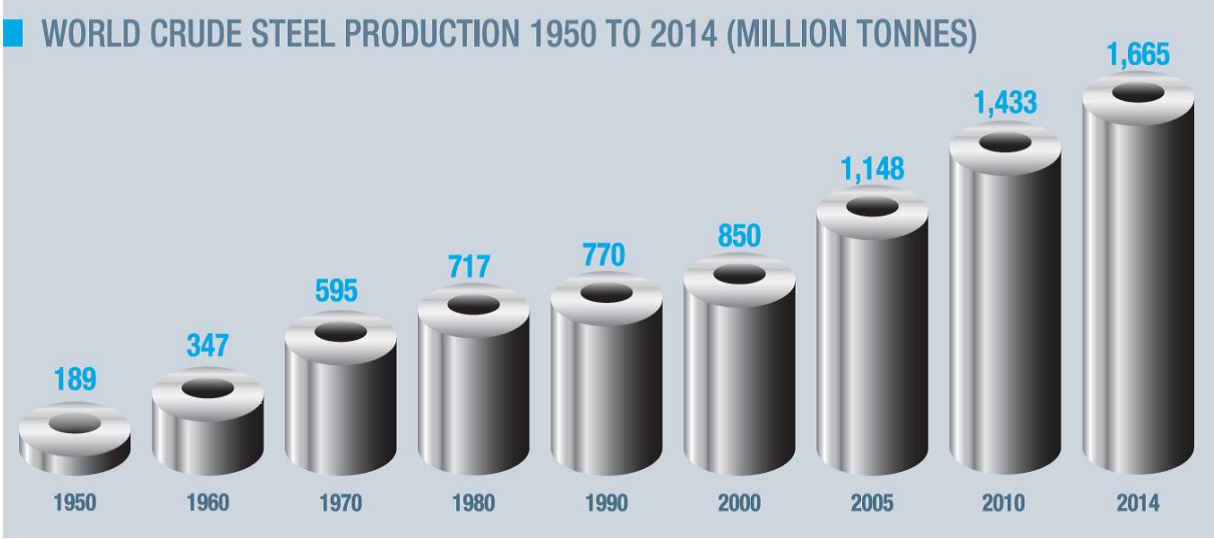

Figure 1: The world's production of crude steel 1950 – 2014 (megatones)
Source: https://www.worldsteel.org/dms/internetDocumentList/downloads/publications/WSA01-10-WSIF-infographic-2015-outline/document/WSA01-10%20WSIF%20infographic%202015%20outline.pdf
Date of retrieving: 20.9.2015

Steel is an fundamental substance, essential to us in daily lives. It consistently alters our communities by enabling infrastructure such as houses, railways, energy production and other. Throughout numerous commodities it touches every aspect of our life and is present in the daily existence globally:

- The building and housing segment is the biggest consumer of steel, spending about 50% of worldwide steel production.

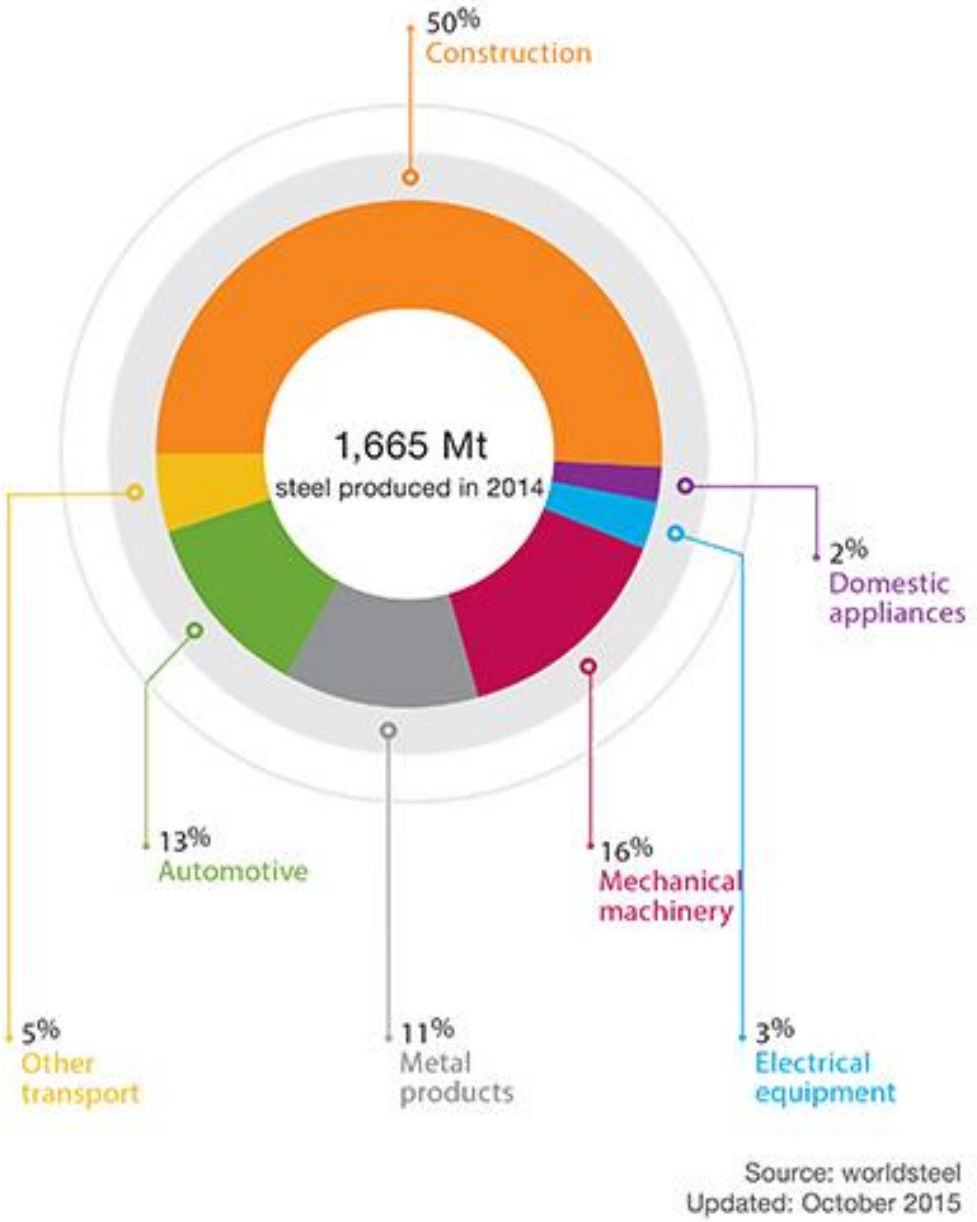

Figure 2: The Consumers of Steel by segment
Source: http://www.worldsteel.org/steel-by-topic/sustainable-steel.html
Date of retrieving: 14.11.2015

- Steel takes up around 25% of a regular personal computer. Each year, around 300 million computers are sold.
- Yearly, around 200 billion cans are made out of steel. There is no need to refrigerate steel cans which means that steel cans help to save energy.
- Steel cares for our wellbeing. The exterior surface of steel is sanitary and hygienic. (Worldsteel Association, 2015).

Aside from being an indispensible substance, it is considered a sustainable material:

- Steel can be recycled. It can be reused ceaselessly which spares energy and raw materials, decreases CO2 emissions and lowers the waste made from raw materials extraction.
- In the last 50 years, the quantity of energy necessary to manufacture one ton of steel has been decreased by 60%.
- Steel is the key substance utilized in providing renewable energy - solar, tidal and wind.
- Looking at the segments, the percentage of worldwide steel recycling is estimated to be 90% in the machinery segment, 85% in the construction sector, 85% in the automotive sector and 50% for domestic appliances and electrical equipment. This makes a world average of around 83% (Worldsteel Association, 2015).

2.2. Development of the Steel Industry

The steel industry is a booming and competitive industry in the whole world. In the last decade and a half the world experienced a great growth in the steel industry. The biggest growth in the steel industry took place between the years 1960 and 1974 when the world's consumption of steel jumped to the double (Worldsteel Association, 2012, p. 22). In between these years, the growth rate of the steel industry has been noted to be 5, 5%. From the year 1975 until 2001 a phase of stagnation occurred. Due to low global demand and sporadically high energy costs, the growth rate in steel production was in this period just 0, 6% and the prices of steel dropped 2-3% per year.

As seen on the graph below, from the year 2000 onward a substantial increase in the global production of crude steel occurred. This was mainly driven by the economic growth and growth in Chinese steel demand (OECD, 2015).

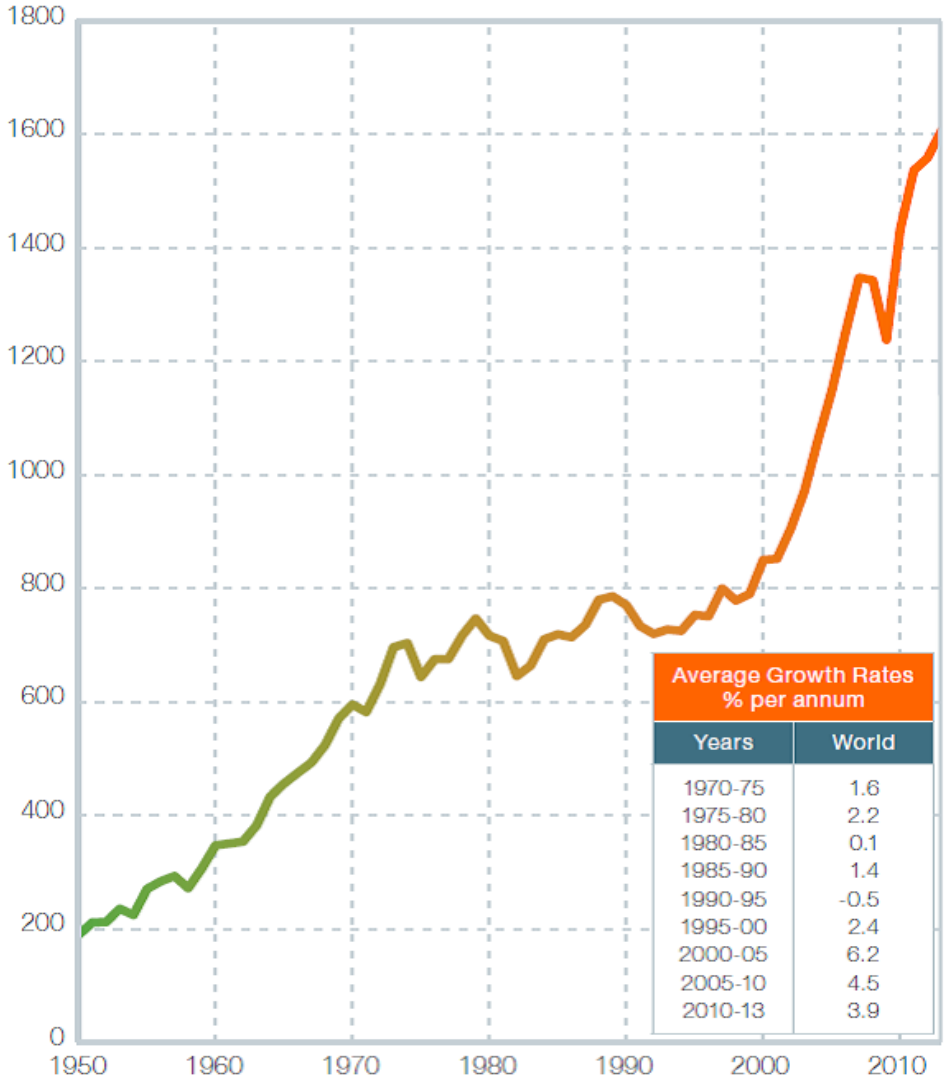

Figure 3: Growth of the production of crude steel
Source: https://www.worldsteel.org/dms/internetDocumentList/bookshop/World-Steel-in-Figures-2014/document/World%20Steel%20in%20Figures%202014%20Final.pdf
Date of retrieving: 15.6.2015

From the 1960s to the late 80s the steel market used to be control and dominated by the OECD (Organization for Economic Cooperation and Development) nations. However, when developing countries like China, India and South Korea emerged, the market share of OECD nations decreased (OECD, 2015).

2.3. The biggest players in the Steel Industry

As of the year 2014 the biggest players in the global Industry are shown in the picture below. China with a production of 822,7 which represents about 49% of total steel production

represents the top steel producing country, followed by Japan, the USA and India. Europe combined with 12 % share of global production takes second place after China. Compared to the year 2013 not many changes in the top steel producing countries occurred. However, considering the future it is claimed that India which takes 4th place in the year 2014 might outpace USA which occupies 3rd place in the year 2014. Nevertheless, due to the constantly changing conditions as regarding politics, environment, economy and technology it is no reliable forecasts and estimations can be made regarding this claim.

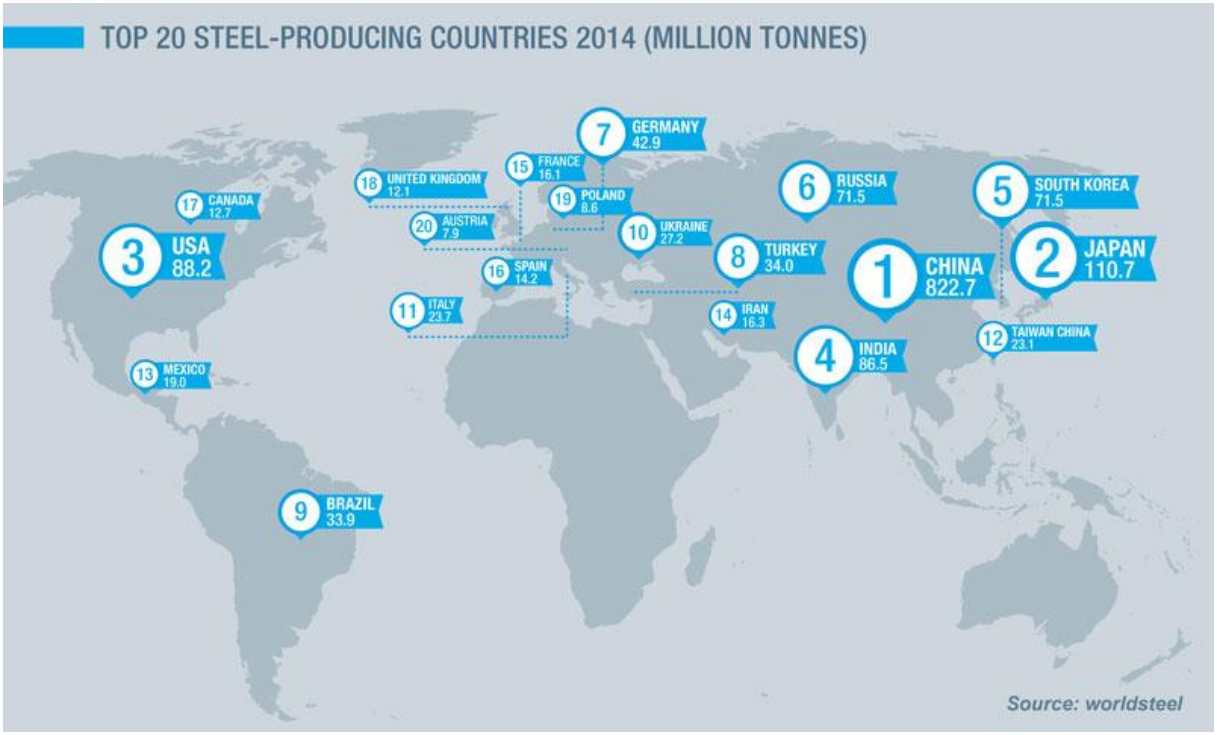

Figure 4: Top 20 Steel producing countries 2014
Source: https://www.worldsteel.org/dms/internetDocumentList/downloads/publications/WSA01-10-WSIF-infographic-2015-outline/document/WSA01-10%20WSIF%20infographic%202015%20outline.pdf
Date of retrieving: 15.6.2015

Although today steel is generated and used on each continent, one third of total production falls upon only 15 global corporations. The steel industry is like no other sector significantly affected by the upheavals and trends. Geopolitical processes, increasing scarcity of resources, the redistribution of the weights in the global economy, climate change, demographic changes and technology changes have immediate and serious impact on the development of the industry. Therefore, the industry is under pressure to set up their processes and structures in a flexible and adaptive way. By this means, a quick adjustment to the changes in the market environment will be possible.

The following figure below represents the global production of crude steel in year 2004 and year 2014.

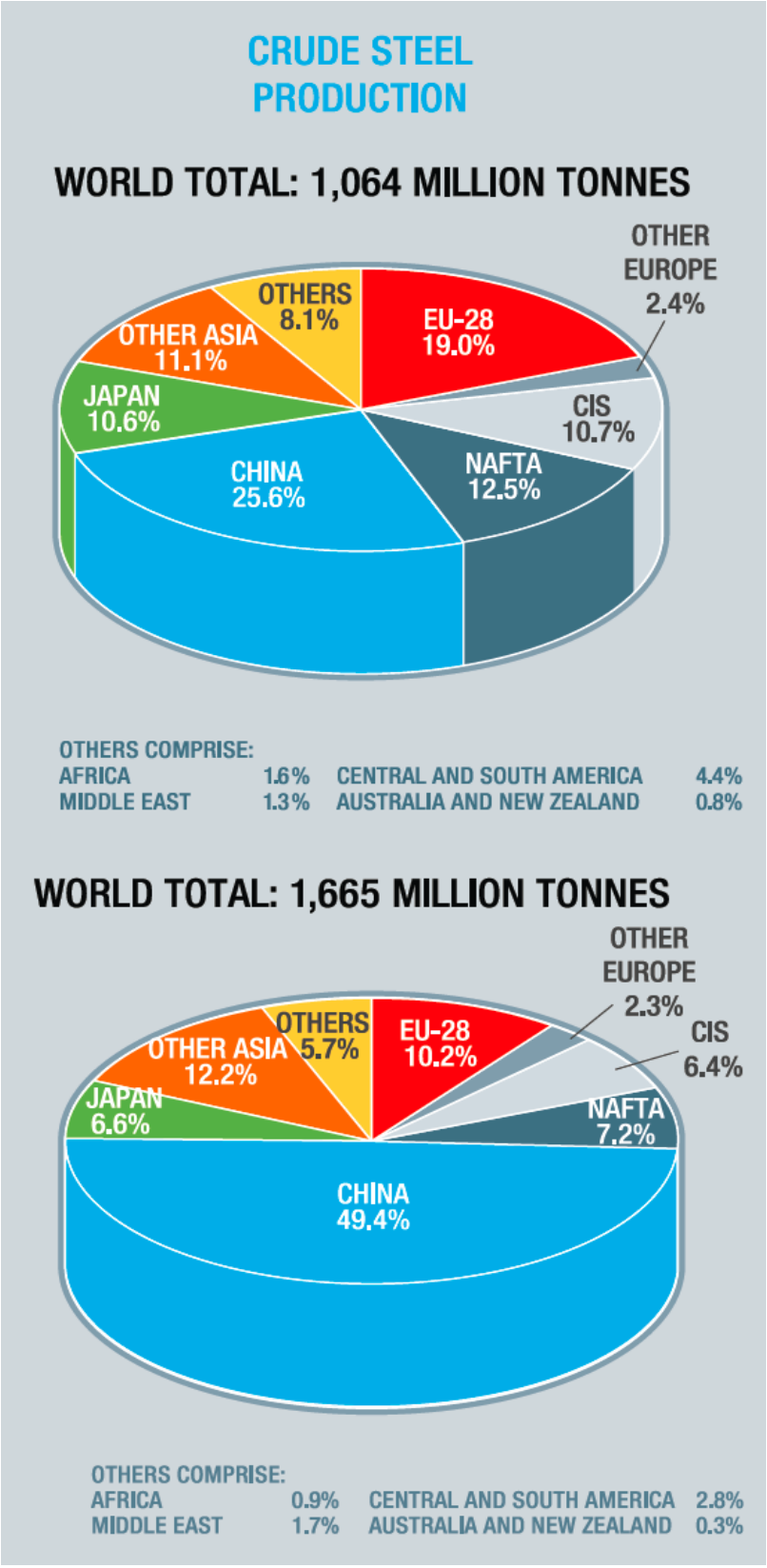

Figure 5: Steel production: Geographical distribution in 2004 and 2014

Source: https://www.worldsteel.org/dms/internetDocumentList/bookshop/2015/World-Steel-in-Figures-2015/document/World%20Steel%20in%20Figures%202015.pdf
Date of retrieving: 12.6.2015

Looking at the two figures above, we can see that China's production of crude steel doubled. On the other hand, Europe's production declined by almost 9 %. This was caused by the crisis of 2008 and the resulting demand decline as well as closures of steel mills. Other regions didn't experience such significant changes as China and its production boom.

3. Theoretical Background

After shortly introducing the steel industry the thesis resumes with the theory on competitive strategy. In order to fully understand the concept of strategy, in the following theoretical part the different studies of strategies will be demonstrated.

3.1. Early strategy studies

The actual dispersion of the strategy concept into business administration first occurred in the United States and only later in the German-speaking area (Welge, M. , Al-Laham, A., 2008, p. 14). In the 1960s modern business strategy became a field of study and practice. Before that, the terms strategy and competition hardly showed in the management literature.
In the next chapter I provide a review of the early strategy studies. The aim is to see how the concept of strategy developed over years in order to fully understand and see the best known theories that were established by researchers.

3.1.1. Chandler's 'Structure Follows Strategy' thesis

The thought of Alfred Chandler 'structure follows strategy' is one of the best-known organizational ideas in business. Chandler claims that *"unless structure follows strategy, inefficiency results"* (Chandler, 1962, p. 314). Chandler made this observation between 1850 and 1920 while researching into detail the development of US companies like General Motors, Du Pont, Standard Oil and Sears (Chandler, 1962, p. 20). Throughout his research, it became clear that alterations of the corporation's strategy lead to changes in organization's

structure. In other words, the structure of the organization is driven by the pressure and request of the market. In his book, Chandler tracks the development of multidivisional (decentralized) kind of organizations. From the detailed case studies of du Pont, General Motors, Standard Oil and Sears it is visible that with the increase in demand companies started to offer greater product lines (Johnson,G. et al, 2008, p. 466). Eventually, the form of the structure of the organization also had to be adjusted. Diversified products meant efficient distribution of resources, cooperation between divisions and liability for performing. Thus, the new structures were distinguished by independent integrated functional departments with supervisors that had the power to make daily decisions. The departments were arranged, controlled and coordinated by a general office (Johnson, G. et al, 2008, p. 467).
To sum up, according to Chandler's theory, structure follows strategy, where strategy represents the development and growth of the organization, and structure is the model or design of the organization which manages the organization (Chandler, 1962).

3.1.2. Mile's and Snow's 4 strategic types

After Chandler's structure and strategy theory in the 60s, another theory on strategy was developed by Miles and Snows (1978). Miles and Snows differentiate between 4 strategy types:

- **'**defender strategy'
- 'prospector strategy'
- 'analyzer strategy'
- 'reactor strategy'

The Defenders ignore the trends and developments outside their market and seek stability. Organizations that operate with the defender strategy usually have a narrow product line and operate in a niche market. They seek inner efficiency whilst trying to increase the quality and price of products and services. Since their focus lies inwards, they take no notice of changes happening outside of their marketplace. The structure of the organizations pursuing defender strategy is centralized, meaning that the power is in the hand of the senior management. Horizontal differentiation and communication hierarchy are also main elements of the defender strategy.

The prospector strategy is the opposite of a defender strategy. Prospectors search for new products and market opportunities. Their focus lies on innovations as they try to be the first

on the market with new products. Their performance depends on evolution, trends, environmental factors and events. In order to react quickly to the changes in environment, the structure has to be flexible. As a result, control is not centralized and task specialization is low.

Analyzers are between the defenders and prospectors. "*A true analyzer is an organization that minimizes risk while maximizing the opportunity for profit… (it) combines the strength of both the Prospector and the Defender into a single system"* (Miles, R. E. & Snow, Ch. C., 1978, p. 68). Analyzers take well-positioned and successful ideas from Prospectors and handle theirs markets like Defenders. Because Analyzers imitate the products of Prospectors their profit is lower. On the other hand, the risk carried by the Analyzers is smaller, therefore it can be said that they are more efficient. This structure involves both, flexibility and stability. In a stable environment, Analyzers work as efficiently as they can. However, when operating in an unstable and changing environment Analyzers watch their competitors and imitate their products. The aim is use chances in new markets and products whilst sustaining a basis of traditional products.

The reactor strategy is an unfortunate strategy. If the three above mentioned strategies are implemented incorrectly, the reactor strategy occurs. Companies find themselves as Reactors when: "(1) *management fails to articulate a viable organizational strategy;*

> *(2) a strategy is articulated but technology, structure, and process are not linked to it in an appropriate manner;*
>
> *(3) or management adheres to a particular strategy – structure relationship even though it is no longer relevant to environmental conditions"* (Miles, R. E. & Snow, C. C., 1978, p. 82).

The table below presents the 4 strategic types introduced by Miles and Snow with its main characteristics; in which environment they operate, what is the strategic approach and resource strategy.

Four strategic types and their approaches to strategy

	Strategic environment	Strategic approach	Resource strategy	Simplified process approach
Defender	Stable	Protect market share Hold current position	Efficient production Tight control Centralised Manage via rules	Prescriptive
Analyser	Slow change	Hold market share but with some innovation Seek market opportunities but protect existing areas	Efficient production but some flexibility in new areas Tight control in existing areas but lower control in new products	Prescriptive
Prospector	Growing, even, dynamic	Find new opportunities Exploit and take risks	Flexible production Innovate with decentralised control	Emergent
Reactor	Growing or slow	Responding only to others Often late and inadequate	Muddled, centralised Slow	Prescriptive

Table 1: Miles and Snow's Typology
Source: http://savingprivatemoney.com/business-strategy/
Date of retrieving: 27.5.2015

3.1.3. Porter´s competitive strategy

With the publishing of Porter´s widely accepted book *Competitive Advantage* in the 80´s a new school of theory developed. It was Porter that first came with the idea of competitive advantage and his theory of competitive strategy became one of the most important in business management. According to Porter, companies can gain a competitive advantage once the markets have been analyzed and new chances have been recognized (Dagnino, 2012, p. 24).

The three generic competitive strategies have been broadly recognized as the source of competitive advantage. Porter claims in his model, that for a company only two ways to generate a competitive advantage are existent: differentiation and cost advantage. Within these two strategies, the company can also pursue the focus strategy.

Cost leadership

The aim of cost leaders is to offer a product for the lowest price. Mostly, the price can be lowered by economies of scale, by suppliers and channels control and by efficiency. Usually,

big companies that produce a huge volume can sell the products for a lower price than their smaller competitors (Porter M. E., 2004, p. 24). To attain cost leadership usually entails a relatively high market share or different advantages vis a vis competitors, for example fortunate access to raw materials. Once accomplished, high margins which are reached through the low cost position can be spend on new tools and equipment as well as modern amenities in order to preserve the cost leadership (Porter M. E., 2004, p. 24).

Differentiation

If a cost leadership is out of option the company can offer better or more wanted products. According to Porter, the second generic strategy Differentiation is about "*creating something that is perceived industry wide as being unique"* (Porter M. E., 2004, p. 37). Many customers are willing to pay more money in order to get a better or more quality product. Thus, some companies use more expensive material or focus on a unique design in order to compete with those companies who sell for a lower price. Methods of differentiating can take different forms e.g. differentiation can be accomplished through technology, features, design or brand image, customer service, dealer network or other aspects. Preferably, the company uses not only one way of differentiation, but differentiates itself in many facets. Costs are not the main strategic goal in the differentiation strategy however they are not to be disregarded. (Porter M. E., 2004, p. 27).

Focus

This generic strategy is about concentrating on a specific consumer group, sector of the product line or geographical coverage (Porter M. E., 2004, p. 27). This strategy rests upon the presupposition that if focusing on a more narrow target market, the firm is able to serve its target market more efficiently than its competition which aims for a broader target market.. However, a company pursuing the focus strategy will only be successful if there are segment-specific needs in the industry, which major providers cannot or don't want to satisfy. Companies can create value for customers in a small market segment by focusing either on costs or differentiation. It is important that the segment specific needs exist, and that these specialized companies have the skills to fulfill those needs.

Michael Porter sees cost leadership and differentiation as strategies that exclude each other and fears that combining these two strategies will lead you to be "stuck in the middle".

"The firm stuck in the middle is almost guaranteed low profitability. It either loses high-volume customers who demand low prices or must bid away its profits to get this business from the low cost- cost firm. Yet it also loses high-margin business – the cream – to the firms who are focused on high-margin targets to have achieved differentiation overall. The firm that is stuck in the middle also probably suffers from a blurred corporate culture and a conflicting set of organizational arrangements and motivation system" (Porter M. E., 1985, p. 24).

Below we can see a graphical illustration of Porter's competitive strategy theory. According to the focus of the strategic advantage and the strategic target companies follow either a differentiation strategy or a cost leadership strategy. If the target is a particular segment instead of the whole industry, a focus strategy is pursued. Stuck in the middle are those organizations which fail to define their strategy and try to simultaneously cost leadership and differentiation.

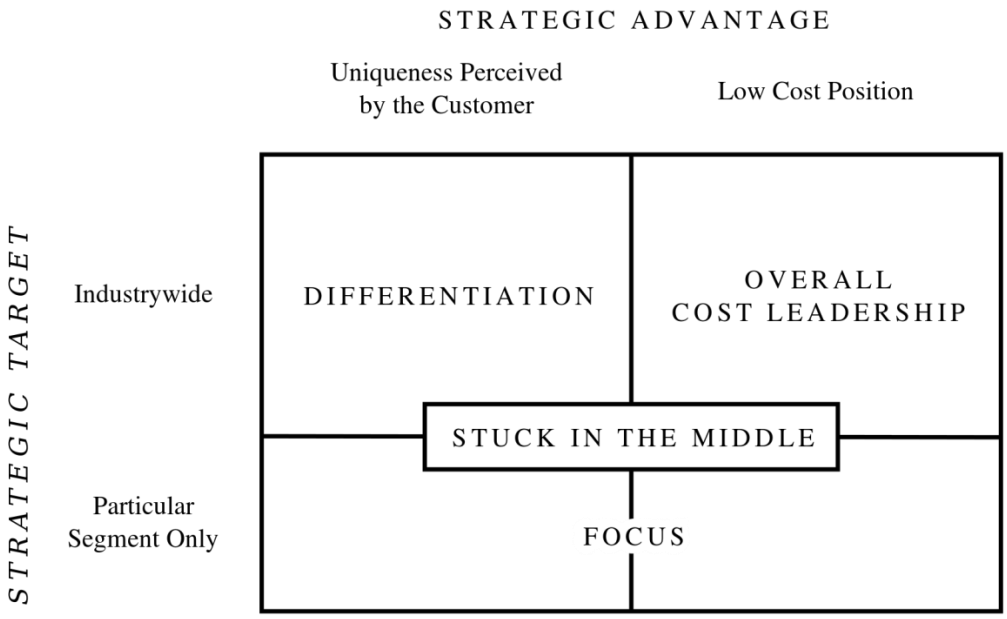

Figure 7: Porter's generic strategies
Source: Adapted from Competitive Strategy: Techniques for Analyzing Industries and Competitors, Porter M. E. (2004)

Cost leadership means that the competitive advantage is reached by low costs. The market share is crucial, because market leaders can profit from Economies of Scale and experience curve effects benefit. The product is standardized and produced for the mass market. The company must function as a well-oiled machine to avoid inefficiencies. For this reason, the organizational structure is rather formal and standardized. The prevailing values are cost awareness, efficiency and low risk tolerance. The executives use a top down approach and maintain authority to run the processes smoothly and steady.

Differentiation, on the other hand, needs almost contrary skills and business features. The product has to be of perfect quality and/ or has a unique brand image; otherwise the customers will not be willing to pay the price for the product. To accomplish this benefit, the company must be customer focused, innovative and be capable to manage the brand. To satisfy the always changing needs of the customers a flexible structure of the company is necessary. A company that uses the differentiation strategy is flexible, experiment-friendly and a risk taker. The executives are visionaries and include their staff in the decision-making. They encourage them to be innovative and to generate new ideas.

The choice of the generic strategy has long term consequences and is usually irreversible. The strategy has to suit to the strengths of the company and must be rethought precisely.

	Cost leadership	**Differentiation**
Purpose	Low costs Market share	Differentiation Innovation, Premium-price
Offer	Standardized,	Widely developed, high Quality, brand product
Critical tasks	Work flow, Efficiency Process improvement	Customer orientation Product innovation, brand management
Organizational structure	Formal, Standardized	Flexible,
Organizational culture	Efficiency Low risk, price consciousness	Risk tolerance, flexibility, experiments
Role of leader	Authoritative	Visionary

Table 2: Differences between cost leadership and differentiation
Source: Adapted from: Strategisches Management, Konzepte und Methoden, Matzler et al., 2011

Competitive Advantage

Porter's generic strategies which are defined above make it possible for a firm to reach a competitive advantage. Obtaining a competitive advantage is the main goal to prosper in a competitive marketplace. Porter says that "competitive advantage grows fundamentally out of the value a firm is able to create for its buyers" and that, "[…] potential sources of competitive advantage are everywhere in a firm." (Porter M. , 2004, p. 3) Porter´s theory and definition of Competitive Advantage is one of many theories that exist. When revising the theory on competitive advantage in the studies on strategy, the mutual idea is value creation. Barney on the other hand claims that: "a firm experiences competitive advantages when its actions in an industry or market create economic value and when few competing firms are engaging in similar actions." (Barney, 2002, p. 9) Barney links competitive advantage to performance, claiming that "a firm obtains above-normal performance when it generates greater-than-expected value from the resources it employs." (Barney, 2002, p. 9)

3.2. Recent developments

Treacy and Wiersema's theory on competitive strategy counts among the recent developments on competitive strategy. Their theory has major significant similarities to Porter's theory on competitive advantage. In this chapter the Treacy and Wiersema's theory "Value Disciplines" is discussed in more detail.

3.2.1. Treacy's and Wiersema's Value Disciplines

The concept of Treacy and Wiersema is based on an analysis of 80 market leaders, in which companies from different industries were included. In this connection are mentioned examples of the courier service Federal Express, purchase house chain Wall Mart, electronics group Sony, the fast food chain McDonalds , the sporting goods producer Nike or the computer manufacturer Dell to demonstrate the span of the investigation . The aim of the

investigation was to gain insight to the reasons why certain companies managed the great leap forward to market leadership (Treacy, M. & Wiersema, F., 2007, p. 10). Are commonalities between the various strategic concepts existent and how can these be incorporated into a single frame of reference? In order to carve out the industry independent strategies, the perspective of the customers is chosen. The success or failure of each strategy is therefor based on the ability of the company to offer a superior customer value to a specific customer segment (Treacy, M. & Wiersema, F., 1993).
Treacy and Wiersema define three "value principles":

- cost leadership, distinguished by the lowest life-cycle costs
- product leadership, a strategy which is based on the most innovative products
- and customer intimacy, a strategy which pushes the best problem solving in the center point

These three categories have in common with the three generic strategies of Porter. Operational excellence is comparable with the generic strategy cost leadership, whereas Product leadership represents the strategy of differentiation throughout innovation. Costumer intimacy on the other hand is the strategy of differentiation concluded with bespoke costumer service.

According to Treacy and Wiersema, in order to substantiate these strategies, four rules have to be followed (Treacy, M. & Wiersema, F., 2007, p. 23):

- the best service offer on the market is achieved where one shines in one particular value category
- in the other value categories threshold values have to be kept
- constant improving of utilization is necessary
- the operative business model must be tailored to the singular customer use

The relevant strategies are neither dependent on the life time cycle nor on the market share and can be followed by any company, not depending on the industry. The concept of Treacy and Wiersema therefore can be assigned without doubt to the generic research approach.

Figure 7: Treacy and Wieserma's value principles
Source: http://www.bakenadviesgroep.nl/wp-content/uploads/2010/09/Tracey-Wiersma.jpg
Date of retrieving: 21.8.2015

Cost Leadership

Cost leadership portrays Fa competitive strategy, which aims to obtain a cost advantage within an industry. The relevant cost advantage refers in this context to the average total costs and gives the company a price reduction potential which less efficient competitors cannot perceive. The lower costs in relation to its competitors are sought, without under running a certain thresholds in quality or level of service. A below-average quality or level of service can hardly be compensated with a cheap price based on leadership.

Deductions in terms of quality and service are only accepted by the customers to a certain extent. Cost leadership aims not only at achieving a competitive edge from low purchase prices. A cost leadership also reflects itself from the competition by offering products or services that have lower life cycle costs. As part of the consumer cycle both the costs for the acquisition of the product (e.g. purchase price, opportunity costs) as well as the utilization costs (e.g. service, repair) are considered. To implement a cost leadership strategy extensive measures are required. Cost reductions are exploited, individual cost blocks undergo a strict control, production facilities with an efficient size are established to exploit economies of scale. Other starting points are securing access to cost inputs and the use of the most modern technological hardware and software (Porter, M.,1980, p.). Unlike product leadership, cost leadership waives on the numerous product variants. With the help of standardizes products

and processes it is primarily operated in markets with mass products (Treacy, M. & Wiersema, F., 2007).

The cost leadership strategy is taken into account not only in the strategic concept of Treacy and Wiersema, but also in the approach of Porter. The cost leadership strategy can be broken down into sub-strategies, which help to improve the cost position in different ways. The starting point of the analysis of the various sub-strategies is the experience curve concept. This concept was developed in the mid-sixties of the Boston Consulting Group and describes the relationship between the development costs of a product and the cumulative production output (Steinmann H. & Schreyögg G., 2005, p. 193). The empirically confirmed study leads to the following key message: The doubling of cumulative production output of a product during the entire production time leads to reduction in inflation-adjusted unit costs by 20 to 30 % (Henderson, 1984, p. 19).

Product Leadership

The product leadership strategy pursues the goal to generate a competitive advantage by means of innovative products and services. The product leader is distinguished from the competition through and outstanding product and service quality. By continuously developing new products, the existing limits are exceeded.

The competitive strategy product leadership thus requires a focus on the core processes of innovation, product development and extensive market research (Porter M. E., 1980, p. 73). Product development process is to be optimized. Substantial investments are essential in order to turn ideas into products and to bring products on the market. The business processes must be aligned on speed because the immediate commercialization of the respective idea is necessary.

In case the demand for a product is too low, measures are to be set to enter the market and to educate the potential customers about the new product. Spectacular launches, massive Customer information and early customer loyalty are essential components of Marketing. A product leader sells not only a product, but also the buying experience. If it is possible, it is attempted to build an emotional attachment to the product.

According to Porter, the strategy product leadership is a differentiation strategy. The creation of a unique product in the entire industry is in foreground. The product features are used as starting points for differentiation. Although the strategic course of this strategy is not based on the cost side, the cost situation is not entirely to be ignored (Porter, M. E., 1980, p.73).

Customer Intimacy

The competitive strategy Customer Intimacy assumes that a company can gain a competitive edge over the competitors by offering the best problem solution for the client. Although this strategy does not pursue the attainment of the lowest price or the development of innovative products, an improved customer services is nevertheless submitted, provided that the individual customer needs are met. Customers Partners cut their products to specific customer requirements and do not target one-time transaction, but rather aim at maintaining long-term customer relationships and entering into partnerships. Partners are to be chosen selectively because not all customers are willing to enter into partnerships. On top of that, certain risks are connected with every customer relationship, as responsibility for result is taken over and each customer relationship is considered as an investment. (Treacy, M. & Wiersema, F., 2007, p. 166)

The strategy customer relationship is based on the assumption that competitive advantages are achieved with the help of individual problem solutions. The product respectively the services range is tailored to the individual needs of the customer. Customized concepts should surpass the continually rising customer expectations. Partners do not focus on individual transactions, but maintain long-term business relationships. If a company is pursuing the competitive strategy Customer Partnership, these requirements in accordance with the following core processes are important. Primary customer problems are to be identifies and to solved. High importance is also attached to the service and order completion process. You can only win the trust of the customer if the agreed level of service is maintained. To intensify the long-term business relationships, a relationship management is furthermore required. A key account management can be used to tie customers to the company. The market communication process represents an additional core process within the framework of a customer partnership (Treacy, M. & Wiersema, F., 2007, p. 184).

3.3. So what is Strategy and Competitive Advantage?

As seen in the previous subchapter 3.1. And 3.2., many authors have developed a theory on competitive strategy. To normatively define the term strategy, which is used in business management on a daily basis, has been the target of many researchers. Looking at the etymologic - historical roots, the term ‘strategy’ can be derived from the Greek ‘strategos’ and defines the role of the general (Staehle, W.H. et al, 1999, p. 600). Later on it came to an

extension regarding the scope: "*Initially strategos referred to a role (a general in command of an army). Later it came to mean 'the art of general', which is to say the psychological and behavioral skills with which he occupied the role."* (Quinn, et al, 1988, p. 2) Thus, we can say that in the art of warfare strategy means the art or apprenticeship or higher leadership of forces (troops) (Staehle, W.H. et al, 1999, p. 600).

In the economic sphere strategy relates to the targeted position to be reached within a certain time. Strategy is often defined as a plan of the top-management to achieve results consistent with the companies' goals.

In 1962, Alfred D. Chandler defined strategy as: "*the determination of the basic long-term goals and objectives of an enterprise, and the adoption of courses of action and the allocation of resources necessary for carrying out these goals."* (Chandler, 1962, p. 13)

Porter stated in his book Competitive Advantage (1985) that : "*Competitive advantage grows out of value a firm is able to create for its buyers that exceeds the firm's cost of creating it. Value is what buyers are willing to pay, and superior value stems from offering lower prices than competitors for equivalent benefits or providing unique benefits that more than offset a higher price. There are two basic types of competitive advantage: cost leadership and differentiation."* (Porter M. E., 1985, p. 3).

He defined strategy as "*a broad formula for how a business is going to compete, what its goals should be, and what policies will be needed to carry out those goals."* (Porter M. E., 1980, p. 25) Porter further claims that competitive strategy is about being different from the competitors. The aim is to choose a different set of actions to bring a 'unique mix of value.' (Porter M. E., 1980, p. 26).

Mintzberg (1994) declares that strategy in fact has numerous meanings, all of which are useful. He explained that strategy is a plan, a guide or sequence of action into the future. Nevertheless, strategy is also a pattern, that is, reliability and stability of actions over time (Mintzberg, 1994). Mintzberg further claims that strategy gives the direction and leads the initiatives which are taken by the company in the future. It describes how to reach success (Mintzberg, 1994, p. 5). Strategies which are intended and planned ahead are also called deliberate strategies. However, in reality the plan can often not be executed thus deliberate strategies often become unrealized strategies. According to Mintzberg's model, a big number of planned deliberate strategies are not applied as a consequence of unexpected environmental changes. The outcomes of unanticipated conditions are emergent strategies. Emergent

strategies arise from the situation and according to Mintzberg, they are sometimes even more effective than intended strategies (Mintzberg, 1994, p. 6).

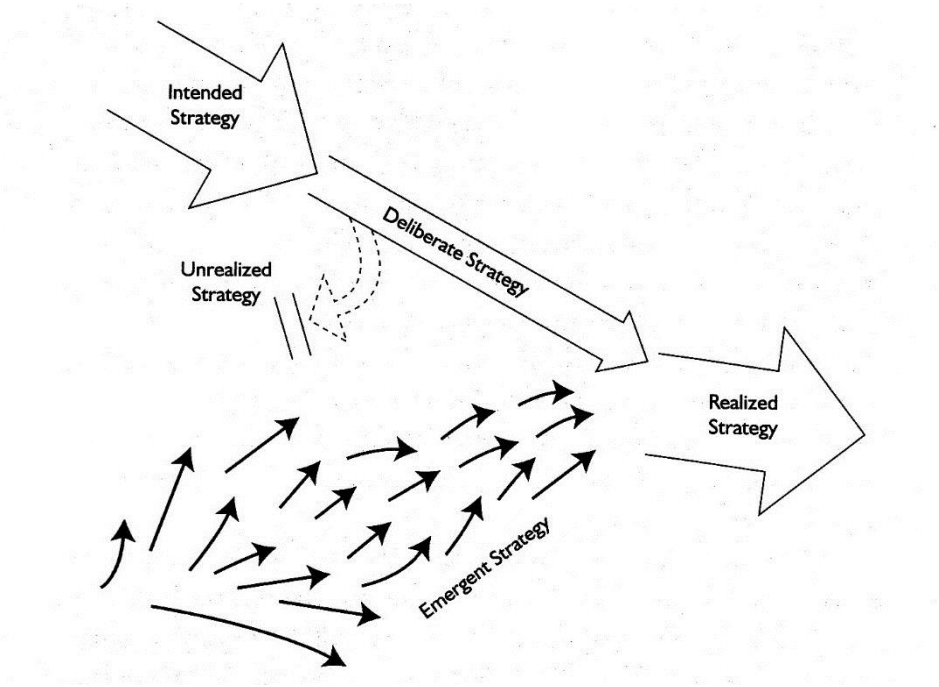

Figure 8: Intended and deliberate strategy
Source: https://performancexdesign.wordpress.com/tag/instructional-design/
Date of retrieving: 15.5.2015

Each of the above mentioned authors call attention to significant but diverse elements of strategy. While Chandler focuses on the determination of long term goals and the allocation of resources, Porter concentrates on difference and rivalry. Mintzberg applies the term 'pattern' to explain that strategies can emerge in an unplanned path.

When looking at the literature, it is evident that no uniform definition of the term is existent. Each author takes different ideas as a basis for content and scope of the definition. (Welge, M. & Al-Laham, A., 2001, p. 13).

In general, we can define competitive strategy as a plan which seeks to deliver a competitive advantage over competitors. It refers to how a certain aim will be achieved. The emphasis of a strategy lies on the consideration of what you do, what you want to develop and more importantly how you plan to move there.

3.4. Hierarchical levels of strategy

In terms of the organizational scope, we distinguish competitive strategy on three different levels: corporate - level strategy, business strategy and functional strategy. A clear definition and demarcation of the different strategy types is crucial in order to fully understand the whole concept of strategy (Hofer, C. W. & Schendel, D. E., 1978, p. 27). In the next paragraphs all three hierarchical levels will be explained in more detail.

3.4.1. Corporate level strategy

Corporate strategy deals with the questions regarding the business segments the company will be in and manages the resources between the different business areas. In other words, it defines the markets and businesses in which the company will function. It comprises of decisions about what type of industry the company wants to be active in, in what parts of the globe it wants to be in, how to distribute the resources between the businesses, which businesses to attain and which to detract (Lewis, M. & Slack, N., 2002, p. 10).

3.4.2. Business level strategy (competitive strategy)

Business level strategy determines the individual mission and purpose. It outlines how the company should compete on the market and for this purpose it is also often called competitive strategy. Business level strategy defines the product – market combination (strategic business units), so that clearly defined subunits result in a company. These strategic business units on the one hand have to be independent from each other on the other hand, they must offer the possibility to gain a competitive advantage. Business unit strategies are therefore competitive strategies since they aim to improve the competitive position of the company within the industry. At the business unit level, the strategic decisions are more about developing and maintaining a competitive advantage.

As an example, Porter's three generic strategies (cost leadership, differentiation and focus) which aim for gaining a competitive advantage can be identified as business level strategies. Porter's theory was further developed by Treacy's and Wiersema's which was mentioned in the previous chapter.

After years of debates on competitive strategy, authors coincide on the assumption that a competitive strategy has to include " *the who, the what and the how."* (Dagnino, 2012, p. 23) These three elements cover the three basic questions that the management has to ask itself when defining the business strategy.

The *who* signifies the customers. When creating the business strategy, managers have to ask themselves who the targeted customers are and what demands and needs they have.

The *what* represents the question: What products will we offer? Here, it needs to be decided about the attributes of the products and services.

The *how* signifies the method the company uses to provide its products i.e. how to create the product and how to allocate it.

Therefore, competitive strategy is a series of crucial decisions which support the aims and goals of a specific firm (Dagnino, 2012, p. 25).The concept of competitive strategy has been discussed in the field of Business Administration since Michael Porter introduced his theory of competitive advantage. His theory of Competitive Advantage was the first and best known business strategy classification (Dagnino, 2012, p. 25). Before Porter's Theory of Competitive Strategy and Competitive Advantage many definitions and theories of strategy came into existence as we saw in the previous chapter.

For aim of this Master Thesis, the focus lies mainly on the conception of competitive (business) strategy.

3.4.3. Functional level strategy

On the functional strategy level the main question is in what way and how this particular function can contribute to the competitive advantage of the business. This level of a company refers to the level of its divisions and sections such as marketing, logistics, human resources, IT and others. Functional strategies usually associate with more narrow functional purposes and include managers in each functional division. Functional units deliver input to business units and corporate strategies by giving useful information on customer feedback or competences. This strategy has to guide straight to the performance of business unit and corporate strategies, meaning that each level of strategy improves and assists each other in order to make sure the organization is successful.

The Figure below, presents a graphic description of the hierarchical levels of strategy.

Figure 9: Hierarchical levels of strategy
Source: http://www.ceo2go.com.au/our-services/ceo-self/strategy/
Date of retrieving: 21.6.2015

3.5. The relevance of corporate environment in the process of strategy development

The corporate environment plays a crucial role in the strategy development. Over time it can lead to major changes in the business environment, which in turn affect the company. Especially in the process of strategy development, these corporate environments are taken into account before entering the market. In this regards, there are two significant demands on companies to be distinguished. Firstly, the company's relationship with the environment (external orientation) and, secondly, the internal structure of the company (internal orientation). The exterior orientation is so important, because environmental changes require a quick reaction. It is closely related to internal orientation as flexibility, creativity and innovative capacity of the company are necessary. This means that the external orientation requires the development of powerful resources, potentials and skills. Based on these changing environmental conditions Ansoff (1979) claimed in the environmental Strategy - structure approach that the choice of strategy is initially determined by the environment. In other words, if a company wants to be successful, the choice of strategy is to be adapted to the conditions of the business environment (Bea, F. & Haas, J., 2005, p.167).

It is necessary to monitor, scan and analyze the business environment, because on the one hand it can create new opportunities, on the other hand environmental changes can cause threats for the future existence of the company. Strategic analysis is a process which helps the strategists to monitor the business environment and evaluate the found facts, so they can identify opportunities and threats which the individual factors present for the company (Nellis, J. & Parker D., 2006, p.18).

The environmental analysis should be executed in three consequential steps:

- Analysis of the current strategy followed
- Identification of the current situation and forecast of the environmental development
- Appraisal of the significance of the identified changes for the future strategic growth of the company, assessment of new opportunities and threats

The theory of strategic analysis of the environment distinguishes between the macro environment and the micro environment. In the following paragraphs, the relevant corporate environments that have to be considered in a strategy development are illustrated. In the first step the global environment (macro environment) is described with the help of PEST analysis. After, the market (micro environment) which is in direct relation to the company is characterized.

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3.5.1. The Macro Environment - the global environment

The macro environment is the external environment and contains all external elements with which the business interacts, and which the business cannot directly influence (Kroon, 1995, p. 37). The macro environment cannot be regulated and planned by the company. Firms have no power over demographic conversions, cultural standards or government rules, therefore they have to adjust the company to its external macro environment. The evaluation analysis of the macro environment is usually completed with the PEST (political, environmental, social and technological) analysis. The global environment (macro environment) is identical for all businesses operating in the same geographical area. However, the influence of the macro environment will never be equal on all businesses, which implies that for each company a different composition of other key factors is existent.

The PEST Analysis

The PEST analysis refers to the political, economic, socio-cultural and technological factors that influence a company. This analysis is a commonly used instrument to examine the forces which have a contemporary effect on the business as well as the ones which are likely to affect the business in the future. The factors of macro level are therefore critical determinants of threats and opportunities, which a company will have to face in the future (Grant, R. M. & Nippa M. , 2006)
In the next paragraphs the political, economic, socio- cultural and technological factors will be described more closely.

Political

The state affects the functioning of the economy especially with its legislative power, thus laws and compliance control. The state represents a valuable consumer and simultaneously presents a major employer. An important function of the state is implementing economic policy. Therefore, various government actions can, on the one hand, create opportunities (government is a major consumer of different products, protects domestic producers from foreign or subsidized certain enterprises) and on the other hand pose a threat to the enterprise (hygiene rules, antitrust laws, laws to protect the environment) . The political system is especially important for its degree of stability. Political instability is the worst thing that can negatively impact businesses; on the other hand political stability presents a certain degree of security for the enterprise.

Economical

All businesses need finance, labor, material resources, energy, information and knowledge for the performance of its mission. All businesses realize its production on the market and are therefore significantly influenced by the economic policy of the state. The state of the economy, whether current or future, strongly influences the situation. It is therefore necessary to analyze in particular:

- stage of economic cycle of domestic and foreign economics
- the political situation and its impact on the economy
- government’s economic policy, monetary and fiscal policy, balance of payments
- inflation rate

- the situation on the capital market

When doing a strategic analysis it is necessary to analyze the impact of individual factors on the business, while also determining the strength and cause of their impact on the enterprise's development. The action of these factors for individual companies can vary, because for certain companies some factors may pose a threat and for other an opportunity.

Social

Social factors have a significant impact on the demand for products or services and also affect the supply side - entrepreneurship, work incentives. They include cultural changes and are often referred to as socio-cultural changes. Among the most important social factors are:

- socio- political system and the climate of the company
- values, lifestyle and attitudes of people
- standard of living
- qualification structure of the population
- state of the health system and population structure

This mainly concerns the social-cultural traditions, customs, attitudes, beliefs and recognized hierarchy of values that are characteristic for the specific environment of a business and translate into organizational culture.

Technological

Many alterations and conversion that took place within a business' operations happened because of technological progress. Electronics has been progressively integrated in our everyday lives. Processors and high speed internet have become obtainable for cheaper prices, thus allowing also smaller companies and individuals to meet the expenses of technologies. The speed of technological inventions change has the outcome of initiating new businesses to arise and also alters the way in which present industries compete. Technological developments contain the Internet, genetic engineering and the application of sophisticated software (Henry, 2011, p. 54).

Technological factors affect companies especially with the quality and availability of technology. Investing in technological development becomes a necessity for the existence of the company. Innovations and inventions represent for the company on the one hand opportunity, but also carry a risk of failure because until the last moment , it is not clear

whether certain research and development will be successfully completed and whether its output will be accepted by consumer at least to the extent that ensures the return of invested funds.

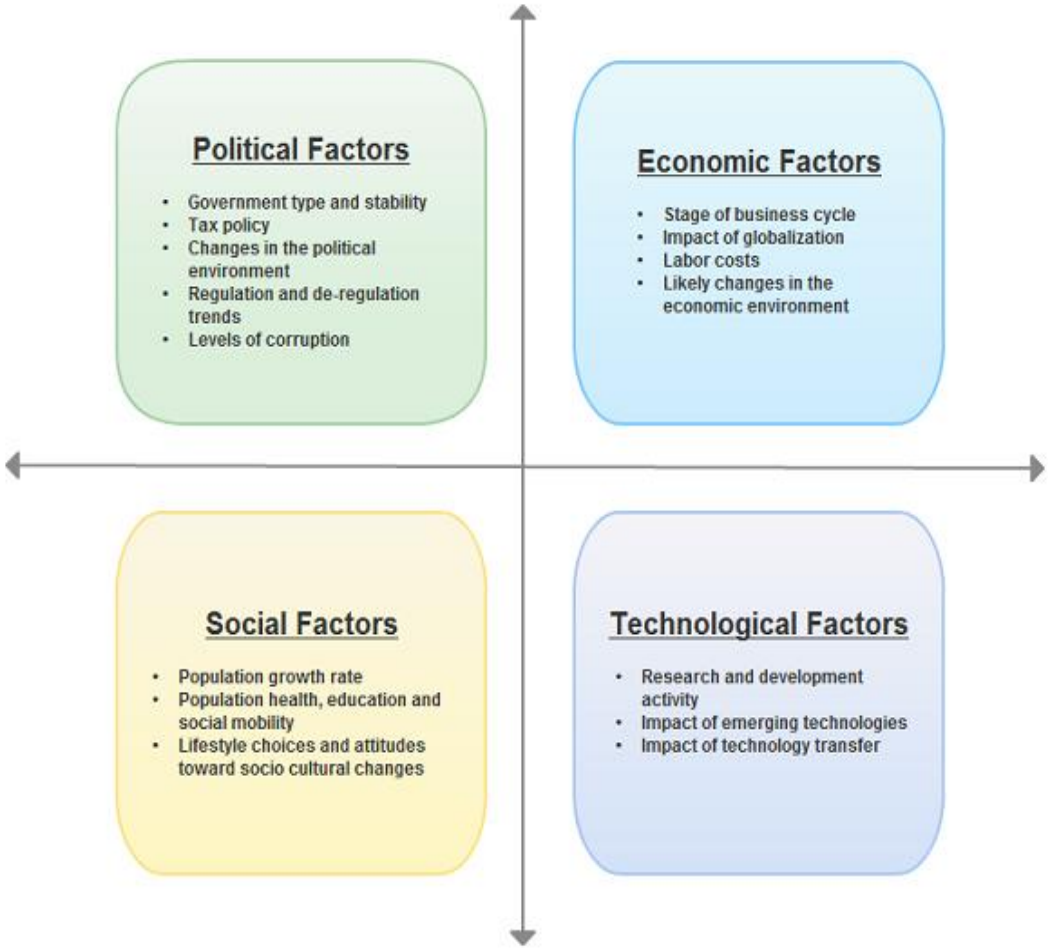

Figure 10: The PEST Analysis
Source: http://2inno.eu/en/content/pest-analysis
Date of retrieving: 29.6.2015

3.5.2. The Micro Environment - The Market

The market is the closer, business related environment (Kroon, 1995). The market presents the relationship of a company to its demand channels and is therefore also referred to as a sales market. Bea & Haas (2005) define the market as the totality of economic relations between buyers and sellers of a particular good or a particular group of goods.

The micro - environment also known as the decision making environment includes the immediate situation of the market. It is influenced predominantly by its competitors, suppliers

and customers. For this reason, the following text distinguishes between three sectors - customers, suppliers and competitors. These three forces of the micro environment are often referred to as the industry environment. The aim of the industry analysis is to understand the nature of this environment, to identify other opportunities and threats to the enterprise and the creation of subsequent objectified findings of the strengths and weaknesses of the company.

Porter's 5 Forces

An approach to measuring the market attractiveness provides Porter with the so-called Five-Forces model. Porter's model is one of the most important and mostly used models of strategic analysis. This model is used until today by managers to help them analyze the competitive forces of the enterprise environment and to reveal the threats and opportunities. It distinguishes five basic competitive forces affecting the intensity of competition and thus the profitability of an industry. This model is based on the assumption that the strategic position of the company acting in a certain sector, or on a particular market is determined by the action of 5 basic factors (Porter M. , 2004, p. 34):

1. Bargaining power of buyers
2. Bargaining power of suppliers
3. Threat of new entrants
4. Threat of substitute products or services
   and,
5. Rivalry among existing firms

Bargaining power of buyers

Business management must be interested in the actual and potential customers, their needs and the trends that could lead to changes in their requirements and behavior. The consumers can also affect the profitability of an industry by for example, lower prices, better quality or better service demand. The bigger the number of offerings, the easier is the demands of the buyers to be enforced.

Generally, it is applicable that the customer has compared to the company a stronger bargaining position if:

1. It is a large customer in terms of the shares of sales production or a significant customer (a renowned personality of traditional customers)

2. He may easily switch to another company (low switching costs)

3. The client could do a reverse integration meaning that the customer might produce the purchased product by himself

4. The production enterprise is characterized by high elasticity of demand, and its substitutes are easily available

6. The customer is a major distributor with the possibility to influence other customers

Bargaining power of suppliers

Usually, the number of suppliers is so great that a company has a strong position. However, cost savings through single sourcing, thus through a single source of supply, are possible for businesses and thus increase the supplier bargaining power. This bargaining power of suppliers rises if the company is not a very important clientele for the supplier or if the product of the company has a very high priority (Porter M. , 2004, p. 36).

Threat of new entrants

This factor leads to additional competition for the company. New entrants are expected to have lower prices. Thus a decrease in profitability is created in the industry since the enterprises need to follow up to the price reductions.

Threat of substitute products or services

Substitutes are products which are based on other technologies, but offer the customers the same or at least a similar benefit. The strength of substitution is affected by the price - performance ratio of the substitution good and the degree of the technological superiority.
With cigarettes, for example, there is no threat of substitutes and therefore the consumers are less price-conscious, that is, demand is in terms of the price inelastic. But if there are adequate substitutes, the demand is in terms of the price elastic, because the customer will react to a price increase of the product with a switchover to a substitute (Magretta, 2012, p. 46).

Rivalry among existing firms

The higher the rivalry of existing competitors, the lower the income returns. Decisive for the rivalry is mainly the number of competitors (concentration level) and sector growth. The higher the number of competitors and the lower the growth in the sector, the harder the battle for market share (Magretta, 2012, p. 50).

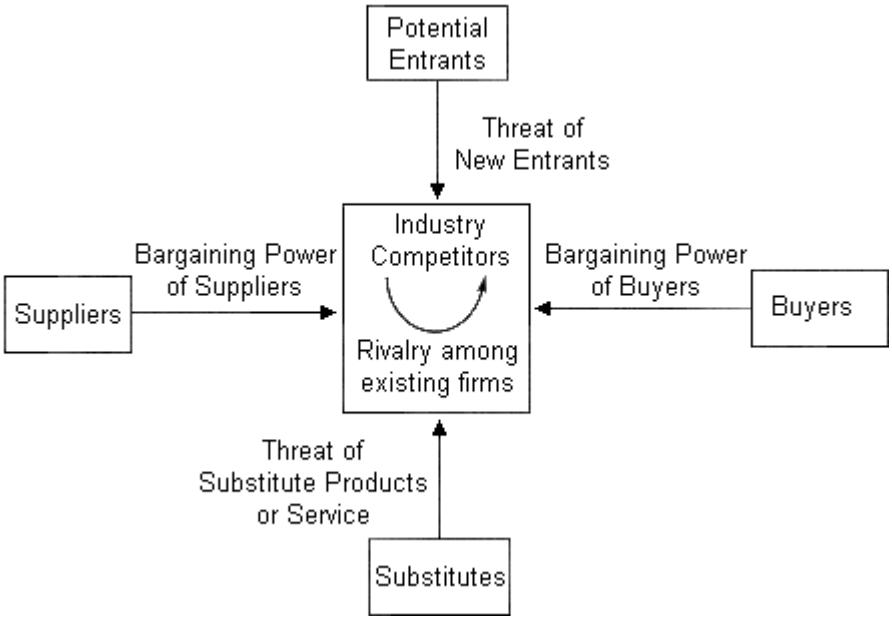

Figure 11: Porter's five forces model
Source: http://www.valuebasedmanagement.net/methods_porter_five_forces.html
Date of retrieving: 2.7.2015

3.6. The SWOT Analysis

The results of strategic analysis of the company should result in the final synthesis and formulation conclusions. The strategy should respond to these findings and try to exploit the strengths to generate opportunities in the surroundings of the company. Precisely for this reason the result and a final conclusion of a strategic review is the identification of strengths and weaknesses of the company as well opportunities and threats around the company , through which competitive benefits and key success factors can more easily be identified.

In practice the SWOT analysis is a widely used and simple tool for strategy planning that is used to assess the strengths, weaknesses, opportunities and threats that are implicated in a company, industry or project.

For the formulation of a strategy firstly all the necessary information has to be collected and analyzed in the first step. The framework of the SWOT analysis facilitates this research process by dividing the information in the fields into strength, weaknesses, opportunities and threats. Strengths and weaknesses provide the internal analysis of the company, whereas opportunities and risks represent the external analysis of the relevant market.

Figure 12: The SWOT Analysis
Source: http://www.deltapartners.ca/blog/category/current-events/
Date of retrieving: 2.7.2015

4. Empirical Analysis

The next part of the Master Thesis is a practical part. The practical part presents a case study where theoretical knowledge is applied to the European steel industry.
Following, the European steel sector will be observed and studied. The analysis of the European steel sector includes an internal analysis as well as an external analysis. Strategic tools which were discussed in the theoretical part are applied in the practical part. Based on the results of the micro and macro analysis of the European steel sector, strategic approaches for the European steel industry will be formulated.

4.1. The European Steel Sector

Nowadays, the European steel segment represents a modern, well established industry with clients mainly based on the European marketplace, mostly in high-end sectors. The European steel industry is competitive and an essential employer in many of the Member States. Quality goods, innovative products, effectiveness, skillful experienced workforce and industrial progress signify the core of competitive force (European Commission, 2013). Several forms of steel products are utilized and applied by many industrial sectors, such as construction, automotive, mechanical and electronics.

The European steel sector produces yearly over 177 million tons of steel which is approximately 12% of the worldwide production (European Commission, 2016). Behind China, EU is the second largest producer of steel in the world. Current plants, innovative products, skillful workers, challenging customers and product innovation are all parts of the European steel industry. Yet still, European steel industry has been facing some challenges. Some of which are growing energy costs, dependence on the import of raw materials, difficult competition from China and other emerging economies, and environmental challenges. The industry is also confronting a higher risk of plant shutdowns and exposure to jobs shortage.

4.2. Challenges of the European Steel Sector

The demand for steel in Europe fell during the crisis significantly. Currently, the demand for steel is approximately 25 % lower than before the crisis. Due to plant shutdowns and reduced production, employment in the steel industry fell by 10%. However, EU remains worldwide

the second largest producer of steel with around 360 000 employees, output of 117 million tons a year, which represents around 12% of global steel production. (European Commission, 2013)

Another challenge the European steel industry is facing is major overcapacity. According to OECD, the capacity of steelmaking is expected to maintain increasing in the next years. Europe's steel industry stumbles on the concurrent impact of overcapacity and low demand. Due to the Chinese economic boom which was followed by an unexpected slowdown industry faces major supply mainly coming from China. At the same time, the decline of demand which occurred in 2008 due to the financial crises, never fully recovered. Therefore the demand level remains at the pre crises level. Simultaneously, high energy prices as well as accessibility to raw materials are troubling the European steel sector. The necessity to adapt to green economy and to finance new groundbreaking products as well as demographic changes in the long run are all issue where European steel producers should take action (European Commission, 2013).

4.3. Competitiveness of the EU Steel Industry

Various elements and factors have to be considered when examining the competitive performance of the European steel sector. In this chapter, the factors to be considered are split in business conditions. Below, a competitive framework developed by the European Commission for the analysis of the competitive position of the steel industry is presented.

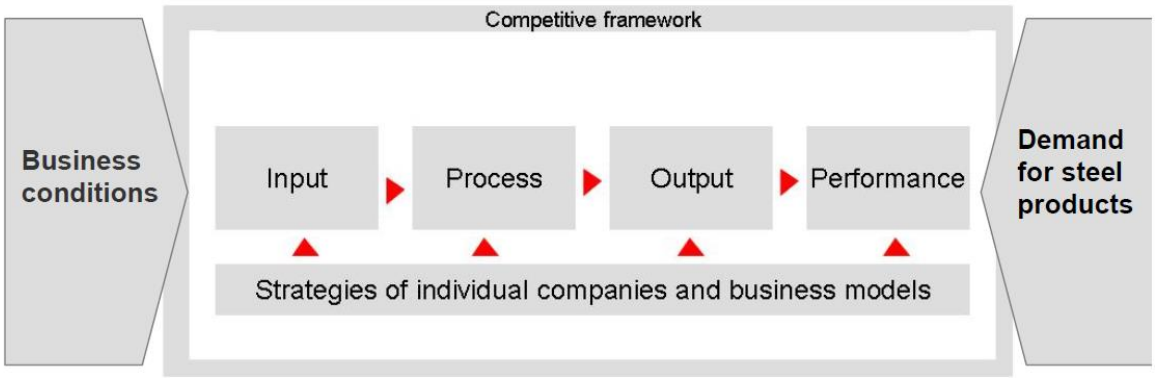

Figure 13: Competitive Framework
Source:
http://ec.europa.eu/DocsRoom/documents/1988/attachments/1/translations/en/renditions/pdf
Date of retrieving: 22.5.2015

4.3.1. Essential business conditions

Business conditions determine the main necessities and prerequisites in the business of steel production. Following, the factors that establish the essential business conditions in the steel industry are presented and shortly explained. According to the Framework created by the European Commission the most significant prerequisites for the steel industry are : supply of resources, transport intensity, high capital prerequisites, high energy requirements and economic growth (European Comission, 2008, p. 53).

Supply of resources

Due to the enormous demand for steel and production of steel in China, difficulty has been put on the supply of raw materials. One of the main strategic matters for steel businesses is to guarantee the stream of raw materials in the long run. The European steel production is subject to foreign supply for an extensive share of its raw materials, e.g. coal and iron ore. Usually, the production sites were situated close to the iron ore and coalmines with the production groups standing in the Ruhr, Saar, Lorraine, Wallonia and other. Nevertheless, in the 70s it became inefficient to use regional raw materials (EUR - Lex, 2007). Mining of cheaper iron ore and coal in developing economies and low-cost seaborne transportation made it more economical to use overseas raw materials. Accordingly, new steel production sites have been situated longwise the coastline near the harbors. Otherwise, additional transportation costs have to be faced.

To a certain extent, the reallocation of the manufacturing of steel from Western Europe to Eastern European countries also implies a shift of steel demand in the direction of Eastern Europe. Within this reallocation, numerous advantages for manufacturers in Eastern Europe arise. The advantages being highly qualified yet low cost workforces, approach to high-growth marketplace and chance to supply the west market with their steel products. Many big steel operators and sponsors have realized this chance and moved to the region either by merging with or acquiring a steel manufacturer in Easter Europe (European Comission, 2008, p. 63).

Transport Intensity

Around 30% of all steel products travel to another country worldwide. Hence, the costs of transport totals from 5% to 15% of the selling price of the product. Due to the

facts that steel products are often massive and approximately 30% pass to another region, the steel industry can be described as a transportation-demanding industry.
In Europe, cargo is transported either on roads, rails or water. The steel industry uses all three of those transport ways. Each country uses a different mix of the three transport modes in accordance with its possibilities and advantages. The on-going relapse of the rail transportation service has triggered a decline of the market share of rail freight to the advantage of road transport the most (European Commission, 2013).

High capital prerequisites (prerequisites of high assets)

In the steel business, high capital requirements are one of the main conditions as steel production is described by high degree of fixed costs. Steel plants are only cost effective and gainful if the yearly capacity is from 2 million tons and up. In a steel plant it is a challenge to adapt production to demand since the adjustments are associated with costs and stress which arise from reheating and cooling down the furnace (European Comission, 2008, p. 53).

High energy requirements

The steel industry is an energy intensive user therefore when deciding about location of the plant this factor plays an important role (Worldsteel Association, 2014). High investments are being made to decrease the energy consumptions. It is estimated that energy expenses in the steel industry involve approximately 40% of overall operational costs. Europe faces much higher energy costs than its global competitors.
The most significant energy sources of the steel industry are electricity and coking coal. Both, coking coal and electricity underwent a significant price increase in the last years. Europe faces almost two times higher electricity prices than the US and most OECD countries. All this deviations signify major fallout on the cost composition of steel firms in all countries. These factors have a straight impact on international competition and attractiveness. According to the Commission's Energy Roadmap 2050, it is very probable that the electricity prices are going to increase until 2030, and afterward experience a slight decline (European Commission, 2013).

Economic Growth

The steel industry is very responsive to and reliant on changes in the whole economy. It supplies components and substances to other important industries such as construction, automotive, consumer domestic devices and other. Due to its high

responsiveness to changes we can say that the steel industry is mainly driven by customer requests. Thus, sustaining in a good relationship with the customer is of high importance for a steel producer (European Commission, 2013).

4.3.2. Competitive strategies in the steel industry

Companies' strategies affect all stages of the competitive framework shown above. In order to gain competitive advantage, firms apply different business strategies. Each company has to confront various challenges and according to those, it chooses a competitive strategy which it will follow. According to the Boston Consulting Group (BCG), companies in the steel industry steel classify as (Boston Consulting Group, 2007, p. 27):

- "Global players
- Regional champions
- Niche specialists"

Global players are those who have global net of production facilities in every region and manufacture more than 50 million tons of steel annually. A global player produces a very wide range of products from broad commodities to specialized products. Today, only few global players in the steel industry exist. An example of a global player is Arcelor-Mittal, who established through a merger of about 50 multinationals. According to Boston Consulting Group, the main task a global players faces, is to incorporate new firms and preserve its standard specifications (Boston Consulting Group, 2007, p. 27).

Regional champions produce between 5 – 50 millions of tons yearly and are divided in two types. The first type of regional champions has a high presence in the region. Type 1 regional champion concentrates on technology and high-value goods. It is highly possible that in the future regional champion becomes a global player. This most likely happens through merging or a buyout. For type 1 regional players the major challenge represents being ahead of technological progress (Boston Consulting Group, 2007, p. 29).

Type 2 regional champions have a much lower production capacity than type 1 regional players. Their base is often in a low cost country. In general, they don't focus on specialized products but concentrate on mass production. Their challenge involves facing rather low productivity as well as meeting clients' needs for excellence and supply (European Comission, 2008, p. 29).

Niche specialists typically have a narrow product range. They create high quality modified products. Their production volume is usually not more than 5 million tons yearly. Niche specialists only have a small number of production facilities however they might have numerous sales spots. Their key concerns are their clients. For them the main challenge is to sustain good relationships with their clientele and constantly improve their customer service (Boston Consulting Group, 2007, p. 29).

Back in 60s, cost cutbacks and efficacy advances ruled the strategies of companies on a price competitive marketplace. Client information and knowledge was only partial and not used as a source of strategy. As a result, standardized goods and slight differentiation described the industry.

Nevertheless, the price rivalry was growing. Especially steel manufacturers from third countries who had accessibility to more efficient production conditions made the competition fierce. Thus, it became clear that other competitive advantages were essential. A more customer based tactic was adopted and the strategic direction was reconsidered. Manufacturers started to make choices which products they will produce, which technologies they will utilize and which strategies to apply. Moreover, relationships became a main concern of competitiveness. The focus on the supplier-customer relationship has altered towards granting total satisfaction in the relationship (European Comission, 2008, p. 8). Relationships with end users became one of the main keys of competitiveness in the steel industry.

4.3.3. Input factors

The European steel industry is greatly dependent on the rates of input and access to them. To produce steel, some of the main inputs are iron ore, scrap metal, energy, workforce and transportation. The major cost components are mostly transportation, natural resources, and the costs of energy. However, the cost factors are greatly dependent on the subdivisions, manufacturing process and technologies used, management, age of equipment, etc. In a basic model the cost of manpower only represents about 4% of total costs, which indicates that the cost of manpower only has low influence when making strategic decisions (Steel on the net, 2015).

As mentioned above, with the upsurge of demand for steel, the demand for raw materials increased. Due to the strong demand for input components a significant price increase of raw

materials and energy occurred. However, as fees are set worldwide, all producers are influenced. Hence, input costs do not form a major competitive advantage towards other nations and producers outside of Europe.

The stress of access and prices of raw materials is a task that all countries are confronting. It is very doubtful that anything in the near future will significantly change about it. When deciding about the location, availability and access to resources is a significant aspect, as some third countries have better circumstances than European associates.

Another challenge in the EU's steel industry concerning input factors is skilled labor. Due to technological changes and inventions, the requirements for knowledge and skills have grown in the last fifty years significantly. Nowadays, the industry requires engineers, managers as well as specialists to study and cope with complicated manufacture procedures. Likewise, it is probable that the requirements of the skills and knowledge will maintain to increase in the future. This concern might present difficulties for the European steel industry with a declining number of labor personnel in many EU countries.

Additionally, the steel industry is confronting the issue of a maturing workforce. Average age in the industry is quite high and substituting the labor force might pose difficulties on the sector.

4.3.4. Process and output factors

The selection of technology equipment and the managing and controlling of production facilities are important elements of competitiveness that have to be taken into account.

With the increase of the competition in the industry, producers were obliged to reform, modernize and invent to keep their attractiveness and position within the steel industry. Concurrent, customers have become more demanding and challenging concerning quality and conditions of the products. In addition, environmental regulations pushed manufacturers to produce more environmentally friendly manufacture processes and products. Because of all these reasons technological improvement and modernization is one of the most important and crucial factors in the steel industry. Accordingly, the industry has also persistently been capable to deliver substantial outcomes in the way of technology development which inclines enhanced production modes and effectiveness. The dedication of the EU's steel industry towards technology and improvement is visible on the high quality specifications and pretty strong position within the high-end markets.

Nevertheless, rivals within the steel industry are also advancing their technology abilities therefore it is a challenge for the EU steel industry to maintain its position globally. The EU

Steel industry is very reliant on maintaining and advancing its capabilities to compete, to meet customers' special demands and to persistently reduce production costs.

Productivity is considered as another output variable. Although the data regarding productivity is very limited, the data available shows that the EU steel industry is becoming less labor demanding. However, as mentioned in the previous section, labor costs only present a small percentage of the total costs (European Comission, 2008, p. 96).

4.3.5. Performance

The performance displays the European current competitive situation compared to steel industries in the rest of the world. The following section presents the performance of the discussed industry by means of profitability indicators and other performance figures to measure profitability and financial performance.

As discussed in previous chapter European steel industry experienced a major expansion in the recent years. Figure 10 (see below) displays the evolution of aggregate turnover in the iron and steel industry from the years 2001-2010. From the graph, it is evident that the turnover of the European Steel industry underwent a major increase between the years 2002-2008. Following, an intense drop between the years 2008-2009 and a partial upturn in 2010 occurred. No graph to show the aggregate turnover since 2010 was found, however according to EUROFER the turnover in 2014 was 170 billion Euros, which presents a more than 10 % increase (EUROFER).

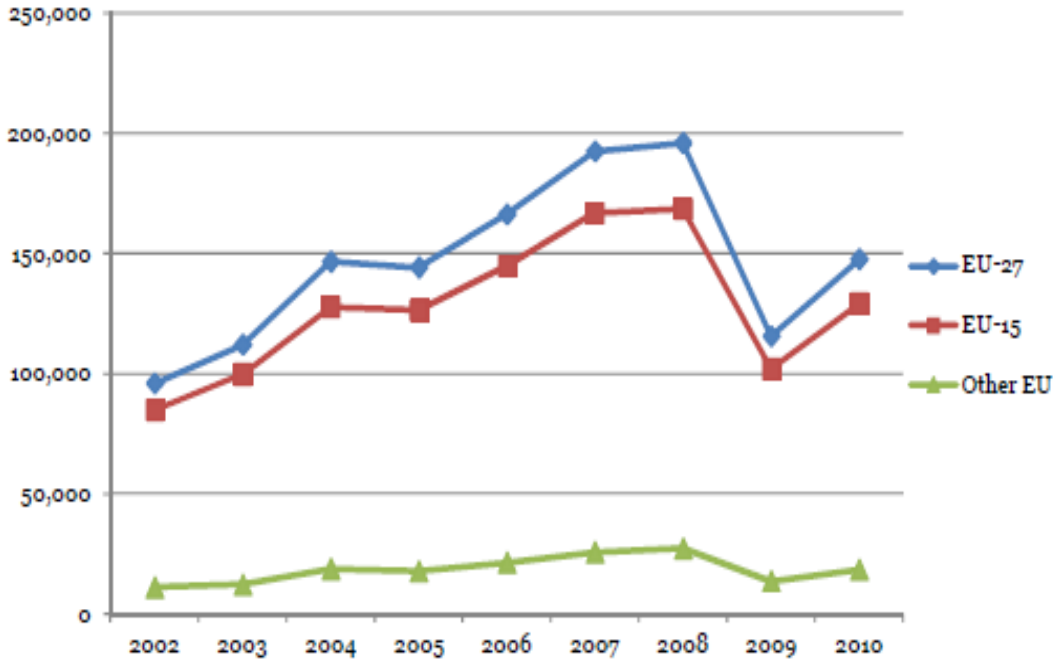

Figure 14: Aggregate turnover in the EU iron and steel industry, 2001-2010

Source: http://www.oecd.org/sti/ind/Item%203.%20%20OECD%20Secretariat%20-%20Mr.%20Anthony%20De%20Carvalho.pdf
Date of retrieving: 20.9.2015

The Organization for Economic Cooperation and Development (OECD) presented in a study in 2013 a maintainable level of EBITDA (Earnings before Interest, Tax, Depreciation and Amortization)/ sales for the industry to be approximately 16%. The average EBITDA/sales ratio of the world was estimated to average at 7, 6% in 2012, however around 80% of all steel companies were under 16%. The diagram below shows the EBITDA/Sales ratio for Europe and for the rest of the world (ROW).

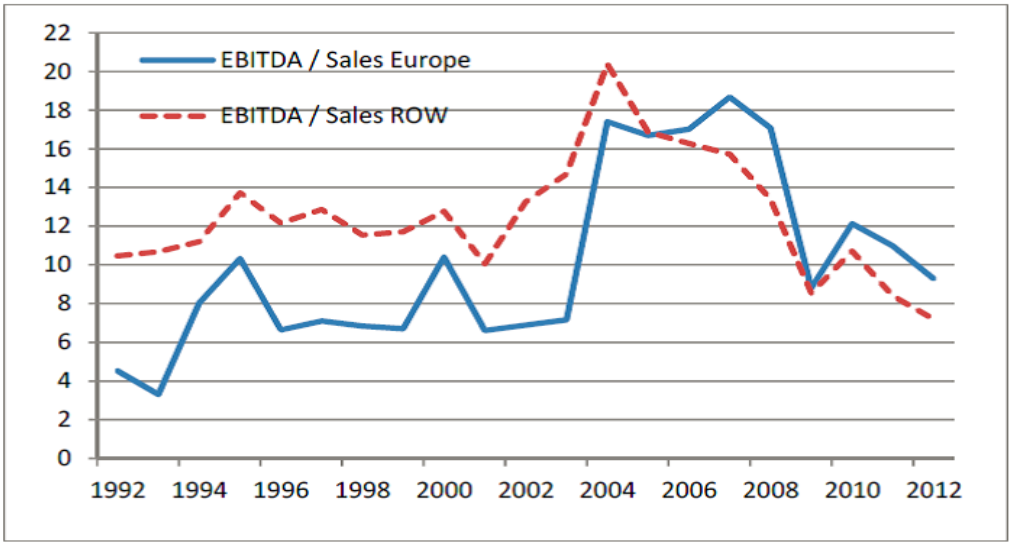

Figure 15: EBITDA / Sales Europe and ROW
Source: http://www.oecd.org/sti/ind/Item%203.%20%20OECD%20Secretariat%20-%20Mr.%20Anthony%20De%20Carvalho.pdf
Date of retrieving: 20.9.2015

According OECD the feasibility of steel industries performance mainly depends on the overall economic situation and also on the performance of the downstream sectors. OECD does not associate companies' size to the financial performance of the industry, however plant magnitude is an important factor when considering financial performance due to economies of scale (OECD, 2013, p. 8)

4.3.6. Demand and outlook

EU's macro-economic overview

The table 2 below presents EU's macro-economic overview by EUROFER'S economic committee based on the data from February 2015. The values in the table present the year-on-

year change in percentage. The table includes the values for the year 2013, estimated values for 2014 and forecasted values for 2015 and 2016.

The GDP of Europe grew by 1.3 compared to the previous year. Household and exports are the greatest reason of the growth. The forecasted values of 2015 and 2016 compared to the values of 2013 and the estimated values of 2014 indicate a recovery of the economy. A moderate increase of the EU's GDP is expected in 2015 as well as in 2016.

	EUROFER Forecast January 2015 EU			
	2013	2014 (e)	2015 (f)	2016 (f)
GDP	0.0	1.3	1.6	1.9
Private consumption	-0.2	1.1	1.6	1.7
Government consumption	0.3	1.0	0.6	0.5
Investment	-1.2	2.1	2.1	2.9
Investment in mach. equip.	-0.9	2.8	3.1	4.0
Investment in construction	-3.0	1.5	1.9	2.8
Exports	2.1	3.0	3.9	4.7
Imports	1.1	3.3	4.1	4.6
Unemployment rate	11.2	10.6	10.3	9.6
Inflation	1.5	0.7	0.5	1.3
Industrial production	-0.5	1.5	1.7	2.3

(e) = estimate (f) = forecast

Table 3: EU´s macro-economic overview
Source: http://www.eurofer.org/News%26Media/Press%20releases/ws.res/Market%20Report%20Q1_2015.fhtml/Market%20Report-2015-February.pdf
Date of retrieving: 10.9.2015

Numerous factors underwrite the bright outlook for the years 2015 and 2016. It is anticipated that the positive factors will counterbalance the dominant negative factors and insecurities which restrain the growth. Facts for the last quarter of 2014 and the latest motion signs imply

that the economic conditions calmed towards the end of last year. Their interpretations are consistent with a continuance of careful economic development in the EU. According to the outlook from February 2015 by EUROFER, the EU is looking at continued recovery even with the higher geopolitical and economic uncertainties. As mentioned above, numerous factors support the bright outlook for the next years (EUROFER, 2015, p. 2). One of these factors is the abrupt fall of oil prices in the last year. Lower oil charges imply lower input costs as well as higher margins in the business sector. Income of households will increase as a result of lower energy bills. Secondly, the Euro declined against the US dollar in the last quarter of 2014. Euro is at its weakest level in the last nine years. This means, that the positive effect of the lower oil prices is somewhat equalized, however the devaluation of the EURO will have a positive aspect within the competitive position especially on exports of Eurozone. The third factor taken into account is the Quantitative Easing (QE) program of the European Central Bank (ECB). This program intends monthly purchases of € 60 billion public and private purchases until September 2016 and aims to support the economic retrieval (EUROFER, 2015, p. 3).

Demand

The overall performance of the steel sector is determined by the need and demand for steel. The demand for steel is highly in connection with the financial and economic position of a few main industries like the automotive and construction industry which make about 50% of the total demand for steel.

Like in almost all industries, the financial crisis has had a negative impact in the steel industry. The demand for steel fell heavily. However, a slight retrieval is under way. First data indicates a moderate recovery in form of a positive growth in sectors using steel with the exception of mechanical and construction segment. The forecast for 2015 however demonstrates a modest recovery of steel use also in the mechanical and constructions sector after two years of unsatisfactory performance. According to the EUROFER Economic and Steel market outlook a higher growth rate of 2, 5% of the main steel using sectors is expected to be reached in the year 2015 (EUROFER, 2015, p. 8).

The table below shows the percentage of year-on-year change in production and the production index. On the left side the annual forecast for year 2015 and 2016 is demonstrated, on the right side the quarterly forecast for year 2015 is illustrated. The right hand (RH) axis carries the variables of change in production and the left hand (LH) axis shows the variables of production index. The annual forecast for the year 2015 and 2016 which can be seen on the left side of the graph predicts a rise in production as well as a rise in the year on year change

in production. According to the table below, it is forecasted that in 2015 as well as in 2016 the production output will slightly increase approximately by 2 – 2,5 %. Looking at the quarterly forecast of 2015, biggest increase of production will take place in the last quarter of the year 2015 (EUROFER, 2015, p. 8).

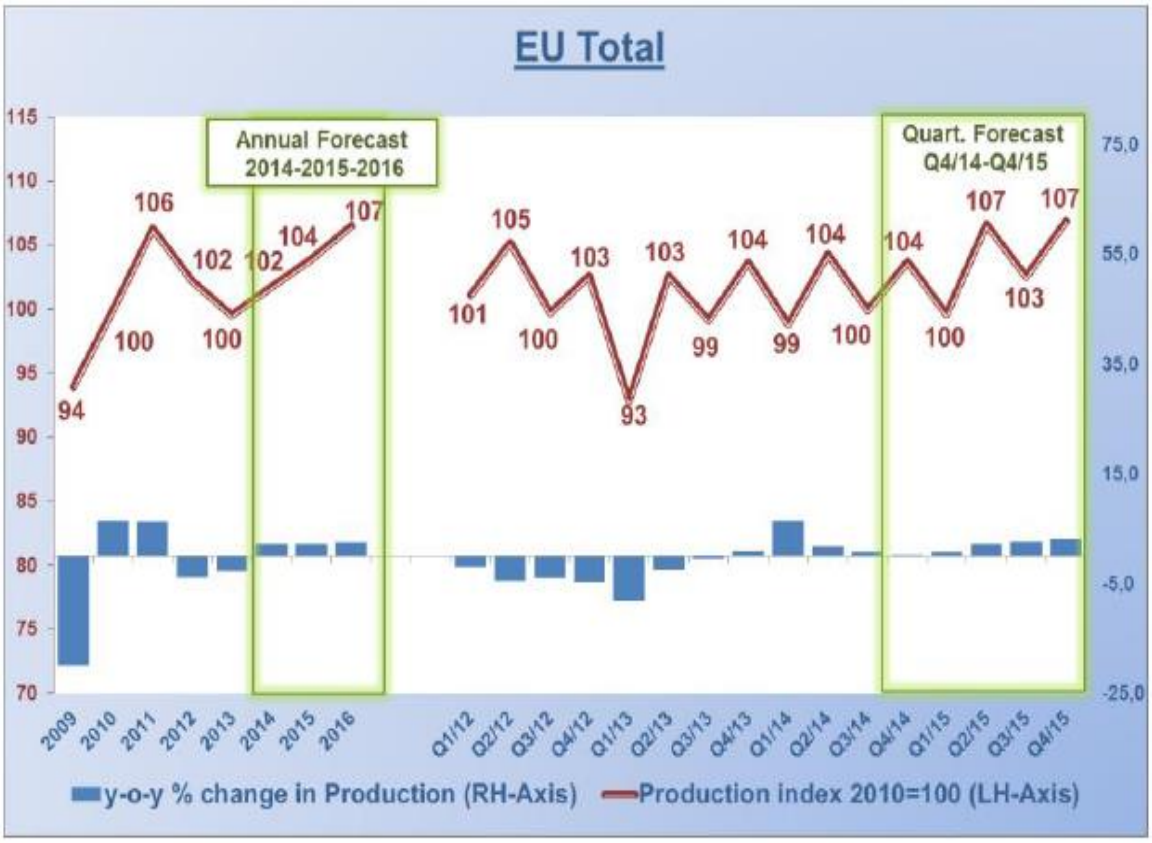

Figure 16: Change in production and production Index
Source:
http://www.eurofer.org/News%26Media/Press%20releases/ws.res/Market%20Report%20Q1_2015.fhtml/Market%20Report-2015-February.pdf
Date of retrieving: 13.9.2015

4.4. Competitor Analysis

When deciding about the future strategic steps it is important to know its competitors, their strengths, weaknesses as well as opportunities and threats.

According to a study of McKinsey & Company there are three zones when analyzing competitors which should be observed and examined (McKinsey&Company, 2013, p. 3)-

- emerging economies including Brazil, Russia and India
- China, which has experience the biggest boom and which doubled its production of steel in 10 years and,
- the mature world, which hasn't been experiencing a rise in the demand of steel

The BRIC countries are all among the top 10 steel producers of the world. In 2014 China took first place, whereas India was the fourth biggest producer of steel in the world, Russia sixth and Brazil took ninth place.

Of course there are many more regions that count as the competitors of European steel industry. However, in this thesis the chosen countries of Brazil, Russia, India and China will be analyzed. All of them are major steel producers and have different attributes in their steel industries.

In the picture below we can see the GDP viewpoint of some major steelmakers worldwide including Brazil, Russia, India, and China. Overall, the position of global economy is progressive with an increase of growth in 2016 of 3, 9%. From the graph we can see the forecast for GDP in emerging economies as well as China and Europe. When looking at Europe, it is predicted that the GDP is supposed to slightly increase in 2016. In emerging economies – Brazil and India development continues to contract due to economic and political issues (Ernst & Young, 2015) however is forecasted to slightly improve in 2016. From the graph it is also visible that China has been experiencing a slight slowdown in growth compared to the last decade. The US on the other hand is undergoing an economic retrieval, where the housing segment and the employment rate are improving.

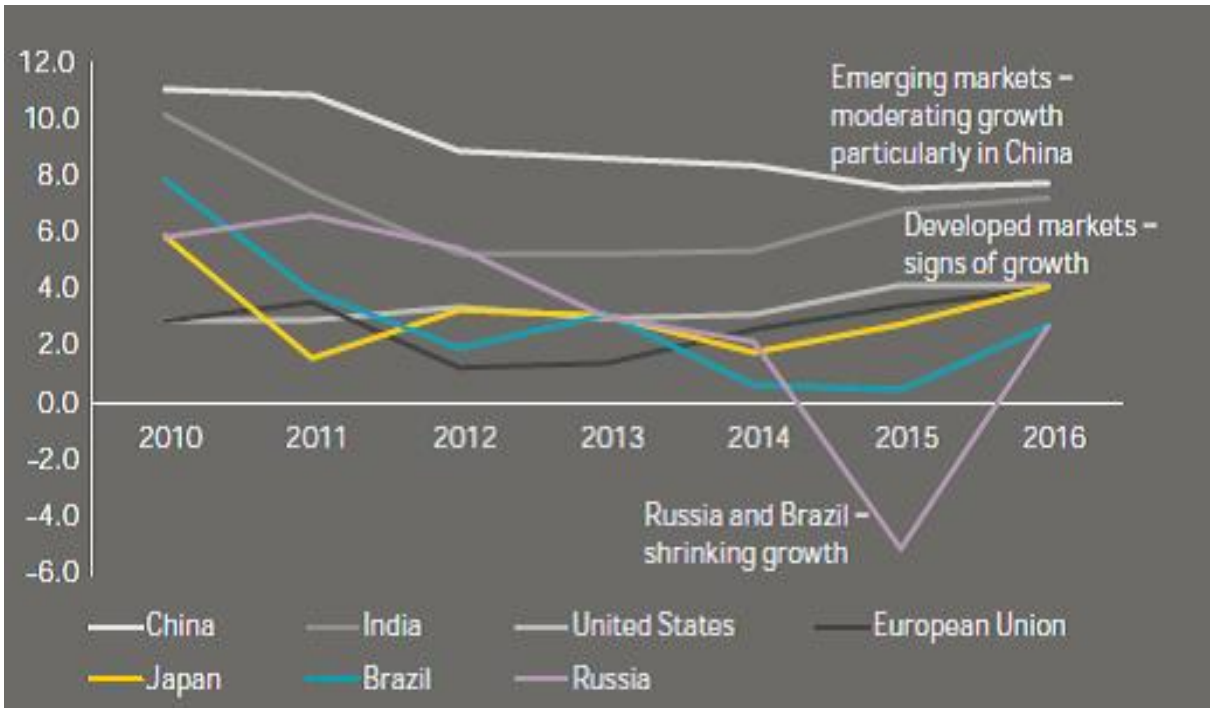

Figure 17: GDP Outlook for major steelmaking regions

Source: http://www.ey.com/GL/en/Industries/Mining---Metals/EY-global-steel-2015-2016
Date of retrieving: 12.12.2015

4.4.1. The BRIC Countries and their steel industries

Brazil's steel industry

Brazil's Steel Industry counts among the 10 largest steel industries in the world. The production of steel in Brazil started between the 1920s and 1930s, when firms were founded in the states of Rio de Janeiro and Minas Gerais. In the 1940s, the prior president Getulio Vargas created a state company named Companhia Siderurgia Nacional (CSN) with the aim to support and boost domestic production in order to decrease imports. After that, numerous firms were established. In 1990s, a process of denationalization was commenced and the state companies were privatized. These days, Brazil has 29 steel mills which are managed by 11 company groups and is the largest producer of steel in Latin America (The Brazil Business, 2014).

In 2014 Brazil's steel production presented approximately 2, 1 % of global steel production, which presents the 9th place in the world. In the continent of Latin America, Brazil's share of total production was 52, 2 % (Brazil Steel Institute, 2013).

Brazil possesses great resources of raw materials, especially iron ore. Because of its resources, Brazil seemed to be a decade ago a good location for future investors. However, nowadays things have changed. Brazil underwent major changes in the last decade and its steel production is in danger of losing its competitive edge. Brazil's monetary currency strengthened, prices of energy, workforce and logistics increased. The augmentation of prices and increase of steel imports are affecting the segment in a bad way. While the Brazilian steel industry was thriving in the years between 2005 and 2009 and displaying EBITDA margins around 30 % in 2015 it was handling much lower margins. The competitiveness of the Brazilian steel industry is at threat and in order to gain the competitive edge back Brazilian steel producers will have to adapt their strategies.

The economy of Brazil is growing with speed. Big sports occasions, the necessity of infrastructure and the intensification of manufacturing are pushing the demand progress. Regardless of the positive forecast of Brazil's economic development, Brazil has to be cautious with its future steps. The prosperity of country's steel production is decreasing due to increased costs and higher investments needed for future investors.

The steps necessary to take for the country's steel industry includes refining the efficiency in manufacturing procedures. Cheap workforce no longer exists in Brazil; the cost of labor force is almost as expensive as it is in Europe. Steel production sites will have to adapt the production efficiency in workforce and energy throughout the procession (McKinsey&Company, 2013, p. 22). Apart from the problem of the "Brazil Cost" the country is affected and influenced also by other issues.

The Brazil Steel Institute defined as the biggest problem of not only the Brazilian Steel Industry but also the whole world, the production overcapacity, which results to approximately 719 million tonnes. Most of this overcapacity is from China and is affecting the whole world. The circumstances of the Brazilian steel industry are impaired by the direct and indirect steel imports, most of which are coming from China and happen under imbalanced commercial orders which are not in accordance with OMC rules (Brazil Steel Institute, 2015).

The total steel imports have more than doubled since the year 2007, which is also visible from the table below.

	2007	2008	2009	2010	2011	2012	2013	2014
Direct Import of Products *(total)*	1.634	2.656	2.332	5.898	3.783	3.784	3.704	3.978
Indirect Import *(steel contained in goods)*	2.348	3.238	2.648	4.243	5.015	4.867	5.502	4.759
Total Steel Import	3.982	5.894	4.980	10.141	8.798	8.651	9.206	8.737

Table 4: Total steel imports Brazil
Source: http://www.acobrasil.org.br/site/portugues/biblioteca/Folder_Economia_2015_ingles.pdf
Date of retrieving: 12.1.2016

To sum up, it is said that the steel industry of Brazil is confronting its biggest crisis. The issue of the "Brazil Cost" is outside of companies' reach and has negative influence on the industry's competitiveness. The outcomes of this uneasy situation are work stoppage, deactivation of equipment, release of workforce and slow – down of investments (Brazil Steel Institute, 2015). Companies don't have any influence on the "Brazil Cost", only thing they can do to gain back their competitive edge is to revise their business strategies and come up with new ideas i.e. new marketing and sales competences, downstream or upstream

integration, improving operational effectiveness etc. The issue of growing steel imports to Brazil has to be faced and responded to. The home market has to be defended and protected from unjust and predacious malpractices with legislations and tariffs on steel imports. At the moment Brazil is considering to increase the tariff on imported steel to up to 20 % in order to support the fighting steel industry (Steel orbis).

Russia's steel industry

In latest years Russia has been placed 5th biggest producers of steel. With the start of crisis, in the year 2009 almost all countries reduced their production of steel, except China, Iran and India. As a result, Russia ranked 3rd producer of steel in 2009, in 2014 Russian steel industry placed 5th biggest producer (Deloitte, 2015, p. 8).

In the beginning of the year 2015, Russia remained the 5th greatest producer of steel worldwide. Projections for the next years say that steel production among each country will not increase significantly, therefore it can be concluded that Russia will most probably stay the 5th greatest steel producer by the year 2020 (Deloitte, 2015, p. 8). The Russian steel sector handles to maintain its utilization percentage at around 80 %, with the help of around 35 % - 40 % being exports to mainly the North African and European regions and the Middle East. In theory, Russia possesses a potential to produce a huge volume of steel. However, in reality the manufacturing limit is somewhere around 100 Mtpa due to the hardship of getting raw materials on the home market. The challenge is to reach the mines, as they are positioned far east and therefore far from the production sites.

Manufacturing of steel has major importance for the Russian nation and economy. The industry's share of Russia's gross domestic product (GDP) is 4 % (OECD, 2013). Many of the steel products produced in Russia are exported mainly to non-CIS countries. In 2015 there is a slightly progressive tendency of exports from Russia. For the future, experts estimate that most likely Russia will be able to keep its place among the greatest producers of steel. However, due to Chinese competition and the growing exports from China, the steel exports from Russia might not be able to increase.

The steel industry in Russia is highly dependent on a few key industries. The biggest consumers of steel in Russia are the following segments: construction industry, motor industry, and machinery and equipment. In last years, making of pipelines was probably the most substantial steel consumer with major steel consumption. The situation of the whole Russian steel segments depends on the state and the situation of the above mentioned industries. In 2015, the steel sector in Russia experienced a decrease due to a lack of investing in the construction segment. According to experts, the demand fall of steel will have declined

by the end of 2015 by 10 % to 15 % (McKinsey&Company, 2013, p. 20). The greatest decay is forecasted in the construction segment. However, a retrieval of the construction segment is foreseen for 2016 – 2017 due to recommencement of investments in the segment and building of infrastructure for sport events like the FIFA World Cup taking place in Russia (Bloomberg Business, 2015).

Russian economy experienced some major trends in the last years. The overall decline of the economy and consequently a regression of the financial situation of the steel industry were followed by an improvement of the overall situation in 2014. In 2014, most companies improved their financial situation. This was mainly caused by the Ruble collapse. A big share of the steel products manufactured in Russia is meant to be exported. For those exported products steel manufacturer earn dollars or euros, while the incurred costs for salaries and conveyance are in rubles (Bloomberg Business, 2015). Due to the decline of the ruble it is possible for Russian steel makers to overpower major competitors like ArcelorMittal. Even before the great devaluation of 47 % of the Ruble, the steel industry in Russia was on a good way. Huge investments were undertaken by Russia's steel makers to enhance and modernize the Soviet steel mills. The modernizations of the mills together with the fall of the Ruble cause the production to be compared to China or Brazil by up to 40 % cheaper. At this time, most of the steel producers in Russia are experiencing the best success in terms of profitability since 2008.

As a result of the slowdown of the economy Russia is undergoing a decline on the domestic market. Due to the lack of progress on the domestic market, it is likely that Russia will aim at doing major exports. Russian exports of steel present a big threat to other major competitors as the Ruble was devaluated.

A disadvantages or negative side of the Russian market is the difficulty of loan refinancing. After the events at the end of 2014 and beginning of 2015 amendments and reforms of intercontinental relations in order to reduce political, macro-economic and fiscal threats have been implemented. Many endorsements were established consisting of also sanctions against the monetary segment of Russia which had an undesirable and damaging influence on the situation in Russia as well as business especially on getting loans and refinancing current loans (Ernst & Young, 2015, p. 8).

The future of Russia depends on a few main key factors. Political instability of the country is could cause the establishment of more restrictions against Russia and therefor imply an economic recession. Russia would export even more steel, and endanger the profitability of Europe as well as other regions. Another key factor is domestic demand. At this point it is

difficult to estimate how domestic demand will grow. The question is whether domestic demand fortifies or if Russia becomes even more competitive in terms of export. According to experts, even if the domestic demand won't grow in the future and economy will be unstable, we have to take into account the production limit of 100 Mpta. To produce more steel, raw material would have to be imported which economically wouldn't be profitable.

India's steel industry

The Indian steel industry represents one of the main industries in India. The first steel production site belonged to Tata steel and was founded in 1907. The Indian steel industry takes 4th place in production worldwide. It is predicted that the Indian steel industry will however continue growing and will eventually be after China the largest producer worldwide. The steel industry was among the first essential segments, which was entirely unconstrained from the licensing regime in 1991 including price and distribution regulations (Ministry of Steel , 2015). The Ministry of Steel plays here the role of an initiator or 'helper' supporting new and currents plants in the opened setup. Since the abolition of controls and regulations on prices, the prices of steel are established through the interaction of market forces.

In the years of 2007 and 2008 a new growth phase for the Indian steel industry commenced (Ministry of Steel , 2015). The developing economy and the increasing need of steel brought a new stage for the Indian steel industry. Nowadays, the steel sector of India can be defined as steady, even though the steel consumption is expected to grow only by 5 % - 6% a year (Ernst & Young, 2014, p. 12). India has a big potential to grow in the coming years. It already represents the 4th largest producers, and it is forecasted that it will take over the 3rd place, which currently belongs to the US. The current production of the steel segment in India represents 2 % of the country's gross domestic product. The industry hires around 600.000 workers (Ministry of Steel , 2015).

India has a population of approximately 1.3 billion people. Constant expansion of infrastructure, larger metropolitan areas, equipment and manufacturing are pushing the economy continuously forward.

India possesses plentiful of resources on the domestic market, especially of iron ore in the west and south. Raw materials are obtainable at cheaper prices compared to other regions. The cost of workforce is relatively low. Programs including the de - licensing and elimination of controls create an opportunity for market entry, input and development of the private division in the steel production. The standing production sites are being upgraded and developed and numerous new divisions are being established on up-to-date, efficient machineries and tools. Due to the economic boom and steady growth, Greenfield and other

development projects have been put up in numerous states of India. Despite the strong sides Indian Steel Industry has been facing many threats and challenges in the recent years.

In the year 2015, India was the only country which is showing an increase of the demand for steel. For this reason, the country of India has gotten to be an objective for imported steel products. Through dumping, local companies are suffering and not gaining from the growth of demand. Chinese imports have increased in the recent years by almost 70 % and it is likely that this increase will continue. Chinese steel have the same quality criteria and are much cheaper, therefor steel imports of China are interesting for steel consumers. Russia and Ukraine political issues and lower Rupee - Ruble exchange – rate, make India a perfect spot for imports of those countries. Because of the low costs of manufacturing in Russia as well as Ukraine and the drop in steel demand Russia and Ukraine are now able to export to India for comparable prices.

Even the Indian steel industry, which has a big unexploited potential is facing difficulties and in order to maintain competitive and to grow it has to consider and numerous important success factors:

Government assistance - the Indian steel sector is been obtaining government assistance throughout the development stage as well as the slow – down. These government advantages contain cheap credits, tax inducements as well as tariff structures. Indian Government plans for the future to introduce further arrangements to face its most substantial challenges.

Capital - in order for the Indian industry to create new volume and capabilities, major investments will have to be made. Furthermore, capital distribution determinations have to be constantly revised and calculated. This issue represents a great task for the Indian steel industry, as accessibility to great capital at affordable and rational costs is hard. The Indian Government will have to establish an encouraging setting for future investors, creditors and steel producers in order to obtain the needed capital (Ernst & Young, 2014, p. 25).

Raw material – abundant amount of natural resources has been an advantage of the Indian steel industry. However, in recent years difficulties in regard of security of raw material came up. Constraints on mining of resources especially iron ore and cocking coal are restraining aspects which influence the domestic market for raw materials. The domestic steel players will have a big issue to face, if the mining sanctions on iron ore in Goa and Karnataka continue. (Ernst & Young, 2014, p. 23).

Sufficient and qualified workforces – with the expansion and growth of the Indian steel industry it will become essential to find enough skilled employees. Estimates show, that the industry will need 2, 4 million to satisfy the expanding industry. Furthermore, initiatives need

to be taken to attain new workforces, educate them, deepen their knowledge and improve managerial skills.

Sustainability, environmental improvements and energy efficiency

Due to ongoing environmental pressure steel producers also have to take into consideration energy efficiency and apply methods to reduce emissions. The increasing shortage of some natural resources has caused the Government the set of limits to use and mining of raw materials. It is therefore not avoidable for steel producers to bring their competitive strategies into line with the sustainability challenge.

China's steel industry

China's steel industry has been growing very fast since the reforms and opening of China's economy. China emerged from an underdeveloped region to be a frontrunner of the steel industry globally. In the 21st century the expansion and development of Chinese industry continued. In 2014 China produced approximately 823 million tonnes which is 49 % of the world's production of steel. This makes China the largest producer of steel worldwide. Moreover, China is far ahead from the second largest producer – Japan, whose yearly production in 2014 was 110 million tonnes (Worldsteel Association, 2014). The majority of steel plants in China are state – owned, therefore on the local market the Chinese government has great power.

In the last decade, the demand for steel in China increased significantly due to expansion of cities, major urbanization and therefore the need of new infrastructure. Throughout this period of urbanization, about 200 million citizens moved into urban areas. It is estimated that since the year 2012, more than half of the Chinese population, more precisely 54 %, lives in metropolitan areas (McKinsey&Company, 2013, p. 9). In ten years, the share of China's steel production more than doubled.

This phase of major development and expansion is followed by a stagnation phase. China is experiencing first negative growth in demand since 1995. For years, Chinese steelmakers have been oversupplying the domestic market with more steel than necessary. Now with the economic slowdown and the negative demand growth for steel, over capacity is becoming a major issue for the global steel industry. However, Chinese steel mills have not slowed down significantly the production yet.

According to experts, the overcapacity is around 30 % and no release is forecasted on the domestic market (CNBC, 2015). In 2014, the demand growth fell by 3, 3 % year on year and it is estimated that it will fall further by 0, 5 % in 2015 - 2016. Because of the major oversupply of steel in China, together with the decline of domestic steel demand, China is

"solving" the issue with exports and dumping prices. In the meantime, Chinese Government has been taking steps in order to reform the steel sector, intensifying its efficiency and eliminating excess capacity (Ernst & Young, 2014, p. 18). Guidelines of the China's State Council were publicized with the aim of shutting down 80 million tpy in 2017 (OECD, 2015). The aim of the Council's plan is to:

"include reasonable capacity utilisation, improved industrial concentration and structure, higher development quality, efficient environmental protection, a normal level of profit margin and asset-liability ratio, and a long-term effective mechanism in self-regulating capacity. The Guideline to Resolve Serious Overcapacity includes supply-side management measures, notably the prohibition of new steel projects, the removal of existing illegal capacity, the enhancement of the entry threshold, and phasing out the backward capacity by raising prices of power and water. Financial support could be provided if difficulties linked to capacity shutdowns and unemployment arise." (OECD, 2015, p. 15)

These reforms are to stop adding further capacity, diminish obsolete capacity and also to advance efficacy of the steel sector. However, it will take some years to reach any significant decrease of oversupply.

On the picture below we can see the world steel production from 2001 until 2020 according to estimated data. Looking at China the increase in production in 2014 was fairly restrained showing growth of 0, 9 % compared with the year before. In the first half of 2015, the production declined by 1, 4 % (Ernst & Young, 2015, p. 7).

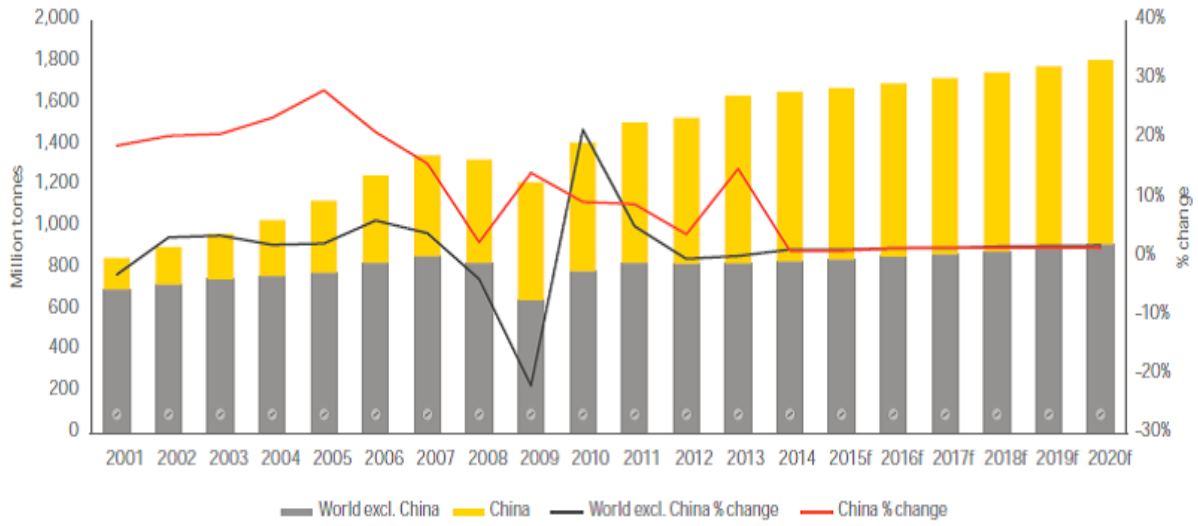

Figure 18: Global steel production
Source: http://www.ey.com/Publication/vwLUAssets/EY-global-steel-2015-2016/$FILE/EY-global-steel-2015-2016.pdf
Date of retrieving: 12.12.2015

To regain the competitive edge and enhance efficiency, Chinese steel makers will have to take some actions in their strategies, including major local consolidations and mergers and acquisitions in order to get access to troubled overseas countries and their market and to fight excess supply (McKinsey&Company, 2013, p. 17).

4.5. Strategic view

The next chapter gives a strategic outlook including a short SWOT (Strengths, Weaknesses, Opportunities and Threats) analysis of the EU steel industry. SWOT analysis is conducted based on the previous chapter of the thesis as including key facts of the European steel industry, competitive framework of the steel industry and competitor analysis as well as the theory on competitive strategies and strategic tools. With the help of the SWOT analysis the competitive positions of the European Steel industry vis-à-vis external non -European players is examined. The SWOT Analysis is a helpful tool to establish a strategic state and to formulate new strategic approaches or postures which will be executed in the last chapter of this thesis.

4.5.1. SWOT Analysis of the Industry

With the help of the SWOT analysis an in-depth industry exploration is conducted. The analysis demonstrates the key factors required for growth and competitiveness. In this case, SWOT shows that the European Steel Industry is currently confronting major problems numerous of them caused by globalization. In the next paragraphs the main aspects of the European Steel Industry will be divided into a SWOT Analysis.

Strengths

- The European steel industry is a **well – establishes industry with a strong position.** It is a regional industry which functions also across state borders. A strong position in high end domestic markets and sound relationships with clients is characteristics of this well - established industry. This obviously represents a big advantage as it is a basis for pursuing new opportunities in new export markets. Nevertheless, the global competition is fierce meaning that constant upgrades of products and progress in services must be made whilst maintaining low costs.

- **Technological improvement, product advance leadership and high level of quality** describe the European steel industry. The attention concentrates on creating valuable

and quality compound goods as well as results and answers. The European steel industry takes 2nd place after Asia in production of steel. Regarding equipment, product value, inventions and production excellence Europe has a progressive steel industry. Quality production reinforced with innovative equipment and focus on consumer explain Europe's position as the second biggest steel producer globally. The ability to meet customers' needs and to offer valuable good quality products have until now created a competitive advantage for the European steel industry.

- **Research and development competences** present a significant requirement for the existing and forthcoming competitive position on the marketplace. Moreover, high R&D potential makes the industry also appealing from the investment and collaboration standpoint. European high level of know-how implies an industry which is affluent in R&D. European steel producers invest a relatively high amount in research and development (European Comission, 2008, p. 120). It could be said that their technologies and the process of steelmaking are more advanced than in other parts of the world. However, competition is high therefore continuous improvements in product specialization should be made.

- **Intensity of recycling** is another point that is seen as strength of the European steel industry. As mentioned in the first part of the thesis, steel is recyclable. It is possible to reprocess steel and use it endlessly. When reusing steel no harm to the quality of steel is made (Eurofer). Steel used for the production of automobiles is recycled at a rate of 95 %. Moreover, steel used for packaging is reprocessed at a rate of 74 % in Europe, which causes steel to be the most recyclable packing material (Eurofer). Numerous products of steel, like car engines, wind turbines etc. can be reproduced for reuse, benefiting from the permanence of the steel pieces. Reproduction of steel reestablishes durable but worn out products to a new and improved form. Due to the high level of recyclability of steel and therefore the savings of valuable natural resources in the European industry, Europe gains a competitive edge vis a vis other industries like Asia and the Middle East. However, it is argued that the possibility of additional intensification of recycling of steel may have reached the maximum (European Comission, 2008, p. 121).

Weaknesses

- **Reliance on imported natural resources**

  To certify the supply of raw materials has become one of the key tasks of steel producers. Raw materials nowadays also play an important role in determining the future location site of new investors. The BRIC countries offer in this regard more advantageous locations with good approach to raw materials (European Comission, 2008, p. 125). Even though the raw material prices fell in 2014, it is questionable if this trend is likewise to continue. The prices of natural resources are very volatile therefore steel producers have to be very careful about exceptional and unpredictable volatility (Ernst & Young, 2015). Consequently it is indispensible for steel enterprises to ensure effective usage of raw materials to guarantee that the volatility effect will be limited. However, the need to import raw materials such as coal or energy not only affects the European Steel industry, but also the competitors outside of Europe.

- **High energy use**

  Production of steel is extremely energy intensive. This causes the industry to be more exposed to rise of energy prices as well as instructions and guidelines intended to lessen emissions (Worldsteel Association, 2014). Yet still, vis-à-vis different regions, the production of the European steel industry is more effective in energy use. However, electricity prices is Europe are extremely high. In other regions of the world electricity tariffs are half of the tariffs in Europe (Ernst & Young, 2015, p. 20). It can be said that the energy intensity of the European steel industry is not a weakness vis a vis other steel producers, however Europe's high energy prices are. "*As an estimate, European steelmaking operations are at a US$1 billion energy-cost disadvantage compared with their US counterparts."* (Ernst & Young, 2015, p. 20)

- **Employment of accomplished workforce**

  Employing accomplished and skilled workforces is considered a weak point of the European Steel industry. As the European working population is aging in the long run, due to the increase of demand for trained and skilled employees, difficulties in recruiting will have to be faced. The idea of the steel industry being a "dirty" industry diminished. Today steel industry is mostly viewed as a modern and high-tech industry. However, young graduates tend to apply to different programs; the percentage of

graduates applying to work in the steel industry is low. These staffing problems create a weakness of the European steel industry. On the other hand this issue can be regarded as a challenge which can be reaches with continuous education and teaching programs.

- **Only partial advantages from international trade**

  Regardless of the major boom European steel industry experienced in the last decade, the advantages of the extra regional business have been only mild. This is caused by the fact that Europe has become a major importer of steel. In 2014 global steel exports increased by 9 % compared to the year before. This was mainly caused by the growth of Chinese exports. The fact that the steel demand in China went down resulted in the intensification of exports of Chinese steel (Ernst & Young, 2015, p. 8). Currently numerous trade barriers are being implemented to obstruct steel imported products from China, however it is predicted that eventually Chinese imports will make their way into European markets.

  However, it has to be mentioned that this weakness of limited advantages from extra regional trade is relative. Some companies like ArcelorMittal were able to make full use of the internationalization and trade in extra regions (European Comission, 2008, p. 22).

Opportunities

- **Opportunities of entry to new markets and increased bargaining power through M & A**

  In the past years significant mergers within the steel industry took place. With the acquisition of the Luxemburgese Arcelor Group by the Industry leader Mittal in 2007 the biggest merger of the steel industry took place. In subsequent years, it always came back to mergers in the steel industry. Nevertheless, other sectors where in terms of M & A activity much more dynamic: the degree of concentration the steel industry is compared with other industries, such as nickel, copper or industrial gases remains low (KPMG, 2012, p. 17).

  However, additional consolidations within the steel industry would be possible and advantageous. Through mergers and acquisitions the balance between the competitors on the demand and supply side is coordinated and the bargaining potential is

increased. Acquiring non - European companies and fusions of European and non – European companies creates new chances and possibilities for entry to new markets (European Comission, 2008, p. 127).

- **More effective and adaptive methods and smart production**

  Top quality, minimum costs, punctual delivery and customized production are features which clients aspire and foresee. Steel is a material which is widely applied and the use of it is developing, involving generally various industries. An affluent customer base and successful cooperation with clients, new machineries and expertise are all qualities that the European Steel Industry has at its disposal in order to exploit new chances on the market. So as to keep the competitive strength and to acquire new market opportunities the industry hast to preserve further investments in the fields of technology improvement and operation progresses. Knowledge distribution, improved organization and new information technologies mean new possibilities and options for steel producers (European Comission, 2008, p. 128).

- **Well- established customer relationships as the base for improvements and market opportunities**

  In order to create new market opportunities the industry has to be reactive and respond to the changing needs of customers. As the requirements of customers, especially international customers are getting stricter and more multifaceted the industry has to remain being responsive. Because of the complex customers' requirements, firms have to create the chance to thrive and differentiate. Customized top quality products in collaboration with customers are possible ways to differentiate from the competition. Furthermore, maintaining in a deep collaboration with clients positively affects both parties and is therefore important (Ernst & Young, 2015, p. 13).

- **Energy efficiency through enhanced technologies**

  Technologies are a very important part of the steel industry. Hence, more efficient technologies create an opportunity as regards energy efficiency and the reduction of emissions. Technological improvements and modernizations with the objective of "cleaner and safer technologies" are necessary and to a degree compulsory by law. With "cleaner and safer technologies" a deliberate strategy to track new market opportunities is created. These opportunities include discovering the market for products with high ecological requirements. As regarding the European Steel industry

is relatively an efficient in terms of energy use. Therefore, in order to take competencies to a higher level, a technology breakthrough which entails constant investments will be is necessary.

- **Focus on value creation instead of price competition**

  The advantages of the European steel industry are quality top products and advanced operation processes and technologies. The European steel industry faces an opportunity to further concentrate on value creation and top quality high end products as a great amount of prognoses estimate that the request for high end products will carry on rising. The focus on the reduction of costs and price competition would not be an advantageous approach as other regions have better conditions for price competition. Instead, the focus should be on value added products and services as well as good relationships with customers (European Comission, 2008, p. 126).

Threats

- **Chinese Competition and overcapacity**

  As seen from the competitor analysis, the competition from China is considered a major threat for the European Steel Industry. As shown in the previous Chapter, China's production of steel increased significantly since the year 2000. In 10 years, from 2004 until 2014 the Chinese steel production managed to double. The rise of the steel output was powered by the economic growth and demand. Furthermore, China has also become the greatest exporter of steel products worldwide. Its most significant export destination is the EU28. Due to this reasons, China is considered as a threat to the European steel industry. Additionally, China profits from numerous state funding indicating cost benefits.

  However, after years of rapid Chinese growth and demand of steel a slow- down occurred. The rapidity of Chinese economic growth headed to two situations. Firstly, capacity construction in China did not expect a go-slow at this time, therefore causes an excess capacity on the global steel industry. Secondly, through the high demand of raw materials in China, the prices of raw material increased worldwide and therefore augmented the costs of steel producers overall (Wordsteel Association, 2014).

- **Rivalry with other countries**

Not only China represents a threat for the European steel industry. Other countries like India, China, Brazil or Russia belong to the top 10 steel producers of the world. They have certain benefits available which the European countries lack. For instance, Brazil's domestic reserves of iron ore, low costs of energy and labor, makes Brazil's costs of production the lowest in the world. Consequently, it is assumed that the exports of Brazil's steel products will maintain to increase. It is also expected that India's steel industry will grow and prosper. The steel manufacturers of India are striving to reach the worlds level of quality, efficiency and proficiency.

- **Falling EU share in global steel production**

  No great advantages were gained by the European steel industry through the global growth of steel demand. As a consequence Europe's share of world production declined by a great percentage. In 2004 Europe's share of world production represented 19% whereas 10 years later, in 2014 Europe's share declined to 11%. Experts predict that this tendency might continue in the next years.

  Furthermore, with the process of internationalization companies outside of Europe are becoming global by participating and obtaining companies in other regions (Ernst & Young, 2015, p. 13). Throughout collaboration with European affiliates greater entrance and access to European marketplace might be achieved. However, important is to mention that this possible threat is highly dependent on the type and characteristics of the enterprises created.

- **Rising transportation costs and failing transportation and logistics infrastructure**

  As being discussed in the previous chapters transportation is a major and important input factor in the process of steel production. Around 30% of all steel products travel to different countries, or even oversees to other continents. Transportation costs amount to 5 – 15% of the selling price, thus being said transport is also a major cost factor (European Comission, 2008, p. 54). If transportation costs rise, it is harder for European steel makers to compete in export markets. The major fall of oil prices in the last year posed an opportunity for the steel industry, however this trend is not expected to continue. It is forecasted that oil prices will increase in the next years therefore freight costs will increase. From this point of view increasing transportation rates create a threat for the European steel industry by causing exports to be more expensive.

Furthermore, transportation of goods and services within Europe is compared to other countries like USA more expensive. This issue is caused by deficiencies in cross border railway conveyance and differences in national road instructions. Hence, not only the fluctuating prices of freight rates but also deficiencies in the transport markets present a threat to the European steel industry.

- **Demographic alterations in due course**

  The European working population is aging. Demographic alterations point toward a decreasing European workforce and thus imply a greater challenge of drawing enough skillful and qualified employees (European Commission, 2015). Besides, to attract young workers to work in the steel industry is a hard task, as the steel industry is not viewed as a very attractive industry. The number of students applying for colleges, Universities and programs in the technical field is declining. Thus, this point can be regarded as a threat to the steel industry, as it is to other industries in Europe. Thus the tendency in this range is that rivalry for qualifies skillful workers rises within industries and outside between corporations in other regions or countries (European Comission, 2008, p. 119).

- **Deficiencies in energy markets**

  Energy is the main input factor when producing steel. Even though the energy consumption when creating steel has been decreased by 60 % in the last 50 years, it is still considered as a very energy intense industry (Worldsteel Association, 2014). On the picture below the energy consumption over years is illustrated. We can see that since 1960 until 2013 the energy consumption declined by 60 % due to progress in energy efficiency.

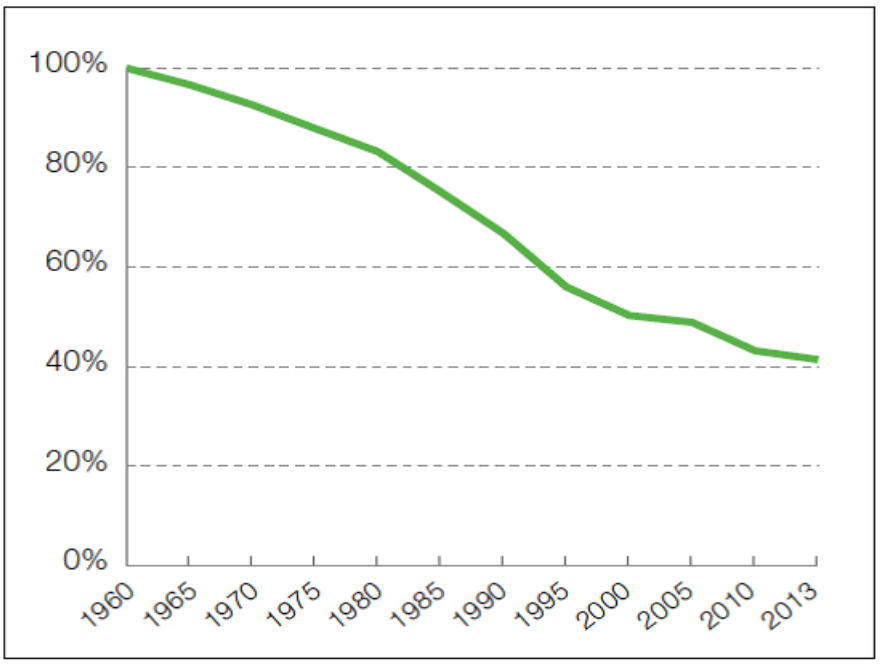

Figure 19: Global energy consumption/tonne of crude steel
Source: http://www.worldsteel.org/publications/fact-sheets/content/02/text_files/file0/document/fact_energy_2014.pdf
Date of retrieving: 22.12.2015

However, even with the reduction of energy use energy costs present a major challenge. Europe faces much higher energy prices then the rest of the world. Even within Europe, there are great differences between countries. The ability to compete and competitiveness of the European steel industry is significantly affected by the disadvantage of high energy prices.

- **Rising ecological pressure and environmental legislature**

  European Union poses strict environmental regulations and limits taking into account the quantity and use of natural resources. Steel producers as well as other metal industries dread the regulations and eventually might consider move out of Europe where the limits are not that restrictive (Tolbaru, 2015). The limiting environmental regulations might be followed by a loss of attractiveness and competitiveness vis a vis other steelmakers which are not confronted with such strict environmental guidelines and rules.

  The European steel industry is coping with bylaws concerning waste, fumes deterrence, CO2 emissions and other. Efficiency of energy use has been improving in the last years radically. The steel industry argues that after 40 years of constant

improvement the maximum of technological advances and enhancements has been reached.

4.6. Possible strategic decisions for the European steel industry to maintain the competitive edge:

Based on the SWOT analysis in the next part possible strategic decisions are worked out. The next part of the thesis focuses on the pursuit of opportunities, suppression of weaknesses by enhancing performance, handling and encountering threats and boosting already existing strengths.

As seen from the previous chapters as well as the SWOT Analysis the European steel industry has been undergoing a difficult phase. Moreover, the coming years the industry will have to confront more issues and tests. Each player in the steel industry will have to adapt a certain path to sustainability in the next years (McKinsey&Company, 2013, p. 13). Moreover, there is no single solution. To sustain competitive and thrive each player has to consider certain factors, or a certain agenda for itself, embracing focus on value creation and value added products, possibly upstream engagement, product differentiation and many more which will be presented in the next chapter.

Through globalization countries, regions and continents are more and more dependent on each other. Throughout businesses, ventures and financial arrangements countries influence each other and have a great impact on each other (Ernst & Young, 2015, p. 4). The issues of the European steel industry caused by the major globalization phase are the rise of new players, overcapacities, discrepancies in raw materials, volatile prices of raw materials and market deficiencies in terms of tariff barriers.

Moreover, not only globalization is creating these confrontations. Climate change is another important factor that influences the steel industry and has to be taken into account. These challenges must be considered not only by individual enterprises when deciding upon their business strategies but also by the policy makers and the Member States.

However, Europe is in a good spot to overcome these challenging tasks and to further develop its strengths and advantages.

In the next paragraphs considerations for the European steel industry will be discussed. 7 fields of actions have been worked out which should be deliberately thought through by individual companies in their future strategic path. It is important to say that consideration for

the legislation and Member states are discussed only superficially in the below paragraphs as the focus lies mainly on companies and their individual competitive strategies.

4.6.1. Strategic considerations for the European steel industry:

Technological progression and process development

European steel industry is using advanced technologies however competition is also spending and advancing in this field. For the European Steel Industry it will stay essential to innovate, however the attention should be placed on making the procedures of steel production more proficient. According to the view of McKinsey & Company the estimated potential to reduce the energy use is around 12 % (McKinsey&Company, 2013, p. 35).

The competitive advantage of the European steel industry lies in advanced technology, invention capabilities, product class and experience and knowledge. However, meanwhile customers are getting more demanding, their expectations are changing and satisfaction is harder to achieve. Also, competition is trying to catch up with Europe and is constantly improving its competencies. Therefor for European steel producers to be able to keep the competitive edge in terms of technological processes it is essential that improvements and advances in this regard are made continuously. Of big priority should be improvements of efficiency and therefore the push down and control of costs and energy usage (European Comission, 2008, p. 133). Furthermore, the significance of just-in-time distribution and delivery of quality products to demanding customers shouldn't be forgotten.

As already state in the SWOT analysis, one of the strengths of Europe's steel industry is a high stance in the usage of progressive technologies, however according to experts and consulting agencies unused potential which could be exploited exists. Consequently, not to lose the competitive edge requires constant development of R & D and expansion of machineries as well as other technologies.

R & D project should be financed by the steel producers in order to:

- Produce good quality steel products based on newest technologies in order to keep the leading stance in matters of function range, sustainability and product merit
- Achieve more efficient manufacturing, logistics and supply
- Guarantee increased effectiveness in the downstream production process as well as increased adaptability

According to the European Commission *"intelligent manufacturing and supply chain management processes including the development of better organizational and management system i.e. Lean, knowledge management and the introduction of new ICTs can contribute to developing more competitive European steel manufacturers in the years ahead."* (European Comission, 2008, p. 133) Furthermore, the European Commission is stating that the EU needs to boost investments in R & D projects such as the ESTEP (the European Steel Technology Platform) (European Comission, 2008, p. 75).

These above mentioned suggested actions have to be considered by each steel producer for the company, as not all actions are suitable for every steel producer.

Improved market competitiveness through product differentiation and customer orientation

In order to stay competitive in today's hard situation on the market steel companies have to constantly better it selves in as many ways as possible. Product differentiation and customization is one strategic possibility to guarantee the success and competitiveness of Europe's steel segment. Europe's steel industry is known for its high quality steel products. Some steelmakers are aiming at collaboration with their clients in the initial phase of product development. To differentiate and customize products according to customers' needs can create a great advantage for the producer and boost the competitiveness on the market. Some producers like Baosteel and Nipponsteel are cooperating closely with their clients in order to develop products according to their customers' requirements and thus to offer a better overall solution (Ernst & Young, 2015, p. 19).

In order to pursue differentiation of products the business pattern needs to be altered. Instead of concentrating only on the product and its quality the attention has to be on the whole procedure of manufacturing, sale, distribution and service. This way production and services are joined together and present a higher value to clients

One possibility how to increase the service focus is to develop deep connection with customers. Some steel producers have already relocated themselves to be near customers in order to intensify competitiveness. Some examples are: US Steel which lately rearranged its business processes to concentrate on "customer groups". ArcelorMittal started manufacturing via joint ventures placed in China to chase its clients into the booming automotive industry of China. POSCO on the other hand commenced "technical service centers" to deliver results straight to customers (Ernst & Young, 2015, p. 20).

Nevertheless, expanding with the attempt to be nearer to customers is not always easy and there are barriers in form of environmental directives, energy rates as well as hardships with land approach (Ernst & Young, 2015, p. 22).

Focus on climate change

Climate change is considered among some experts as the biggest challenge of the 21st century. Even though the climate change represents a challenge for the steel industry, it can be seen and exploited as an opportunity. In order to obey the rules, environmental regulations and to keep increasing efficiency steel makers need to constantly invest and develop new technologies which will help them keep their competitive advantage on the market. Improving efficiency of energy means a decrease in emissions and therefor a decrease of costs. Environmental sustainability is not only required by the legislation, but it is also included in every company's Corporate Social Responsibility (CSR) agenda.

Accordingly, financing new technologies which will back up environmental sustainability, R&D, and manufacturing processes enhancements all represent a strategic opportunity, especially a strategic option to companies which want to appeal to clients who are environmentally mindful and socially sensible.

The climate challenge can be overturned by the European steel industry into an opportunity to gain new clients and enter new markets if essential steps are taken and a "pro – active strategy" is implemented.

One of a possible strategic suggestion for the steel industry would be to engage in more RTD programs like the ESTEP program. The aim of the ESTEP program is to propose a research outline in four different ranges: "1) safe, clean, and cost-effective technologies; (2) rational use of energy, resources, and residues management; (3) appealing steel solutions for end users; (4) and attracting and securing qualified people to help meeting steel sector ambitions" (European Comission, 2008, p. 132).

Furthermore, another program developed by Worldsteel is the "Climate Action recognition program" which regulates a mutual procedure to evaluate the CO2 footmark of steel mills. This procedure was successively converted into an international standard 14404:2013 (ISO 14404:2013) (Worldsteel Association, 2015). The program opened in 2008 and its followers have been ever since evaluating and measuring their CO2 release as well as trying to enhance the examining procedure. The Climate Action program has been broadly accepted and followed by numerous steel producers and is also being used in articles as well as reports on environmental sustainability. One strategic step towards improved competiveness for steel

makers would be to engage in this Climate Action program which gathers and evaluates CO2 emissions.

Apart from the Climate Action program and the ESTEP program there are more ways how to engage in the climate challenge.

Some of the actions to be carried out in order to participate in the climate challenge were described and encourage by the Worldsteel Assosiation in a Worldsteel position paper "Steel Contribution to a low carbon future and climate resilient societies" (Worldsteel Association, 2015).

- Breakthrough technology advancements

  New technological advancements and technologies in order to keep the emissions lower or at least at the same level is a crucial point for the steel industry. Numerous research programs have been launched which are examining the environment and exploring how to lower the carbon dioxide emissions. One example for such a program is the ULCOS II – Ultra low CO2 Steelmaking research program. The target of the mentioned ULCOS II is to create new machineries and technologies which radically diminish the CO2 emissions (European Comission, 2008, p. 75). Numerous partners from steel makers to academics and test centers have already entered the program.

  One program that is new technology progress is the ESTEP Program which was mentioned above.

  In the USA a pioneering carbon dioxide program to create a flash procedure of iron production is being developed by the American Iron and Steel Institute and supported by the US Department of Energy. Moreover, nations of the Pacific Rim decided to join forces and develop a manual named "State of the Art Clean Technologies" (SOACT) to disclose efficient and sustainable methods of steel production.

  Engaging in these programs will help the steelmakers to develop new environment friendly technologies and improved processes. This way a new opportunity arises for the steel producers, in detail opportunity to enter new markets and gain new clients which are environmentally friendly and aware.

- Life cycle attitude

  Complete life cycle approach should be adapted so as to lower carbon emissions. Not only emissions related to the manufacturing process of steel are taken into account here, but also the decline of energy use from the depletion of newly created products.

Moreover, the ability to recycle must be strongly considered while in the process of deciding about production and material (Worldsteel Association, 2015)

- Recycling and reprocessing

  Steel is a material which can be ceaselessly recycled without deteriorating and losing of any quality (Eurofer). Furthermore, it brings other advantages as no need for discarding is required and therefor buildup of discarded steel is reduced. The advantages of steel recycling, combined with the work to encourage steel recycling has led to steel being one of the most recycled materials. However, recycling is restricted by the amount of scrap available. Here, guiding principles can specify more assistance on recycling by putting importance on recyclability and demounting (Worldsteel Association, 2015).

Advance the skill base

To attract enough skilled workers to the steel industry has been a challenge of the European industry for a longer time. Now, as the European work force is decreasing the rivalry between employers to attract experienced and competent workforces increases.

Moreover, the steel industry is not seen as a very attractive industry amongst young people. Therefore, young students tend to choose another field of study.

In order to be able to attract workers especially in the future, companies should improve their attempts to keep and extend their stand of trained and accomplished members. Ways to do that would be for example through directed teaching and training agendas for untrained workers and through the financing of new specialized programs. Furthermore, efforts to enhance the aspect and picture of the steel industry, so it is not seen as a “dirty industry” should be made. Moreover, systems to reach knowledge sharing and distribution have to be implemented. A major part of these tasks is in the hands of the human resources department to ensure strategies and successful incorporation of workforces (Ernst & Young, 2015, p. 21).

In conclusion, the strategic possibilities in this field are:

- Efforts to improve the picture of the European steel industry among young people
- Permanent knowledge developing strategies for employees of the steel industry
- Projects to attain and develop abilities

Dealing with excess capacity

Excess capacity is regarded by the OECD Steel Committee as posing one of the key challenges on the global steel industry. The OECD has been discussing the issue of overcapacity for some years now and calls upon fighting this problem which may even progress in the future. The studies which were done by the OECD assume that the world's steel production capacity will continue to increase (OECD, 2015). The OECD is urging the Governments to take some steps like eliminating distorting rules and policies which support the development and addition of new volume and defer the shutting down of existing but worsening businesses (OECD, 2015).

Since excess capacity might be the biggest challenge of the global industry in these days, focus should be laid on dealing with the steel overproduction. The capacity of steel production is two times higher than it was 15 years ago. Increase of capacity happened due to major infrastructure projects in developing countries as well as the increase of production activities and industrialization. In the last decade overinvestments in new capacity have been made which is one of the reasons for global excess capacity. Secondly, with the crisis , demand for steel weakened and never fully recovered. A slowdown of some major world economies like China occurred, which wasn't expected and influences the whole world including the global steel industry. Furthermore, steel producers have high exit barriers. To completely leave the industry is in some cases not an option. Moreover, Government policies are often supporting the steel overcapacity.

The inequity will most likely maintain expanding if steel demand stays moderate and investments grow. Unless attempts and steps are undertaken by the Governments and the industry as a whole, this issue will present a major risk on the financial situation of steel segments.

In 2014 there was a major difference between the production volume (2, 24 billion tonnes) and crude steel demand (1, 6 billion tonnes). Even with this big gap between production capacity and demand, an increase of 5, 4 % by 2017 of production capacity is forecasted by OECD (Ernst & Young, 2015, p. 13). By 2017, it is predicted that especially the non-OECD countries will expand their capacity and their share of world's capacity will surge up to 71, 4% (OECD, 2015).

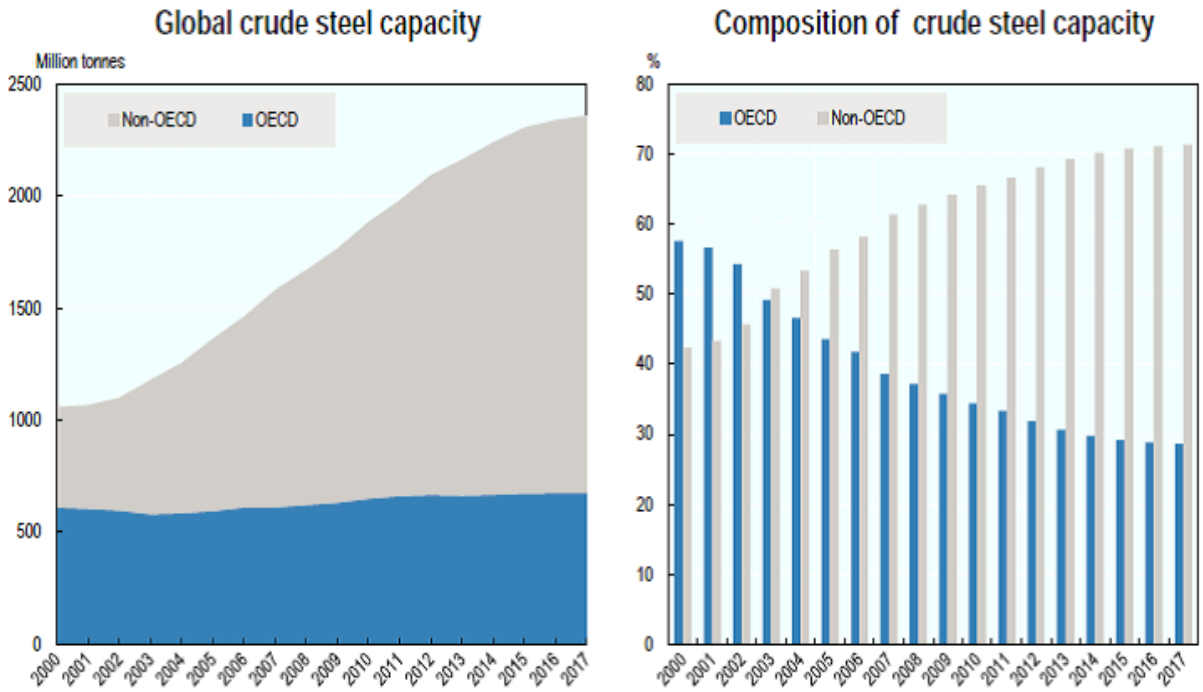

Figure 20: Nominal crude steel capacity in OECD and Non-OECD Economies
Source: http://www.oecd-ilibrary.org/docserver/download/5js65x46nxhj.pdf?expires=1459963250&id=id&accname=guest&checksum=C268CB9E303494353525A6A55C98FF8C
Date of retrieving: 22.1.2016

In order for the European Steel industry to maintain competitive and thrive, steel producers need to adjust their competitive strategies to the altering market situation.

- Each steel producer has to count with the current global oversupply when preparing for the next period and planning in order to avoid major failures.
- More steel demanding infrastructures have to be encouraged in the construction sector so as to boost the permanence of infrastructures.
- Constant valuations and estimates of the world's demographics, geopolitical situation, energy market developments, trends in production, resources availability and technology to measure steel demand in the region in order to avoid the creation of hanging capacity have to be carried out (Ernst & Young, 2015, p. 3).
- Promotion of environmental norms in order to incite the shut - down of obsolete capacity (Ernst & Young, 2015, p. 2)
- Provide support and encouragement of steel producers to consolidate

  Each steel producer can undertake certain steps and action in order to deal with excess capacity. However, many of the necessary actions to be taken are on the legislative level and impossible to be carried out by the steel producing companies it selves.

Nevertheless, the interference of Governments on the international level should be limited, making it possible for market to work right, without disturbing policies (subsidies, trade barriers, etc.) (OECD, 2015).

Encourage and increase consolidation and mergers

The steel industry experienced major consolidations and mergers in the middle of the 70s and also again in the 90s. These periods were all stages after an economic downturn and are all characterized by major consolidations to stabilize the effects of the economic decline. In the 70s, in order to regain success, state owed companies gotten to become private. Another strong consolidation phase took place from 1995 until 2005. By the year 2005, at the end of the second big consolidation phase, world's top 10 producers provided 29 % of the world's steel production, which is 9 % more than it was in 1995 (Ernst & Young, 2015, p. 16).

After the latest economic slowdown, no intense consolidation has followed yet. This is mostly caused by the difficulty to bring in the cash necessary for growth and expansion. Consequently the quote of the word's share of steel supply among the top 10 producers is approximately 28 %, practically unmoved from 2005 (Ernst & Young, 2015, p. 16).

However, consolidation will be driven by the need for globalization. In this difficult situation that the global steel industries are facing today, steel producers have to strive for economies of scale, magnified product range and protracted value chains. According to experts, it is highly possible that these strategies will be followed on a broad level. (Ernst & Young, 2015, p. 18)

Some steelmakers are already pursuing this kind of growth strategies, searching at a possible way of expansion into areas of high steel demand regardless not considering location.

With consolidations and augmented market concentration would bring the following advantages for the European steel industry:

- better negotiation abilities with bankers and therefor easier inflow of capital
- greater negotiation control with clients and providers
- enhanced economies of scale in manufacturing and value added chain
- greater power to exploit synergy effects across the world
- improved stability of free cash flows and therefor better risk evaluation

For future success of the European steel industry consolidation in order to intensify market concentration is necessary. However, to guarantee access to raw materials in the future

strategic deals also in this regard should be made. This issue will be discussed in the next paragraph.

Upstream participation and integration

One down side of Europe's steel industry is the dependence on raw materials. This issue is a great risk especially in stages of supply-demand disparity. Numerous countries have better access to raw materials and cheaper energy than Europe; therefor they are more appealing from an investment locality viewpoint (European Comission, 2008, p. 127).

This matter has been a topic in Europe's steel sector for a longer time and is of high importance. In order to compete effectively steel producers have to increase upstream engagement. Companies that have the funds and are able to do so will have a big advantage.

Some companies are already doing so but some producers are lacking the funds necessary for such an investment.

According to European Commission, in order for the European steel industry to guarantee access to raw materials in the future two options are viable:

- Boost upstream engagement and vertical integration via M&A, joint ventures and partnerships
- Financing and progress of technologies in order to enhance raw material exploitation and efficiency (European Comission, 2008, p. 127)

While the above mentioned steps present possible strategic options for the European industry to maintain competitive in the future not all of the steps are doable by the industry but should be carried into practice by the legislation. Furthermore, some challenges might not be displayed and mirrored in the strategic options above. Concerning the long - term success, competitiveness and effectiveness of the European steel industry, further questions have to be asked and considered when deciding about the strategic approach.

5. Conclusion

It is a well - known saying that the only constant in the business world is change (Martin, 2014). We are living in a constantly changing multispeed world. The rate at which change occurs in the 21st century has increased significantly.

In the 50's when the economic environment was rather steady and monotonous it was reasonable for companies to focus on long term targets and try to achieve them (Ansoff, 1965, p. 23). Nevertheless, environmental conditions are undergoing constant changes and transformations. Although it could be said that the environment has always been undergoing changes, the current phase is much more characterized by the speed and intricacy of environmental alterations. Rivalry amongst companies is vibrant and dauntless.

Geopolitical, social and economic conditions have gotten to become more multifaceted and vigorous. Considering these forces and their conditions, companies have to adapt as quickly as possible in order to maintain competitive and to avoid failure. Conditional to the current forces on the market, new strategic approaches and steps have to be developed in order to attain a new strategic stance. Each company has to consider its strengths and opportunities as well as threats and challenges in order to be able to figure out its most effective strategic position. Numerous factors have to be considered, mainly technological change, environmental uncertainty, customers' needs, political situation, input factors as well as the rivalry and many more (Dagnino, 2012, p. 13). Due to the constant change in our multispeed world it is a major challenge for companies to maintain their competitive edge in the long term. Often companies have to come up with a new competitive advantage and to completely adapt the strategy from scratch.

The global steel industry underwent a major boom after the acceptance of the liberalization policies. Internationalization and the need for globalization have caused an intensification of the competition and an increase of the complexity of customers' needs. The major boom in the steel industry was mainly caused by the development and infrastructure projects and has caused the production in the year 2014 to be 1.665 mt which shows a 1 % increase compared to 2013 (Worldsteel Association, 2016). Estimations say that by the year 2050 the steel usage is predicted to be 1, 5 times higher than it is now. This will most probably happen in order to support the rising population as well as the increased urbanization in the years to come (Worldsteel Association, 2016).

The steel industry is after the oil and gas industry the biggest industry in the world. Steel is a fundamental substance in our daily lives. It is an essential substance in modern cities and in other sectors like the construction sector, automotive, machinery and many others.

Consequently, the situation of the steel industry is strongly dependent on other industries – the main consumers of steel.

Europe's steel industry is considered to be the second largest globally with a share of around 12 % of global production. About 50 % of the world's production volume is covered by China, whose production output doubled from the year 2004 until 2014 (Worldsteel Association, 2015). However, the crisis of 2008 also affected the European steel industry as every other industry. Steel demand never fully recovered after the crisis and maintains at the below crisis level until today. However, the production volume is increasing from year to year which implies that major over supply is existent in the global steel industry. Excess capacity was named as the greatest challenge of the global steel industry and places a great threat to the European steel industry as well. Fighting excess capacity is a long term issue and it will take some years until some significant capacity reduction is reached (Ernst & Young, 2014, p. 5). However, there are steps which European steel producers can undertake when dealing excess capacity. It is important that it is counted with the excess supply when doing strategic planning in order to avoid failure. Moreover, constant evaluations of international drifts and development of the market for raw materials, energy, transportation and technology have to be observed. Other steps when handling excess capacity is close forecasting of demand and supply tendencies and promotion of more steel demanding constructions. Moreover, steel producers should closely consider the option of vertical integration or consolidation. That way better negotiation powers, decreased risk valuation and better access of raw materials would be reached. However, in order to carry out this step high capital is required which might be a difficulty for some steel producers. However, if a steel producer decides to collect the necessary funds and invest and consolidate or integrate vertically it will gain a major advantage not only in the short run, but also in the long run. In spite of the strategic steps that can be carried out by the steel producers to fight excess capacity, some decisions to protect the domestic market from Chinese dumping prices lie in the hands of the legislation and the Government.

Apart from excess supply, the thesis identifies more threats and challenges as well as advantages and opportunities in the European steel industry. Combining the threats and challenges with opportunities and advantages taking into account todays macroeconomic situation as well as steel market developments and competitive forces, 6 strategic steps were worked out on which the European steel industry should focus. It is important to mention that the 6 strategic steps are the outcome of the analysis that was carried out throughout the thesis

and present strategic suggestions. In the following paragraph the strategic suggestions which are analyzed in the previous chapters are concluded.

Apart from dealing with excess supply, another major challenge European steel producers have to face is climate change. However, dealing with the climate change can be exploited as an opportunity to enter new markets and to appeal to clients who are environmentally conscious and aware. Focusing on climate challenge includes constant investment in new groundbreaking technologies and engaging in programs like the ESTEP. Furthermore, adapting a life cycle approach and recycling are also actions to engage in the climate challenge.

One of the strategic suggestions for the European steel industry is to keep developing and investing in new groundbreaking technologies. Innovative technologies and capabilities represent a competitive advantage of the European steel industry. However, unused potential which could be exploited exists. Investments in R & D projects should be made in order to develop more efficient technologies in terms of costs and energy usage; also, to achieve more efficient manufacture, logistics and supply and to guarantee increased effectiveness in the downstream production process as well as increased adaptability.

Product differentiation and customization is one strategic possibility to guarantee the success and competitiveness of Europe's steel segment. Cooperation with clients from the early stage of product development in order to differentiate and customize the product will lead to an increased customer base and will boost the competitiveness on the market. Instead of concentrating only on the product and its quality the attention has to be on the whole procedure of manufacturing, sale, distribution and service. This way production and services are joined together and present a higher value to clients.
Further actions to maintain competitive include advancing the skill base. Attaining enough skillful workers in the long run represents a major challenge for the European steel industry as the working population in Europe keeps declining. In this regard actions should be taken in order to improve the image of the steel industry. Workshops to develop knowledge and projects to attain new employees are needed to guarantee sufficient workforce in the long run.

An important point for the future success and competitiveness of the European steel industry is to encourage consolidation and vertical integration. Due to the hard times that the European industry is facing consolidation or vertical integration would enhance the chances of survival

and future success for steel producers. Better negotiation abilities with clients, suppliers and bankers as well as enhanced access to raw materials would be the results of this action.

As seen from the analysis concluded throughout the thesis, the European steel industry is undergoing a tough stage with numerous difficulties and constantly changing environmental conditions. Not to lose the competitive edge on the global market and being successful requires taking action and strategic steps. The competitive strategies have to be constantly adapted to the altering environment. The course of the thesis works out six strategic suggestions which are considered as the most important, where focus of the steel producers should lie and where action has to be taken.

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Lebenslauf

Katarína Presalovičová

Anton Bosch-Gasse 26/10
1210 Wien
Mobil : +4369918023901
E-Mail : presalovicova.katarina@gmail.com

Persönliche Informationen

Geburtsdatum: 21.08.1989
Geburtsort: Košice, Slowakei
Staatsangehörigkeit: Slowakisch
Familienstand: ledig

Studium und Ausbildung

03/2013 → 04/2016	**Universität Wien, Betriebswirtschaftszentrum, Wien, Österreich** **Master Studium der Internationalen Betriebswirtschaft** ▪ Spezialisierung: Externes Rechnungswesen und International Management ▪ Wirtschaftssprache Spanisch
10/2008 → 02/2013	**Universität Wien, Betriebswirtschaftszentrum, Wien, Österreich** **Bachelor Studium der Internationalen Betriebswirtschaft** ▪ Wirtschaftssprache Französisch
09/2002 – 05/2008	**Gymnasium Jána Amosa Komenského, Košice, Slowakei** ▪ Abschluss des Gymnasiums mit Reifeprüfung (Note 1) ▪ English State Exam, level B2 (2008)
09/2001 – 06/2002	**Gymnasium Parhamerplatz 17, Wien, Österreich**
09/1998 – 06/2001	**Primarschule Rony, Hünenberg, Schweiz**
09/1995 – 06/1998	**Grundschule Laca Novomeského 2, Košice, Slowakei**

Berufserfahrung und Weiterbildung

11/2015 – aktuell	**UNIQA Real Estate Management, Wien, Österreich** Asset Management CEE
09/2013- 10/2015	**UNIQA Real Estate Management, Wien, Österreich** Finanzen & Controlling ▪ Laufendes Reporting, Mitarbeit bei der Planung ▪ Unterstützung bei der Budgeterstellung ▪ Durchführung von Analysen
07/2013-08/2013	**U.S. Steel Košice, s.r.o, Košice, Slowakei**

Ferialpraktikum im Bereich Sales und Marketing

- Unterstützung der Salesmitarbeiter bei laufenden Prozessen (Angebotserstellung, Preiskalkulation, Vertriebsaktionen)
- Wettbewerbsbeobachtung und –analysen

09/2012- 03/2013 **S.Oliver *GmbH* & CO. KG, Wien, Österreich**
Sales Assistant

02/2011 – 07/2011 **ERASMUS Studienaufenthalt in Lissabon, Portugal**

- Studentin an der Universidade Nova de Lisboa, SS 2011
- Absolvierung eines portugiesisch Kurses

07/2006 - 02/2007 **Studienaufenthalt in Quincy, Kalifornien, USA**

- Sch*ül*erin an der Quincy Junior- Senior High School

Qualifikationen / Zusätzliches

Sprachen

- **Slowakisch:** Muttersprache
- **Deutsch:** verhandlungssicher
- **Englisch**: verhandlungssicher
- **Spanisch**: Grundkenntnisse
- **Französisch**: Grundkenntnisse

EDV

- **Microsoft Office (Excel, Word, PowerPoint, etc.):** fortgeschrittene Kenntnisse
- **Internet Explorer:** fortgeschrittene Kenntnisse
- **Adobe Photosho**p**:** fortgeschrittene Kenntnisse
- **SAP, Professional Planner:** Grundkenntnisse

Soziale Fähigkeiten und Kompetenzen

- Gute Fähigkeiten zur Anpassung an ein multikulturelles Umfeld
- Sehr gute Auffassungsfähigkeit und Kommunikationskompetenzen
- Starker Teamgeist

Interessen

- Reisen
- Sport
- Kultur

Wien, 09.04.2016